

## **Pop-Up Studio**

Overview and Assembly Manual



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#### Introduction

The instructional studio design presented in this document was created under a scenario that required adaptability for different spaces, flexible content sharing, and a central interface for controlling and recording live online courses. Specifically we were asked to create 35 studios in two months for rooms that ranged from 10x10 to 35x20 with different ceiling height, lighting, and acoustics. These studios would not be permanent installations in the room and might move by the next semester. In addition, ongoing studio support would be provided by the school's IT group, which meant using equipment that was familiar to their team. Leaning on prior experience delivering live courses from the Applied Physics Laboratory, we partnered with Johns Hopkins Engineering faculty to envision a new approach to live online course delivery.

The instructional studios started with a mobile standing desk, which serves as the command center for instruction. The desk has a room controller, document camera, and an interactive display with adapter for laptop content share. Behind the desk is a whiteboard with whiteboard camera. In front of the desk, we designed an AV cart that includes a shotgun mic pair, LED light panels, two large displays, one off-lens teleprompter, and PTZ camera.

Every aspect of the studio design was focused on reducing external factors introduced with differing spaces, while supporting the delivery of engaging learning experiences. The light panels guarantee consistent lighting regardless of the space. Using two shotgun mics provides professional audio and allows instructors to freely move around, while reducing noise pickup from other directions. Positioning the main camera below the small monitor (off-lens teleprompter) creates the feeling of direct eye contact with the audience, and the two larger displays provide a large view of students and shared content.

The studios put the instructor in control of the meeting using a Zoom Rooms controller-- allowing them to easily switch between and share multiple types of content simultaneously: main camera, document camera, laptop content, digital annotations, and whiteboard writing.

Ultimately these studios enable flexible, high quality live direct-to-device content delivery and recording that improves the learning experience for students and in an effort to help support similar initiatives across the JHU system and universities across the nation, our team has assembled this Overview and Assembly Manual. This manual is intended to provide an exhaustive resource so that others may quickly deploy these studios in other settings.

Should you have any questions, please do not hesitate to reach out, as we would be pleased to provide guidance in helping you get your pwn studios up and running.

Nathan Graham Director, Center for Digital and Media Initiatives

#### **Studio Overview**





#### 1.0 - AV Cart



#### **Component List**

Component	Name	Manufacturer	Model Number	Quantity	Note			
Number		As specified by J	HU - May be substituted	d with comparable specifications				
<b>1.1</b> a	AV Cart (Main Structure)	Heckler Design	H489	1				
1.1b	Dual Display Arms	Heckler Design	H490	1	Attaches to 1.1a - AV Cart			
<b>1.1c</b>	Camera Mount	Heckler Design	H927	1	Attaches to 1.1a - AV Cart			
1.1d	Multi-Shelf	Heckler Design	H491	1	Attaches to 1.1a - AV Cart			
<b>1.1e</b>	Big Compartment	Heckler Design	H536	1	Attaches to back of 1.1a - AV Cart			
1.1f	Sound Bar Mount	Heckler Design	H707	1	Attaches to 1.1a - AV Cart			
1.2	55"/50" Monitor	Samsung	UN50RU7100 / UN55RU8000	2	Monitor sizes should always match			
1.3	24" Monitor	HP	VH240a	1				
1.4	PTZ Camera	Aver / Logitech	S40 / Rally	1	- Aver S40 to be used in consistent light rooms - Logitech Rally to be used in mixed light rooms			
<b>1.5a</b>	Microphone - Long	Shure	VP89L	1	Mounts to Boom Pole			
1.5b	Microphone - Medium	Shure	VP89M	1	Mounts to Boom Pole			
1.5c	Boom Pole	ProAm	BOOM_ADJ	2	Custom mounting solution to AV Cart Monitor Arms			
<b>1.6</b> a	Speaker/s	PreSonus	Eris 3.5 (pair)	1	Mounts with VHB Tape to 1.1e Multi-Shelf. for sound bars, use Heckler Sound Bar AV Cart Mount			
*1.6b	2-Input USB Audio Interface	Focusrite	Scarlett 2i2	1				
1.7	LED Light Kit (pair)	Fovitec	600XB Bi-Color Led Panel With Dmx, 2-Light Kit w/ Stands	1	Custom mounting solution to AV Cart Monitor Arms			
* <b>1.</b> 8a	Zoom Rooms Computer	Dell	Optiplex 7070 Micro	1	Mounts with Human Centric - Dell Optiplex Mount			
*1.8b	HDMI Splitter	OREI	HD-102 1x2 HDMI Powered Splitter	1				
* <b>1.8c</b>	HDMI Capture Card	Logitech	Screen Share	1				
*1.8d	Computer Mount	Human Centric	Dell Optiplex Mount	1				

\* AV Components within 1.1c -Big Compartment (Not pictured at left)



#### **Component List**

Component	Name	Manufacturer	Model Number	Quantity	Note			
Number		As specified by JHU - May be substituted with comparable specifications						
2.1	Adjustable Standing Desk	Uncaged Ergonomics	Rise-Up 48x30 Height Adjustable Desk	1				
				; ; ;				
<b>2.2</b> a	Zoom Rooms Console Housing	Heckler	H601 Zoom Rooms Console for 10.2" iPad	1				
<b>2.2b</b>	iPad	Apple	10.2" iPad 32gb	1				
2.2c	Ethernet + PoE for iPad	Redpark	T272 Gigabet Ethernet + Power over Ethernet for Zoom Rooms Console	1	Mounts inside base of 2.2a			
<b>2.2d</b>	Ethernet Power Injector	n/a	n/a	1	Data Outlet			
2.3	Document Camera	IPEVO	VZ-X Wireless	1				
2.4	Touch Display	Huion	Kanvas 20	1	mirrors right monitor			





#### **Component List**

Component	Name	Manufacturer	Model Number	Quantity	Note
Number		As specified by J	IHU - May be substitute	d with compai	rable specifications
3.1	Whiteboard	Quartet	4x6 Porcelain Whiteboard	1	Center at 56" above finished floor (AFF)
( ( }					
2.2	Whiteboard Camers	Kaptivo	Kaptivo for	1	
			Zoom Rooms		







#### **Assembly Guide**

The following is a detailed guide for assembling the pop-up studios including the manufacturers' assembly instructions reordered specific to this installation, as well as, instructions for the custom modifications for these units. The upper level installation steps are as follows:

#### 1.0 - AV Cart

1.	Assemble ( <b>1.1a) AV Cart - Main Structure</b>
2.	Add <b>(1.1b) Dual Display Arms</b> to (1.1a) AV Cart
3.	Attach (1.1e) Big Compartment to (1.1a) AV Cart
4.	Attach <b>(1.1d) Multi-shelf</b> to (1.1a) AV Cart
5.	Attach (1.1c) Camera Mount to (1.1d) Multi-Shelf
6.	Attach <b>(1.1f) Sound Bar Mount</b> to (1.1a) AV Cart
7.	Attach (1.7) LED Light Kit - Poles to each end of (1.1b) Dual Display Arms pg 46
8.	Attach (1.5c) Boom Pole to each end of (1.1b) Dual Display Arms
9.	Install <b>(1.5a) and (1.5b) Microphones</b> to (1.5c) Boom Pole
10.	Attach (1.7) LED Light Kit - LED Panels to (1.7) LED Light Kit - Poles pg 49
11.	Mount <b>(1.3) 24" Monitor</b> to the top of (1.1e) Big Copartment
12.	Mount <b>(1.2) 50"/ 55" Monitors</b> to (1.1b) Dual Display Arms
13.	Mount (1.4) PTZ Camera to (1.1c) Camera Mount
14.	Mount <b>(1.6a) Speaker/s</b> to (1.1f) Sound Bar Mount
15.	Attach (1.8d) Computer Mount to the inside of (1.1e Big Compartment
16.	Install remaining components inside (1.1e) Big Compartment
17.	Feed all cables through the top corners of (1.1e) Big Compartment <u>pg 58</u>
18.	Connect all components with the cables as identified in the Wiring Diagram

#### 2.0 - AV Cart

1.	Assemble ( <b>2.1) Standing Desk</b>
2.	Assemble (2.2a) Zoom Rooms Console
3.	Install (2.2b) iPad into (2.2a) Zoom Rooms Console
4.	Install (2.2c) Ethernet + PoE for iPad into (2.2a) Zoom Rooms Console pg 68
5.	Arrange all remaining components on surface of (2.1) Standing Desk pg 69
6.	Connect all components with the cables as identified in the Wiring Diagrampg 70

#### 3.0 - Whiteboard

1.	Mount <b>(3.1) Whiteboard</b> to the wall
2.	Mount (3.2) Whiteboard Camera to the wall above (3.1 Whiteboard) pg 72
3.	Connect all components with the cables as identified in the Wiring Diagram

Step #1 - Assemble (1.1a) AV Cart - Main Structure

## Heckler AV AV CART for VESA 400 Displays



Assembly & Installation





Watch Assembly Video:



#### Limited Warranty

Heckler Design warrants your product hardware to be free from defects in material and workmanship throughout the life of the product, and electronic components for a period of one year from the original date of purchase. If you discover a defect in a product covered by this warranty, we will repair at our option using new or refurbished components, or if repair is not possible, replace the item. We reserve the right to request order numbers, receipts, and other supplemental order information as proof of purchase to validate warranty claims.

H489 R05

18

## 1:1



5mm Hex Key-MultiShelf Installation Tool





1 Unpack large parts onto soft surface



## 2 Assemble legs to base



## **3** Pop the wheels out of casters





## 4 Install casters



#### 5 Pop the wheels back



#### 6 Assemble vertical arms to base



## 8 Tighten the arm assembly screws



Step #2 - Add (1.1b) Dual Display Arms







## 1 Install Dual Display bars to vertical arms







#### Step #3 - Install (1.1e) Big Compartment

\*\*NOTE: Reverse the big compartment so the AV Equipment is exposed to the back to allow for mounting of (1.3) 24" Monitor to the hole pattern.

# Heckler AV BIG COMPARTMENT

for Heckler AV Cart H536







#### Install to Heckler AV Cart

1





4



 JOHNS HOPKINS
 Prepared by:
 CleverFlex Design
 31





#### Step #4 - Install (1.1d) Multi-Shelf below (1.1e) Big Compartment



#### **Install Multi Shelves**



#### Step #5 - Install (1.1c) Camera Mount to (1.1d) Multi-Shelf

# Heckler CAN MOUNT



Assembly & Installation



#### Compatible with:

Panacast, Panacast 2, AVer Cam520, AVer Cam530, AVer VC520, AVer All-in-One, Logitech

ConferenceCam Connect, Logitech ConferenceCam BCC950, Logitech ConferenceCam CC3000e, Logitech Group ConferenceCam, Logitech PTZ Pro, Logitech Webcam c930a, Logitech HD Pro Webcam C920, Logitech Brio

#### **Limited Warranty**

Heckler Design warrants your product to be free from defect in material and workmanship for a period of two years from the original date of purchase. Electronic components are warranted to be free from defect for a period of one year from the original date of purchase. If you discover a defect, please contact service@hecklerdesign.com. Heckler Design will repair, at our discretion, using new or refurbished components. If repair is not possible, Heckler Design will replace the item.














### Step #6 - Install (1.1f) Sound Bar Mount to (1.1a) AV Cart

### H707 - Soundbar Mount

#### for Heckler AV Cart

Compatible with most soundbar and soundbar-shaped devices with M4, M5, or 1/4-20 mounting points spaced apart from 74 mm to 726 mm.







#### **STEP 1**

Fasten the appropriate size of set screws to the soundbar and measure the distance between the mounting points.

-----





#### Mounting below the display

#### **STEP 3**

Based on the distance between your soundbar's mounting points, determine the correct installation of the soundbar-mounting brackets.



When the distance between your soundbar's mounting points are spaced 74 to 273mm (3 to 10.75 inches) apart.













## Step #7 - Attach (1.7) LED Light Kit - Poles to (1.1a) AV Cart



bottom of the pole and attach to the back of the (1.1b) Dual Monitor Arms with (1) 1-1/2" through bolt



## Step #8 - Attach (1.5c) Boom Poles to (1.1a) AV Cart



## Step #9 - Attach (1.5a+b) Microphones to (1.5c) Boom Poles



## Step #10 - Attach (1.7) LED Lights to (1.7) LED Light - Poles



## Step #11 - Mount (1.3) 24" Monitor to (1.1e) Big Compartment



Mount the Monitor directly to the back of (1.1d) Multi-Shelf that is mounted to the top of (1.1e) Big Compartment using two (2) #8-32 x 1 3/4" bolts into VESA mounting holes in the back of the monitor



Step #12 - Mount (1.2) 50"/55" Monitors to (1.1b) Dual Monitor Arms

**1** Select correct display-mounting screws



## M6 Display Mounting Hardware



1. Transfer rubber spacers from the M8 set screws.



2. Slide rubber spacers on to the M6 set screws.

## 2 Install display mounting hardware



## **3** Mount first display to Dual Display bars









**Important Saftey Tip**: Support first display until both displays are fully installed to avoid tipping and damage to equipment

## **4** Mount second display to Dual Display bars









**Important Saftey Tip**: Support first display until both displays are fully installed to avoid tipping and damage to equipment



Adjust TV mounting wingnuts to bring displays even with each other



## Step #13 - Attach (1.4) PTZ Camera to (1.1c) Camera Mount





Camera should be located just below (1.3) 24" Monitor

## Step #14 - Attach (1.6a) Speakers (1.1f) Sound Bar Mount

#### **STEP 1**

Fasten the appropriate size of set screws to the soundbar and measure the distance between the mounting points.



# Step #15 - Attach (1.8d) Computer Mount to inside of (1.1e) Big Compartment



## Step #16 - Install remaining components into (1.1e) Big Compartment Step #17 - Feed all cables through top corners of (1.1e) Big Compartment



### Step #18 - Connect all cables to the components



#### \*\*Note: Refer to Wiring Diagram on pg 15

### Step #1 - Assemble (2.1) Standing Desk

## RISE UP Assembly Instructions

#### Parts and Tools list Qty NO. Component Name Qty NO. Component Name 1 Support Beam 1 9 M4\*12 4 2 Left Bracket 1 10 Cross Bar 1 3 2 11 1 Foot Margin Right Bracket 4 Foot Pad 4 12 3mm Hex Allen 1 5 Lifting System 1Set 13 5mm Hex Allen 1 M6\*16 30 14 ST4. 8\*19 12 6 7 M8\*10 4 8 4 Gasket 8



UNCAGE







Step #2 - Assemble (2.2a) Zoom Rooms Console

**Heckler AV®** 

# ZOOM ROOMS CONSOLE



for iPad 10.2-inch 7th Generation

Assembly & Installation



Compatible with

iPad 10.2-inch 7th Generation

#### 2-Year Warranty

Heckler Design warrants your product to be free from defect in material and workmanship for a period of two years from the original date of purchase. Electronic components are warranted to be free from defect for a period of one year from the original date of purchase. If you discover a defect, please contact service@hecklerdesign.com. Heckler Design will repair, at our discretion, using new or refurbished components. If repair is not possible, Heckler Design will replace the item.

H601



#### **Remove back cover and front bezel** 1

1

F160



## 2 Route zip ties through holes





Step #3 - Install (2.2b) iPad

## **3 Route Apple Lightning cable**



4 Install iPad and plug into power





## **5** Reinstall front bezel



## 6 Tie down Lightning cable



JOHNS HOPKINS WHITING SCHOOL of ENGINEERING

## Install PoE upgrade kit



## 7 Reinstall back cover





### Step #5 - Arrange all remaining components on (2.1) Standing Desk



- 2.1 Adjustable Standing Desk
  - .2 Zoom Rooms Controller (iPad w/ Case)
- 2.3 Document Camera (IPEVO)
- 4 Touch Display (Huion Kanvas)

### Step #6 - Connect all cables to the components



#### **\*\*Note:** Refer to Wiring Diagram on pg 15

## Step #1 - Mount (3.1) Whiteboard to the wall





### Step #2 - Mount (3.2) Whiteboard Camera above (3.1) Whiteboard



Install the rectangular Kaptivo mounting plate centered above board. Then install the square control pad mounting plate on your preferred side of the board. Use supplied screws. Maximum board size: 6 ft x 4 ft (1.8m x 1.2m).

Slide Kaptivo unit onto mounting plate.
\*\*Note: Refer to Wiring Diagram on pg 15



**Wi-Fi Connection:** Connect Kaptivo data cable and USB power cable to their respective sockets inside the control pad.

**Ethernet Connection:** Connect Kaptivo data cable, USB power cable, and Ethernet cable to their respective sockets inside the control pad. If Ethernet includes power, the USB power cable is not needed



## Step #3 - Connect all cables according to the Wiring Diagram

## \*\*Note: Refer to Wiring Diagram on pg 15





5

Complete the setup and activate your account by going to **kaptivo.com/setup** in any web browser and following the online instructions.

Push the control pad onto the mounting plate. Plug in the power adapter to outlet if power is not supplied by Ethernet connection.

