ClickShare Conference and Ochno

Introduction

ClickShare Conference (CX-20, CX-30, CX-50, CX-50 Gen2) in combination with Ochno Power Conference 3 (OPC3) USB-C switch provides seamless installations integrating

- ClickShare wireless content sharing and conferencing (referred to as "BYOM"),
- wired screen sharing and conferencing (referred to as "BYOD"),
- power to laptops and
- UC room solutions (MTR, ZR, …).

ClickShare Conference offers wireless, easy to use, agnostic conferencing (BYOM) from laptops. Ochno Power Conference is the base for a user-friendly and cable sanitized meeting room offering USB-C connectivity and integration with UC room solutions. The ClickShare flexible room experience allows customers to seamlessly integrate wireless sharing and conferencing with Collaboration Bars such as Logitech RallyBar and Poly X-series as well as Computer-based Room Systems. Ochno Power Conference expands the flexible room experience by adding multiple powered laptop BYOD connections, expanded ClickShare USB-C capabilities, and integration with UC room solutions.

All these elements of ClickShare Conference and Ochno Power Conference contribute to meeting equity for hybrid meetings for meeting rooms that require extra flexibility.

Remark: the main goal of this document is to provide recommended set ups and use cases. Please refer to specific product documentation (installation and reference manuals, spec sheets, etc.) for specific product information, e.g. wiring, specific port functions and supported features and limitations.

UC-hosted and laptop-hosted meetings

In a meeting room, hybrid meetings can be hosted in multiple ways:

- **UC-hosted meetings** as meetings running on a UC system installed in the room. This is typically implemented by a
    - **UC Room System**: MTR running on a Windows PC installed in the meeting room running the UC meeting room application. These devices use external audio-video peripherals.
    - **UC Collaboration Bar**: mostly Android-based all-in-one devices (camera, speakerphone, compute) that run the UC meeting room application.
- **Laptop-hosted meetings** as meetings running on a user laptop. This can be performed by
    - A laptop wirelessly connected to ClickShare Conference to use the meeting room display and peripherals. We call this "**BYOM**".
    - A laptop wired (USB-C or HDMI and USB) to the meeting room display and peripherals. We call this "**BYOD**".

For many rooms with a UC system, there is a need to support laptop-hosted meetings too since there are situations when it is not possible to join the target meeting on the UC system. Therefore, for rooms with a dedicated UC system (with Microsoft Teams Room application), there are two different modes that the users can use their laptop:

- **Content-share to UC-hosted meeting:** the meeting is joined and hosted by the UC system. Users can share their laptop's screen or application (in case ClickShare is used) into that meeting. When sharing via ClickShare, it is also possible to share content from two users side by side (all CX except CX-20). When using a CX-50 Gen2 it is also possible to share wired laptop and wireless content side-side.
  This same intuitive content sharing into a UC session is also available for local meetings.
- **Laptop-hosted meeting:** users start the meeting client on their laptop. They want to make use of the meeting room display and audio-video peripherals. Technically, this means that the system needs to transfer the USB devices from the UC-system to the laptop.
  In case ClickShare is used, Smart Meeting Flows allow to view people and content side by side.

The goal is to cover all these situations so that seamlessly integrated solutions with wireless BYOM, wired BYOD and UC-hosted meetings can be provided. With the current ClickShare and Ochno versions, the following use cases are supported:

	ClickShare BYOM & Laptop BYOD	ClickShare BYOM & Laptop BYOD & MTR on (Windows) Room System
All CX	• "Exclusive" sharing and conferencing • Laptop charging • Single display	• Single & dual display MTR • MTR session awareness • "Exclusive" wired & wireless local & remote sharing • "Exclusive" wired & wireless conferencing • Laptop charging
CX-50 Gen2	• Dual display BYOM • "Inclusive" wired & wireless content sharing • "Exclusive" conferencing • Laptop charging	

Remarks:
"Exclusive" refers to sharing "one at the time".
"Inclusive" refers to "side by side wired & wireless sharing".
Sharing includes content and audio.

Known general issues and limitations
Because of the complexity of the solution, it is strongly recommended to thoroughly test any deployment prior to operational use.

These are known issues and limitation:

- **Not all peripherals might work**: while several peripherals have been tested, not every peripheral has been tested. There might be peripherals that will not work due to too many hubs or other reasons.
- Since it sometimes takes some time before the peripherals are switched to ClickShare when a user connects, the **ClickShare App does not always pick up the peripherals**. The user can disconnect and reconnect to get the peripherals. For this reason, we recommend using the Button in combination with Ochno Power Conference.
- **Different audio volume levels** have been observed when sharing directly or via ClickShare, and when sharing through the MTR.
- When **USB touch** is part of the peripherals, **the user might have to share twice**. This happens when the user connects to CX and quickly shares. Since there is a delay in getting the touch

peripheral, CX will stop the sharing once it gets this. After the user shares again, all works normal including the touch.

- **Sleep and wakeup**: we observed that some displays do not wake up automatically when ClickShare or MTR wakeup, or a laptop is connected.
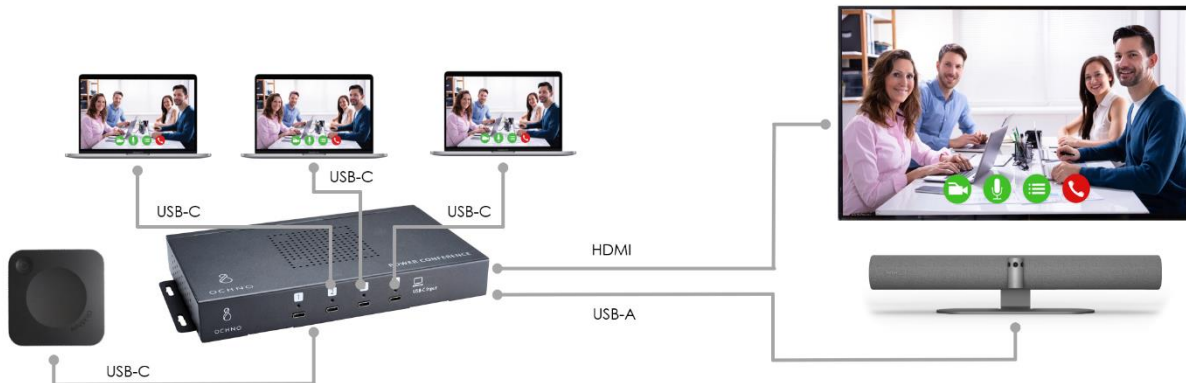
ClickShare and Ochno use cases

ClickShare Conference BYOM or laptop BYOD

Recommended for environments where:

- Users want to extend the wireless BYOM setup with several USB-C wired connections for wired screen sharing and BYOD
- The wired USB-C connection(s) must provide power to charge the laptop

System overview and general mode of operation

To set up the configuration,

- Connect Ochno Power Conference to external audio-video peripheral(s) and display via HDMI and USB-A.
- Connect ClickShare to Ochno Power Conference. For a detailed description how to connect the ClickShare base unit, refer to *Annex A: Different ways to connect ClickShare CX to Ochno Power Conference.*
  PS: in all configurations, it is assumed that ClickShare is connected to Ochno Port 1.
- Connect the USB-C cable(s) for laptop(s) to Ochno Power Conference. Ochno Power Conference 3 provides 4 x USB-C input ports that support charging, video and USB-communication.
  - o Either just a single USB-C cable is made available to the user or all 3 can be available. If more than 1 USB-C connection is available, different ways to handle switching can be configured. Refer to *Annex B: Port switching with OPC3 and CX* for detailed information about this.

ClickShare Conference configuration

No specific configuration needed. Leave the ClickShare wallpaper enabled when no one is sharing. This will be the default shown when there is no activity in the room.

Ochno Power Conference configuration

Configuration is done through Ochno Management Console or Ochno Operated.

The only configuration that is needed is to decide which auto-switching principle is needed and details for this can be found under: *Annex B: Port switching with OPC3 and CX.*

Functional description

After this setup and configuration, the solution is ready to be used. Users can now

- Wirelessly connect to ClickShare with the Button or the ClickShare App
    o Wirelessly share content (screen or app) including audio from any laptop or BYOD (phone or tablet) using ClickShare apps and/or native protocols (Airplay, Google Cast or Miracast).
    o Start any video conference client on their laptop.
    o Once they make sure that the "Room Camera" and "Room Speakerphone" are selected in the UC client, they can enjoy using the camera and speakerphone attached the Ochno Power Conference in the conference call.
    o If the room is equipped with a touch display and the user wants to use ClickShare blackboard, annotation, and touch back (to the laptop), make sure the USB of the touch display is connected to Ochno Power Conference as well.
- When the user connects his laptop via the USB-C cable directly to the Ochno Power Conference, the system either automatically switches to that port or the user manually selects that connection.
    o After the system has switched to the connected USB-C cable, the users' laptop will both share his laptop screen (with audio) to the display and get access to the USB-devices of the room.

Limitations:

- The solution has only one laptop or ClickShare active at any point in time ("exclusive" sharing and conferencing).
- In the current version, inserting the laptop immediately switches the connections. When the user disconnects the USB-C cable, the ClickShare system is re-activated and the default ClickShare wallpaper is shown.
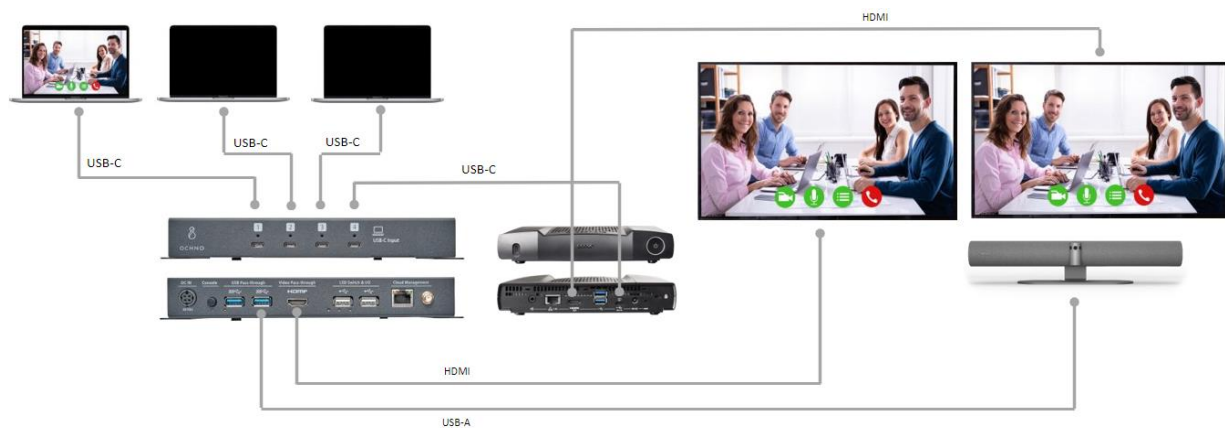
ClickShare Conference BYOM or laptop BYOD with CX-50 Gen2 (dual display)

Recommended for environments where:

- Users want to extend the wireless BYOM setup with several USB-C wired connections for wired screen sharing and BYOD
- The wired USB-C connection(s) must provide power to charge the laptop
- Users expect "integrated" content sharing, i.e. they want to see wired and wireless sharing side by side
- Users want to benefit from dual display screen sharing (content on 2 displays) and wireless conferencing (people and content on 2 displays)

System overview and general mode of operation

There are several setups possible. The above requirements are best fulfilled with this setup:

To set up the configuration,

- The setup is the same as for the single display case (see previous)
- Additionally, CX-50 Gen2 HDMI Out is directly connected to the second display

ClickShare Conference configuration

On a dual display set up, make sure to set up the Display & Audio – Outputs – Display mode to "Extended".

Ochno Power Conference configuration

Configuration is done through Ochno Management Console or Ochno Operated.

The only configuration that is needed is to decide which auto-switching principle is needed and details for this can be found under: *Annex B: Port switching with OPC3 and CX.*

Functional description

After this setup and configuration, the solution is ready to be used. Users can now

- Wirelessly connect to ClickShare with the Button or the ClickShare App
  - Wirelessly share content (screen or app) including audio from any laptop or BYOD (phone or tablet) using ClickShare apps and/or native protocols (Airplay, Google Cast or Miracast).
    - In this dual display setup, each of the two sources will be shown on one of the displays.
  - Start any video conference client on their laptop.
  - Once they make sure that the "Room Camera" and "Room Speakerphone" are selected in the UC client, they can enjoy using the camera and speakerphone attached the Ochno Power Conference in the conference call. With the Smart Meeting Flows, users can see people and content on the dual display setup.
  - If the room is equipped with a touch display and the user wants to use ClickShare blackboard, annotation, and touch back (to the laptop), make sure the USB of the touch display is connected to Ochno Power Conference as well.
- When the user connects his laptop via the USB-C cable directly to the Ochno Power Conference, the system either automatically switches to that port or the user manually selects that connection.
  - After the system has switched to the connected USB-C cable, the users' laptop will both share his laptop screen (with audio) to the display and get access to the USB-devices of the room.
    - In the current version, inserting the laptop immediately switches the connections.
  - When a USB-C laptop source is shown, ClickShare show one or two sources on the other display.
    - Since this involves a reconfiguration of the ClickShare screen set up, content shown to ClickShare will be disconnected. Users can click the Button or ClickShare App again, to share content again.
    - When 2 sources are shared to ClickShare, these will be shown side by side on the same display.
    - Only one USB-C laptop can be shown at any point in time.

When the user disconnects the USB-C cable, the ClickShare system is re-activated and the default ClickShare wallpaper is shown.
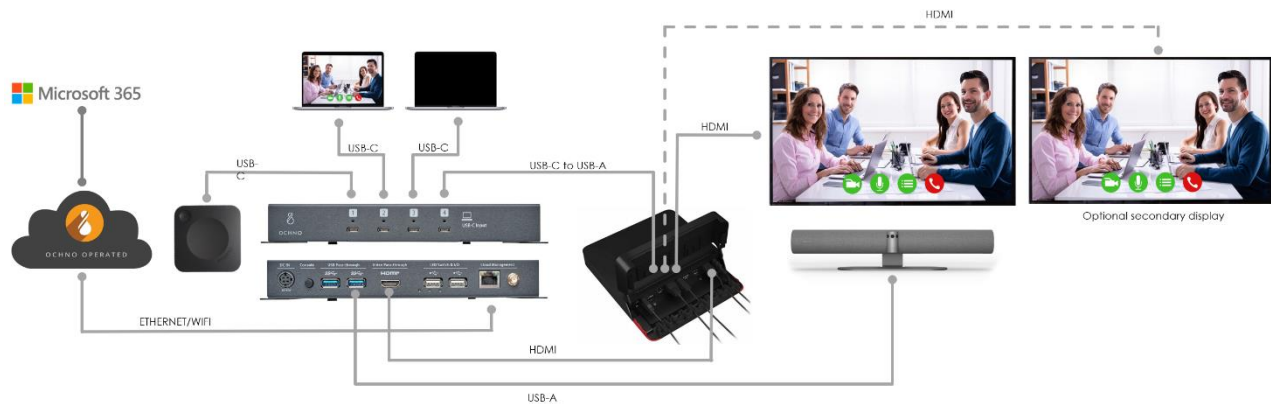
Limitations:

- In the current version, inserting the laptop immediately switches the connections. When the user disconnects the USB-C cable, the ClickShare system is re-activated and the default ClickShare wallpaper is shown.

ClickShare BYOM & Laptop BYOD & MTR on (Windows) Room System

Recommended for environments where:

- Customers want to use a Room System for their "default" conferencing
- UC Room System needs to be extended with wireless BYOM AND multiple wired BYOD sharing and conferencing capabilities
- Customers want to share wirelessly content and wired screen to the Room System
- Customers want to perform wireless and wired conferencing from their laptop making use of the same peripherals as used by the Room System
- The wired USB-C connection(s) must provide power to charge the laptop

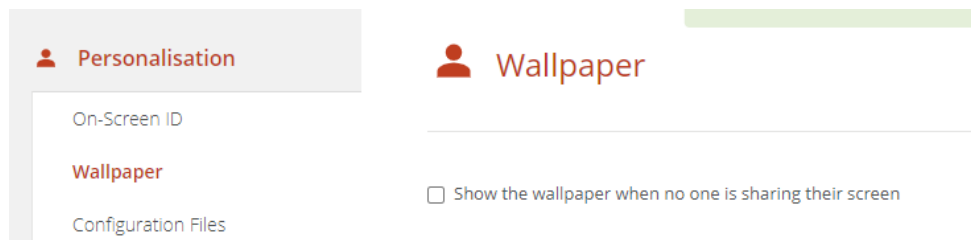**System overview and general mode of operation**

To set up the configuration,

- Connect the audio-video peripherals to the Ochno Power Conference USB-A Pass-through ports
- Connect Ochno Power Conference HDMI out to UC Room System HDMI input
- Connect UC Room System USB to Ochno Power Conference USB-C (in the config we assume this is connected to Port 4)
- Connect one or 2 displays to the UC Room System
- Connect CX-20/CX-30/CX-50 to Ochno Power Conference USB-C (in the config we assume ClickShare is connected to Port 1). Refer to refer to *Annex A: Different ways to connect ClickShare CX to Ochno Power Conference* for details.
- Connect any laptop to the remaining Ochno Power Conference USB-C ports

ClickShare Conference configuration

To avoid that the ClickShare wallpaper is shown all the time while an MTR session is ongoing, the wallpaper should be switched off as shown in the diagram below.

Ochno Power Conference configuration

Configuration is done through Ochno Management Console or Ochno Operated (https://operated.ochno.com/).
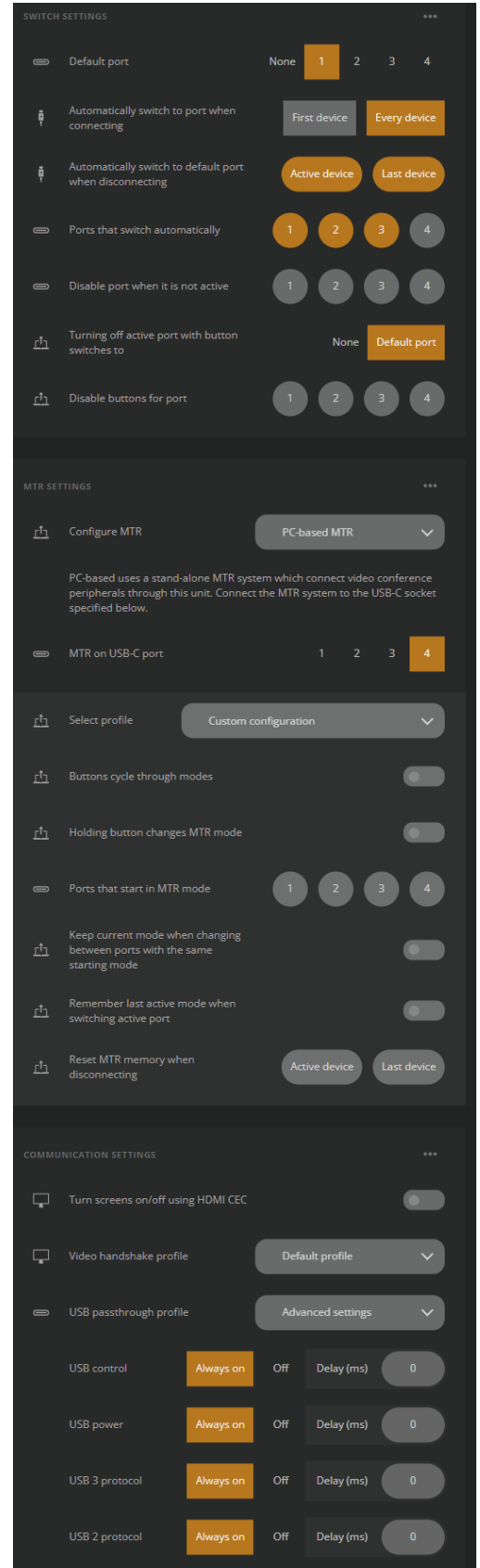
There are three parts that needs to be configured:

- Automatic or manual switching between USB-C ports. Refer to *Annex B: Port switching with OPC3 and CX* for details.
- If Microsoft Teams Room is used as UC-system, refer to *Annex C: Automated switching between content-ingest and BYOD for UC-rooms for details.*
- Configure the unit for use together with Windows-based UC-system as outlined in the diagram. The configuration setting above assumes UC-system PC is connected to USB-C port 4.

Functional description

After this simple setup, the solution is ready to be used. The following scenarios are supported:

- When a meeting is joined on the UC Room System, USB-devices will always be routed to the UC-system, regardless of if a meeting is active on ClickShare laptop or USB-C connected laptop.
- When a meeting is joined on the UC Room System, content from ClickShare and/or laptop can be shared into the UC Room session.
- If no meeting is started on the UC Room System and a user connects using USB-C or wireless using ClickShare, USB-devices will automatically be routed to the laptop.
    - o Remark: currently the USB-devices are connected to ClickShare when no activity is ongoing. Therefore, when e.g. an MTR call is started, the user has to manually enable the camera once the call is started. In the future, if no laptop is connected to an active USB-C port OR no ClickShare dongle is inserted, USB-devices will be kept at the UC-system.
- When there is no active USB-C connection to a laptop, ClickShare is default device to which the peripherals are switched.
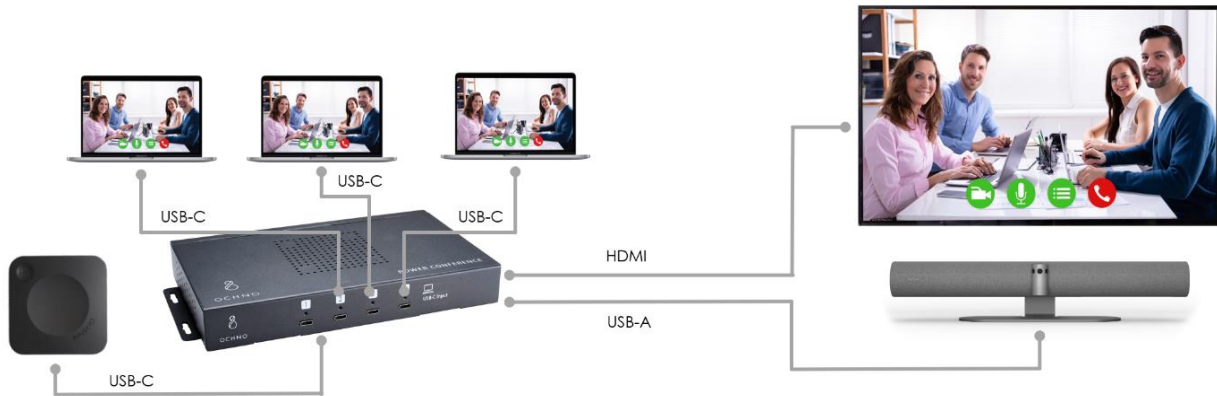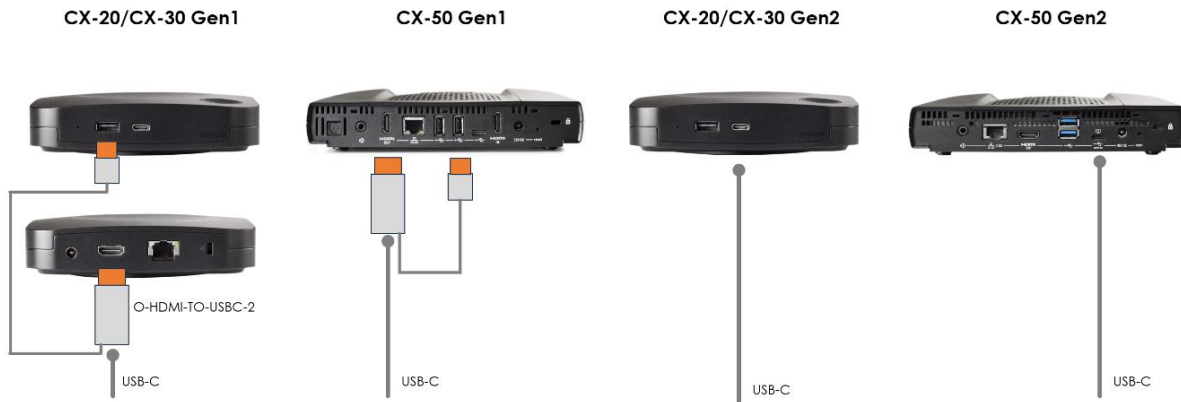
Support

For any support questions or help with any specific configuration, please contact Ochno support at https://ochno.atlassian.net/servicedesk/customer/portals

Annex A. Different ways to connect ClickShare CX to Ochno Power Conference

Ochno Power Conference 3 connects all video sources and USB hosts through USB-C ports. Each port provides up to 100W power, USB 2 and USB 3 communication and DisplayPort 1.4 Alt-mode video through a single connection.
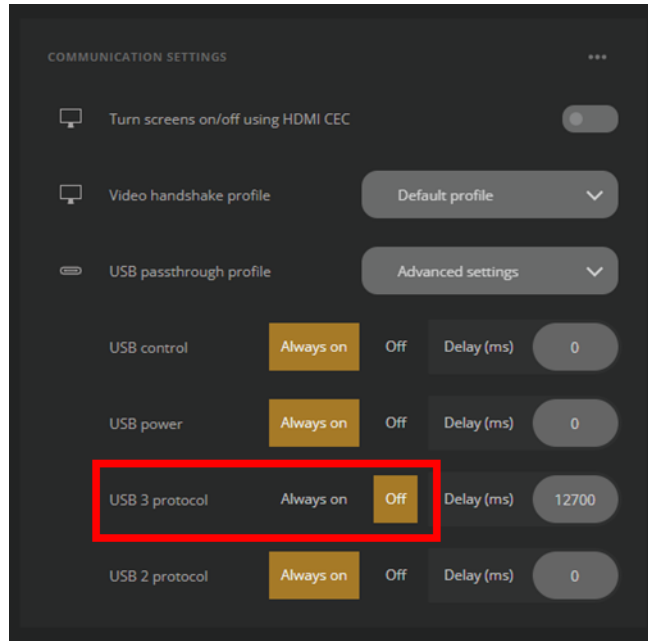

When connecting this USB-C cable to a Clickshare system, there are two options depending if it is a Gen 1 or Gen 2 system:
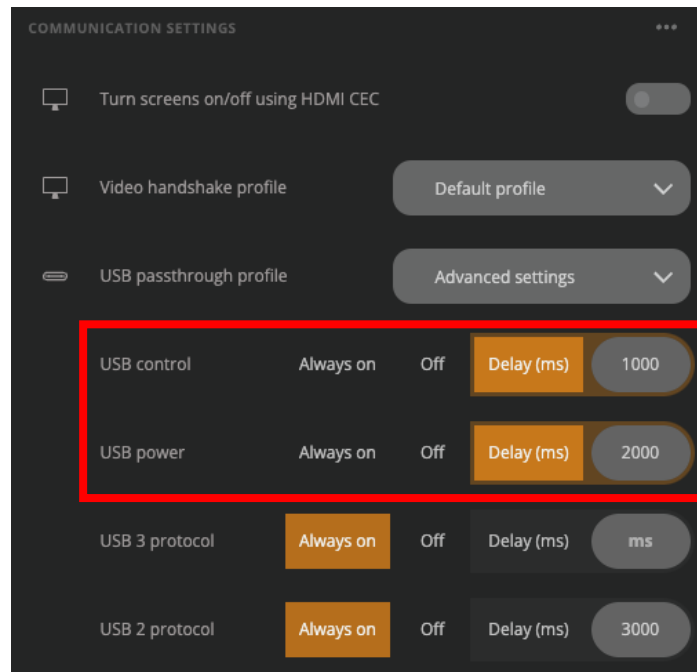

Clickshare Gen 1 systems have one HDMI output video and one USB-A port (two on CX-50) for connecting USB-devices. To be able to connect this to a USB-C port an adapter is needed. Ochno provides a HDMI+USB-A to USB-C adapter (p/n: O-HDMI-TO-USBC-2). Note that a typical USB-C to HDMI dongle that is used for laptops with USB-C to connect to a HDMI display does not work since the direction is the opposite and none of these types of products are bi-directional.

When using the adapter it is recommended to switch off the USB 3 protocol in the configuration since this adapter supports USB 2.

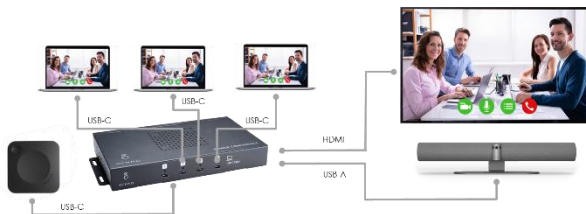In cases there are issues with the switching of the peripherals, setting a delay can help to solve these.

For Gen2 system, Ochno Power Conference provides up to 100W power on each USB-C port which is enough to power both the CX-20/CX-30 and the CX-50, making the complete installation with just one USB-C cable for power, video and USB access.

Annex B. Port switching with OPC3 and CX

With the 4 USB-C port Ochno Power Conference 3 it is possible to connect CX and up to 3 USB-C laptops to the 4 ports. In smaller rooms it might be preferably to just use one USB-C connection
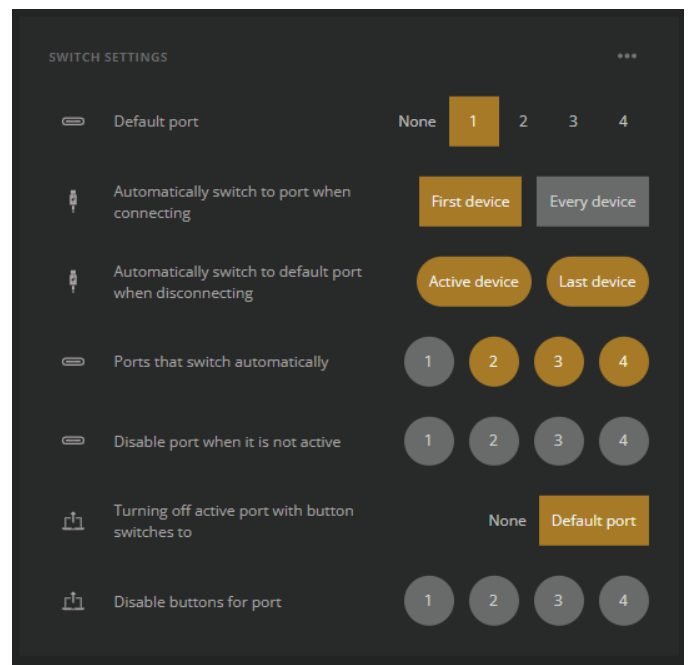

and for the larger room use all 3 connections.

There are 3 different options to handle the switching between the ClickShare system and the USB-C connections. The configurations shown below all assume ClickShare is connected to Port 1.

Single USB-C cable

When using a single USB-C connection for laptop, the recommended behavior is:

- The CX is active (and receives the peripherals) when no laptop is connected via USB-C.
- When a laptop is connected via USB-C, the system will automatically switch over the laptop's USB-C connection.
  PS: In the current version, inserting the laptop immediately switches the connections
- When the user un-plugs the USB-C cable, the CX re-activated and receives the peripherals.

The configuration for this behavior is displayed in the diagram.

Multiple USB-C cables using auto-switching without buttons

When using multiple USB-C cables, there is an option to handle switching automatically as well. The preferable configuration is the following:

- The CX is active (and receives the peripherals) when no laptop is connected via USB-C.
- When the first laptop is connected via USB-C, the system will automatically switch over the laptop's USB-C connection.

- If a second or third laptop is connected to the other 2 USB-C cables, there is no switching. Instead, they will only charge.
  - If one wants to change this so that the last connected laptop is shown, switch "First device" to "Every device" in the configuration.
- If the first laptop disconnects, the CX is re-activated while the other connected laptops remain charging.
  - For the user to get the display and peripherals on the second or third laptop after the first is unplugged, they must re-plug their laptop.
  - PS: In the current version, inserting the laptop immediately switches the connections

The configuration for this scenario is the same as for the single cable.
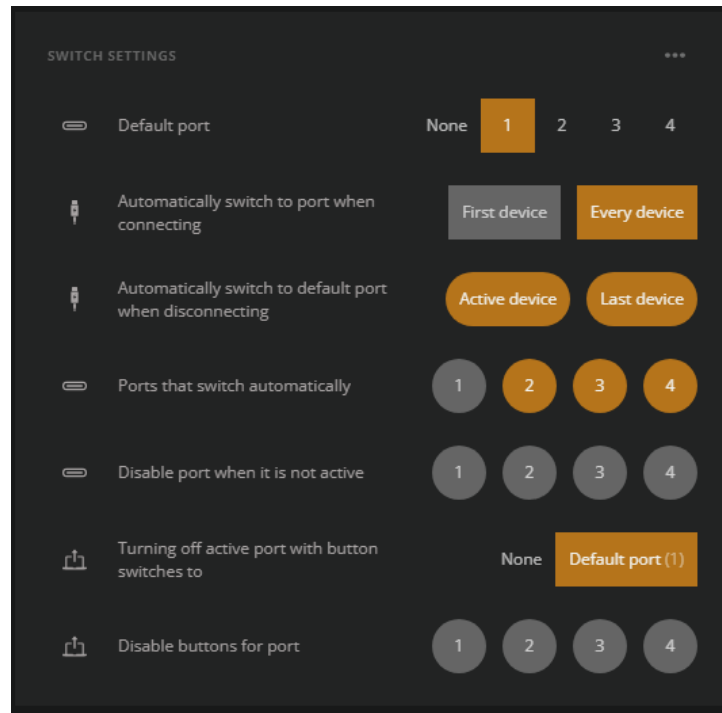
Multiple USB-C cables with manual switching.

Since there might be some confusion when using multiple USB-C cables and the auto-switching method above, it is recommended to use manual switching in these cases. The following options for this exist:

- Ochno separate LED-button. Simply integrated by an 8mm hole. Green LED indicates active port. Typically used with pull-out USB-C cables. Ochno part number: **O-PC-LS-1**

- Ochno LED Socket: Stylish USB-C outlet with integrated LED button. Ochno right-angular USB-C to USB-C cables are typically used to connect laptop. Ochno part number: **O-SWO-100-1** (alu-color), **O-SWO-100-S-1** (black color).
  When a user plugs in his laptop into the LED socket, he can then push the button to share/unshare his laptop. Each time he will be able to share his display and receive the audio-video peripherals. In this case, the last user who clicks the button receives the USB-C connection. When all are unclicked, then USB-C return to ClickShare.

- External control system of choice: Integration with Ochno Power Conference is done via RS232 port, which is provided by an external adapter, Ochno part number: **O-RS232-100-1**.

The configuration for this is shown in following diagram.

When the buttons are used for switching, clicking the button will always trigger the switch to the connected laptop independent of the setting of "First device" or "Every device"

Annex C: Automated switching between content-ingest and BYOD/BYOM for MTR rooms

Ochno Power Conference contains a feature that switches the system from UC-content ingest mode to BYOD/BYOM-mode automatically depending if there is an ongoing meeting on the UC-system. This is implemented by an integration between Ochno Operated and the cloud-based APIs of the UC-system to ensure that the Ochno Power Conference knows the real-time state of the UC-system. At this moment, this is supported for MTR rooms.

The activation process for all these integrations is the following:

1. Setup a connection between the Ochno Operated Account and the matching corporate account at Microsoft. Done once for the entire end-customer company.
2. Map each Ochno Power Conference unit to the matching room email account that is used by the UC-system of a particular room. Done once for each room.

For Microsoft Teams Room, step 1 is described here:

[Microsoft 365 Integration Guide – Ochno](#).

MTR PC/Windows-based principles

- When ClickShare is connected and no other activities are going on, it will receive the peripherals.
- When an MTR session is started on the PC/Windows MTR, USB-devices are all routed the UC-system. Typically, the user will have to click on the Camera to have the camera activated. This behavior will be changed in a future version so that MTR gets the peripherals by default.
- When a laptop is connected to an active port or the user switches to a port where a laptop is currently connected, or a wireless user connects to ClickShare and:
  - There is an active meeting on the UC-system, USB-devices stays connected to the UC-system, but they can all share content into the MTR session
  - If there is no active meeting on the UC-system, USB-devices are transferred to the laptop or can be used by the ClickShare user.
- When the system is in BYOD-mode and the active laptop is disconnected, USB-devices are routed back to ClickShare.
- If the system is on BYOD- or BYOM-mode and someone joins a meeting on the UC-system, USB-devices are routed from the laptop to the UC-system immediately.
- If a laptop is connected and there is an UC-meeting and the UC-meeting ends, the USB-devices are routed to ClickShare or the laptop immediately when the meeting ends.