

# Adding Interactivity to Microsoft Teams Rooms with Avocor Interactive Flat Panel Displays

Connecting, configuring, and deploying Avocor Interactive Flat Panel Displays with Microsoft Teams Room Systems

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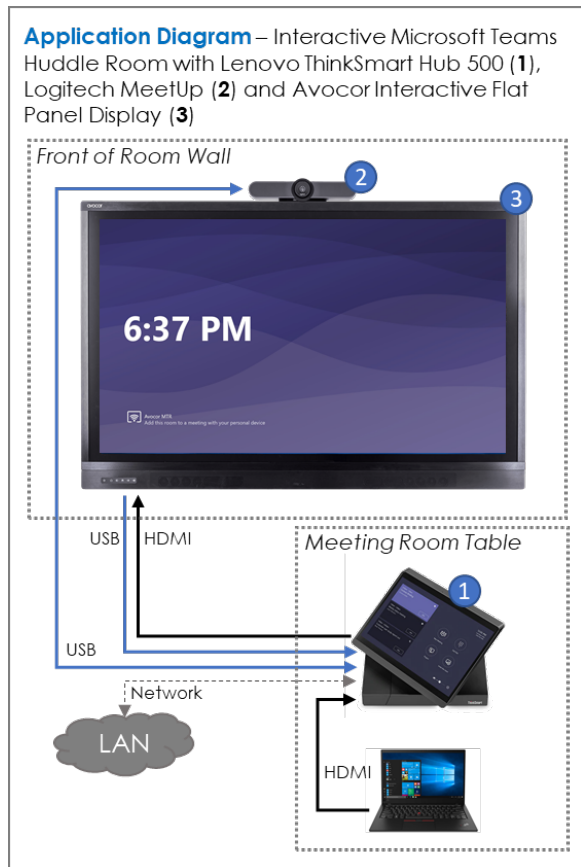
# 1. Overview – Interactive Microsoft Teams Rooms

The Microsoft Teams Room (MTR) platform brings Microsoft Teams meetings to conference rooms of all sizes. The MTR software experience is hosted by certified, MTR-imaged computer hardware with audio and video conferencing supported by a range of certified solutions from companies like Lenovo, Logitech, Crestron, HP, Yealink and others.

In 2019, Microsoft added support for Teams Whiteboarding to MTR software, enabling interactive collaboration in MTR-enabled meeting rooms.

Adding Avocor IFPDs to MTR solutions requires an additional USB connection between the MTR-imaged computer and the display to activate touch. However, there are a few additional steps required to get the system properly configured for interactivity in the Teams meeting room.

This document will describe what you'll need to activate MTR interactivity in meeting rooms with Avocor, and important configuration considerations.



## 1.1 Requirements and Connections

The following components and connections are required to enable the interactive features of Microsoft Teams Rooms:

- MTR-imaged computer running Microsoft Teams Room version 4.2.4.0 or later
- Avocor interactive flat panel display (IFPD) connected to MTR computer via video (HDMI, DisplayPort) and USB
- Ability to log into the Admin account on the MTR computer
- USB keyboard connected to the MTR computer for initial setup

## 1.2 Configuring the MTR System for Interactivity

Three important steps are required to configure Microsoft Teams Rooms to support Teams Whiteboarding and to deliver a great user experience.

### 1.2.1 Enable Microsoft Whiteboard Web for your tenant

To take advantage of Microsoft Whiteboard during Teams Meetings, it must be enabled for your organization's Office 365 tenant. Check with your Office 365 administrator to ensure Whiteboard is enabled, if it is not instructions for enabling it are [available here](#).

### 1.2.2 Enable 1080p/60Hz video mode

Microsoft recommends that the front-of-room display resolution in Microsoft Teams Rooms not exceed 1920x1080p. Avocor displays natively support up to 4k/60Hz - to limit display resolution to 1080p/60Hz use the Avocor remote control to access the settings of the Avocor IFPD.

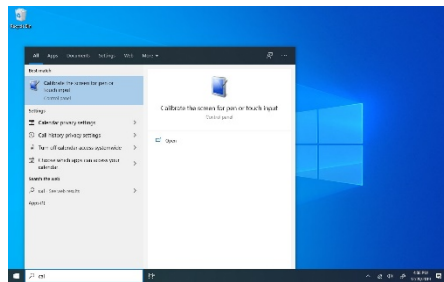
1. Click the Menu button on the Avocor remote control.
2. Use the Down Navigation Arrow to scroll down to Adv. Settings.
3. Use the Right Navigation Arrow to enter Adv. Settings, and the Down Navigation Arrow to select EDID Switch, and click OK.
4. Use the Down Navigation Arrow to select the video input connected to the MTR computer, select that input using the Right Navigation Arrow, and use the Up/Down Navigation Arrow to select 1080p.
5. Use the Back/Exit button to exit and close the onscreen menu.



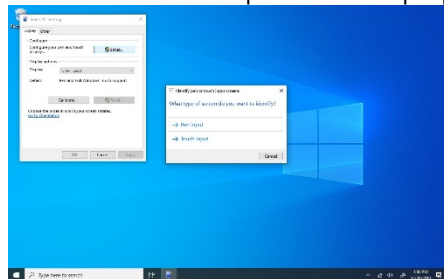
### 1.2.3 Calibrate the screen for pen or touch input

In order to configure a front of room display as a touch device, you should:

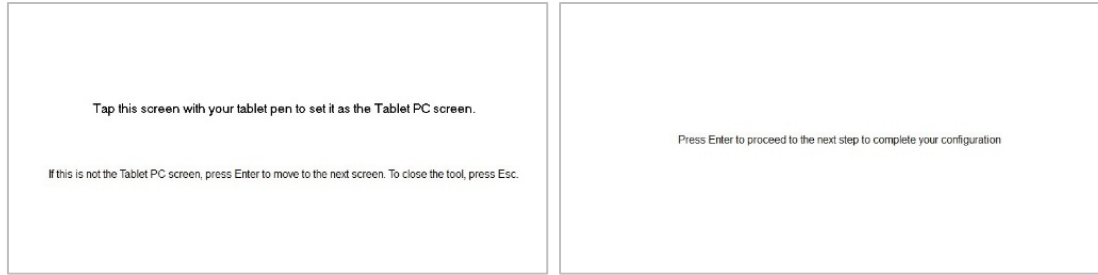
1. Connect a USB keyboard to the MTR computer.
2. Log out of the MTR software and log into the Administrator account.
  - o On the MTR controller, click "More" and then click "Settings"
  - o Input the Administrator password
  - o Select "Windows Settings" and "Go to Admin Sign-in"
  - o The MTR computer will log out of MTR and the Windows 10 login screen will be presented.
  - o Select "Administrator" account and input the password
3. Calibrate pen and touch settings.
  - o In the Search Box on the Windows Task Bar, search for and open the "Calibrate the screen for pen or touch input" feature of Windows Control Panel.



- o In "Configure" section of the Tablet PC Settings dialog box, click "Setup" and then select "Pen Input" in the pop-up window.



- A message will appear on each screen (one at a time) instructing you to tap the screen with the tablet pen to set it as the Tablet PC screen.
- When this message appears on the Avocor IFPD, tap the screen with the included stylus, and when the screen changes press Enter on the connected keyboard to move to the next screen.
  - If any non-interactive displays are being used, press Enter to skip.
- When this message appears on the MTR controller, press Enter to skip (Tap does not utilize a stylus for input).



- Click “Setup” in the “Configure” section again, but this time select “Touch Input” in the pop-up window.
  - A message will appear on each screen (one at a time) instructing you to tap the screen with a single finger to identify it as the touchscreen.
  - Tap the screen displaying this message with your finger as instructed, and press Enter on the connected keyboard to proceed. Repeat this for all interactive displays, including the Avocor IFPD and the MTR controller.
    - If any non-interactive displays are being used, press Enter to skip.



## 2. Focus on Microsoft Teams Room Interactivity

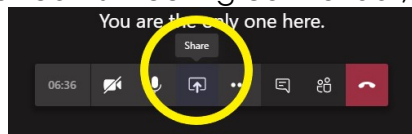
### 2.1 Current Features

#### 2.1.1 Whiteboard Shared from Microsoft Teams Client App

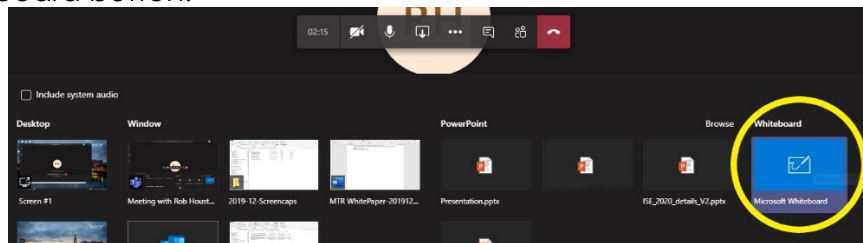
Starting with the July 2019 Microsoft Teams Room update (build 4.0.105.0), MTRs can receive and render Microsoft Whiteboard on front of room displays when shared from the Windows 10/Mac/Web Microsoft Teams Client App during ad-hoc or scheduled meetings (Whiteboard is not enabled for use during Teams calls).

Starting a Microsoft Whiteboard session from the Teams Client App is as simple as sharing other content into a Teams Meeting. Once joined to the meeting,

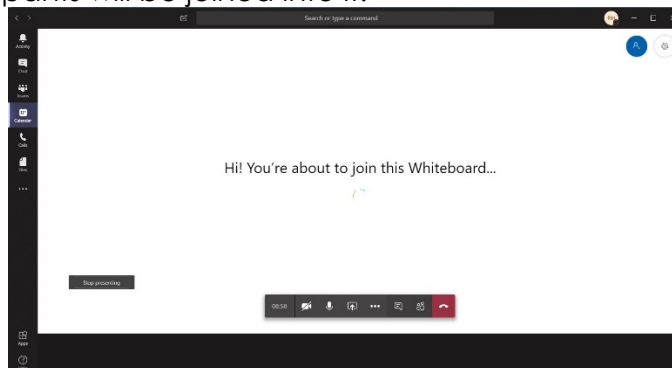
1. On the Teams Meeting control bar, click the Share button.



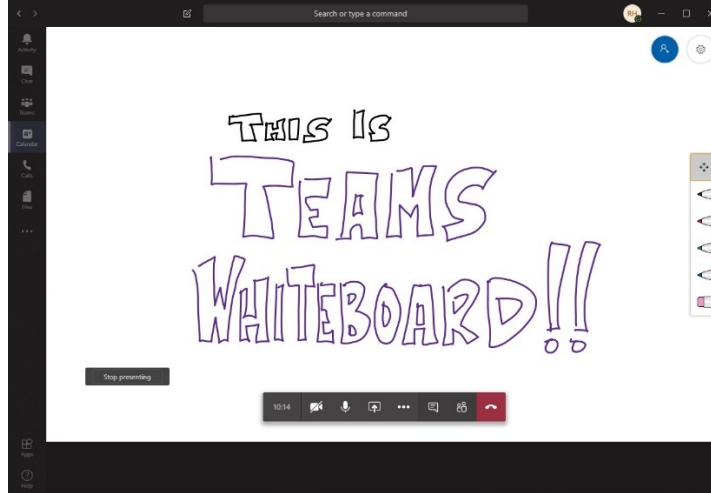
2. On the far right in the content category titled "Whiteboard," click the Microsoft Whiteboard button.



3. A new Microsoft Whiteboard will be created, and the Teams Meeting participants will be joined into it.

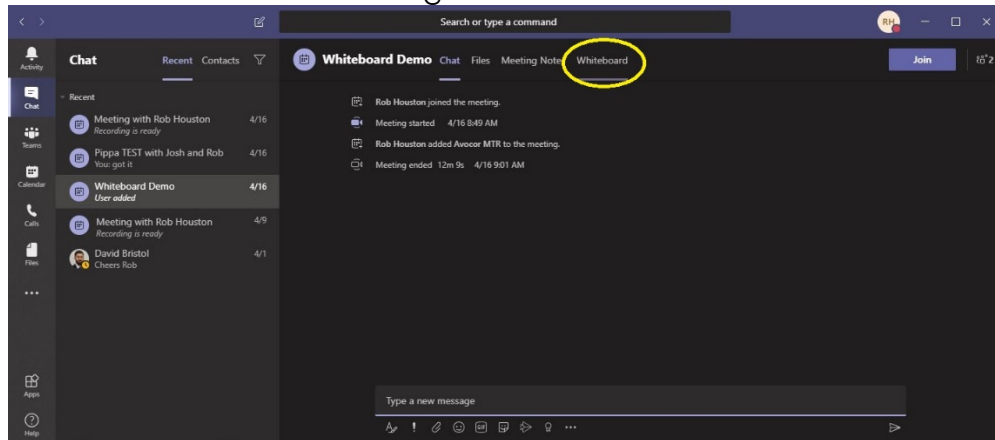


- All meeting participants can contribute to the Microsoft Whiteboard session, including people in meeting rooms with interactive display-equipped MTRs.



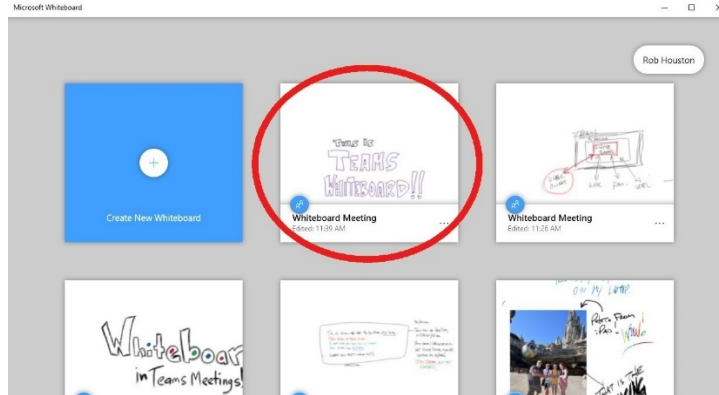
**Note:** The Microsoft Teams Client App has integrated a simplified version of the Microsoft Whiteboard application– controls are limited to being able to select among four pen colors, the eraser, or turning the pen “off” to scan around the Whiteboard.

- Users can utilize the expanded capabilities of the full Microsoft Whiteboard application during the meeting by clicking the “Open in app” button in the integrated Teams Whiteboard interface, or by opening the Microsoft Whiteboard application and opening the Whiteboard
- The Whiteboard that is generated by the Teams user during the meeting is available for future access by the meeting participants in two locations:



- Via the Microsoft Whiteboard application, where the Whiteboard from the meeting will be listed among the Whiteboard documents associated with their Office 365 account.





By saving a full “ink” version of these Whiteboards in both Teams and Microsoft Whiteboard applications, people can easily refer to and continue to iterate on ideas generated during Teams meetings.

## 2.2 Future Enhancements

The release notes and comments for [MTR build 4.0.105.0](#) provide a preview of two additional features Microsoft is planning to add in future software releases to enhance the front-of-room touch capabilities of MTRs. These include:


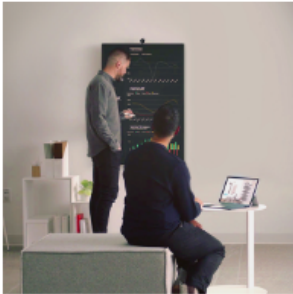
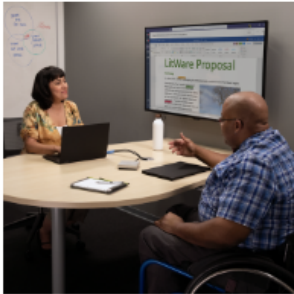



- **Front-of-Room Presentation Control** – allows a presenter the ability to control PowerPoint using the front-of-room interactive display, removing the need to use a presentation remote or keep their laptop within reach
- **Whiteboard Initiated from MTR Console** – allows people in an MTR-equipped room the alternative to start a Whiteboard session directly from the MTR control panel

### 3. Deploying Interactive Teams Room Systems with Avocor

#### 3.1 Choose your Microsoft Teams Room System

MTRs are more than just the pre-configured compute and controller – including the right audio and camera solution is critical to properly equipping your meeting spaces. Microsoft provides this information on their [Microsoft Teams devices site](#), helping make decisions about the best devices to use with Teams when on the go, in a personal environment, or in [shared spaces](#). This valuable reference will help guide you to the right solutions to consider for meeting rooms of various sizes and purposes.

**Shared spaces**

		
<b>Phone booth</b> <small>Small space to take private calls in the office.</small> <a href="#">SHOP NOW &gt;</a>	<b>Huddle space</b> <small>Microsoft Teams Room bundles optimized for open gathering spaces.</small> <a href="#">SHOP NOW &gt;</a>	<b>Focus room</b> <small>Microsoft Teams Room bundles for three- to five-person focus rooms.</small> <a href="#">SHOP NOW &gt;</a>
		
<b>Small meeting room</b> <small>Microsoft Teams Room bundles for five- to seven-person meeting rooms.</small> <a href="#">SHOP NOW &gt;</a>	<b>Midsize meeting room</b> <small>Microsoft Teams Room bundles for a medium-size meeting room with up to eleven people.</small> <a href="#">SHOP NOW &gt;</a>	<b>Large meeting room</b> <small>Microsoft Teams Room bundles for large meeting rooms with up to eighteen people.</small> <a href="#">SHOP NOW &gt;</a>

## 3.2 Choose your Avocor Interactive Flat Panel Display

When choosing the Avocor interactive flat panel display (IFPD) to combine with a Microsoft Teams Room system, there are a few important considerations.

### 3.2.1 Display Size

With 65-inch, 75-inch, and 86-inch sizes available, think about the size of the room you are equipping, how it will be used, and how far away people will be positioned.

At a high level, Avocor IFDP sizes can be matched to commonly referred room sizes, which line up intuitively with the shared spaces described above:

Display Size	Room Size
65"	Huddle/Focus/Small
75"	Small to Midsize
86"	Midsize to Large

At a more detailed level, think about how the room will be used – is this primarily a video conferencing space, or will content be shared in the form of presentations or detailed collaboration? With these use cases in mind, think about the size of the room and how far away participants might be positioned in the room.

This chart offers guidance regarding the farthest a viewer should be from a display for these typical use cases (all distances approximate):

	65"	75"	86"
<b>Reviewing Detailed Content</b>	13'	14.5'	16'
<b>Viewing Presentations</b>	19.5'	22'	24.5'
<b>Video Conferencing</b>	26'	30'	32.5'

### 3.2.2 Display Technology

Avocor offers two display lines, based on two different interactive sensing technologies, that can bring interactivity to MTRs.

- The E-series utilizes advanced Infra-Red (IR), which employs an array of LED lights and sensors in the bezel that surrounds the display to determine where the screen is being touched. This is a mature, affordable technology that performs well in video conferencing-centric scenarios.
- The F-series utilizes FlatFrog InGlass technology, that utilizes optical emitter and detectors around the periphery of the display to create and light fan-grid in front of the screen, providing fast and highly detailed touch sensing. InGlass is a high-performance technology that can support highly interactive applications as well as video conferencing-centric experiences.

Both lines utilize bonded glass, which minimizes the parallax effect people experience when writing on displays (due to the separation of where the ink appears, and the surface being physically interacted with). They also feature a matte-finish glass surface, minimizing glare and providing texture that combines with the included hard-tip styluses

to deliver a natural, intuitive writing experience. The matte finish also makes it comfortable to conveniently draw on the display with your finger.

### 3.2.3 Room Budget

Avocor's two display lines also accommodate a range of conference room technology budgets. The E-series line offers affordable performance for video conferencing-centric environments where whiteboarding and annotation the primary modes of interaction, while the F-series offers the highest performance where multiple users are interacting or rich content like 3D models are being manipulated.

## 3.3 Installing Interactive Displays

There are a few details to consider when planning for and installing your Avocor interactive flat panel display.

### 3.3.1 Mount and Cart Selection

One important aspect of deploying an interactive MTR solution is to choose the right wall mount or mobile cart for your system – so first determine if the system will be dedicated to a specific meeting room (and therefore wall mounted) or if it will be able to be moved to various rooms before use (and there more installed on a mobile cart).

Next, check the VESA mounting pattern and weight requirement for the Avocor display you will be deploying. Model-level details are available in the Avocor product datasheets, but this table provides general guidance for mount or cart selection.

	<b>65" Display</b>	<b>75" Display</b>	<b>86" Display</b>
<b>VESA Mount Pattern (mm)</b>	600 x 400	800 x 400	
<b>Weight (lbs)</b>	94-108	120-138	149-168
<b>Weight (kg)</b>	42-49	54-62	67-76

Avocor recommended mount and cart partners include:

- [Chief \(Legrand Mount Finder\)](#)
- [Heckler Design](#)
- [Peerless](#)
- [Salamander Design](#)

### 3.3.2 Display Installation

In typical meeting room environments geared toward conferencing and collaboration applications, mounting the display so that the center of the screen is approximately 1.38 meters or 4.5 feet above the floor is a good starting point. This might be slightly lower than usual conference room display mounting heights – this is to allow participants of varying heights to interact with as much of the display surface as possible.

Additionally, height may require additional consideration and adjustment to optimize the downward-viewing angle of cameras installed above the display. An alternative camera installation location to the side of the display may also be considered, but below-display locations are not recommended as people interacting with the display are likely to block the view of the room.

## 4. Links to Resources

This section includes links to helpful resources from Microsoft, Logitech and Avocor if you are interested in more information on Microsoft Teams, the Logitech Tap room solutions, or the Avocor interactive display portfolio.

### 4.1 Microsoft Resources

- [Microsoft Teams Rooms documentation](#)
- [Microsoft Teams Blog](#)
- [Microsoft Teams Rooms requirements](#)
- [Microsoft Overview of Whiteboard in Microsoft Teams](#)
- [Microsoft Teams Rooms 4.0.105.0 Release Notes](#)
- [Enable Microsoft Whiteboard for your organization](#)
- [Microsoft Teams Devices Catalog](#)

### 4.2 Avocor Resources

- [Avocor F50 Interactive Flat Panel Display product family](#)
- [Avocor E20 Interactive Flat Panel Display product family](#)
- [Avocor E10 Interactive Flat Panel Display product family](#)
- [Avocor Knowledge Base](#)