



Shot on iPhone for Live Broadcast

Getting Started Guide for Third-Party Broadcast Production Companies

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Overview

This guide covers what is needed to integrate iPhone cameras into broadcast and production workflows. Using field-tested deployments and the Shot on iPhone Live Broadcast training curriculum, iPhone operates as a first-class broadcast camera in this workflow — not a consumer device. The system is engineered to meet broadcast standards, integrate with SDI and fiber infrastructure, and be controlled from a remote iPad operator position. The production can be a single cam, multi-cam, or mixed production using iPhones and broadcast cameras.

What You Need

To get Shot on iPhone Live Broadcast up and running, there are devices and associated equipment, signal flow hardware, and cabling and network configurations to be sourced and in place for a successful broadcast.

Core devices

Device	Role
iPhone 17 Pro Max (latest iOS)	Camera — one per position
iPad Pro (M-series chip required, latest iOS)	Master remote controller — truck side

Camera rigging

- Beastgrip Beastcage for iPhone 17 Pro Max (BGR212-BC) or Beastmod Filmmaking Cage
- Beastgrip Photon PL Lens Adapter (if using external PL lenses)
- Cooling fan with on/off switch
- Fluid head tripod rated for external lens weight
 - **Note:** External follow-focus handles do not control iPhone's internal lenses in Blackmagic Camera app.
- Variable ND filter set — one per camera (essential for outdoor production)

Signal flow hardware — one set per camera

- Blackmagic Camera ProDock
- AJA HA5-4K HDMI-to-SDI converter — specifically, the 4K version
- MultiDyne SDI/Ethernet-to-Fiber converter
- USB-C power cable
- USB-C Ethernet dongle
- HDMI cable (bring spares — HDMI connections can be unreliable)

Networking

- Dedicated camera control VLAN (managed in broadcast truck) or unmanaged Gigabit Ethernet switch if doing a stand-alone Shot on iPhone production through post-production
- Ethernet cables — quantity based on camera geography
- Static IP addresses assigned to all devices before the event

Audio

- No audio should be embedded through iPhone unless fed through the Blackmagic Camera ProDock
- Audio can be externally mixed and then embedded through the Blackmagic Camera ProDock, or recorded externally if in a post-produced shoot

Bill of Materials: iPhone Camera Rig

Product Item	Quantity	Description	Notes
iPhone 17 Pro Max	1	Smartphone camera body (USB-C) and host device for capture and control	
BeastGrip iPhone 17 ProMax Cage	1	Pro-grade camera cage for iPhone 17 Pro Max	
Blackmagic Design Camera ProDock	1	Gives iPhone 17 Pro and 17 Pro Max access to an assortment of interfaces via attached USB-C cable	
Beastmod	1	Cinema-grade cage upgrade for Beastcage for iPhone 17 and 16 Series	For external lens mounting
Blackmagic Camera app	1	Camera app and remote camera control	

Setting Up

Step 1: Build the camera rig

1. Mount the iPhone 17 Pro Max into the Beastgrip Beastcage. Secure the quick-release plate by screwing it into the bottom of the cage, and then lock it into the tripod head.
2. Attach the cage to the fluid head tripod. Verify the tripod is level using the built-in bubble level. Lock the ball head once positioned.
3. Attach the cooling fan via MagSafe connection using the Beastgrip Beastcage for iPhone 17 Pro Max. Route the USB-C cable along the side of the cage toward the ProDock. Verify the fan is running by holding your hand near the vent — you should feel airflow. The fan has a small on/off switch; confirm that it is on.
4. Connect the Blackmagic Camera ProDock to iPhone via USB-C.
5. Run HDMI out from the dock to the AJA HA5-4K converter.
6. Run SDI from the AJA HA5-4K to the MultiDyne fiber converter.
7. Connect Ethernet out of Blackmagic Camera ProDock to the MultiDyne transmission to camera-side position.
8. MultiDyne RX > Truck Router + Frame Sync + VP4 > Ethernet dongle cable in to iPad truck side.

Note: Some USB-C cables have right-angle connectors that can conflict with cage geometry. Plan cable routing before locking the rig down. Zip ties are recommended.

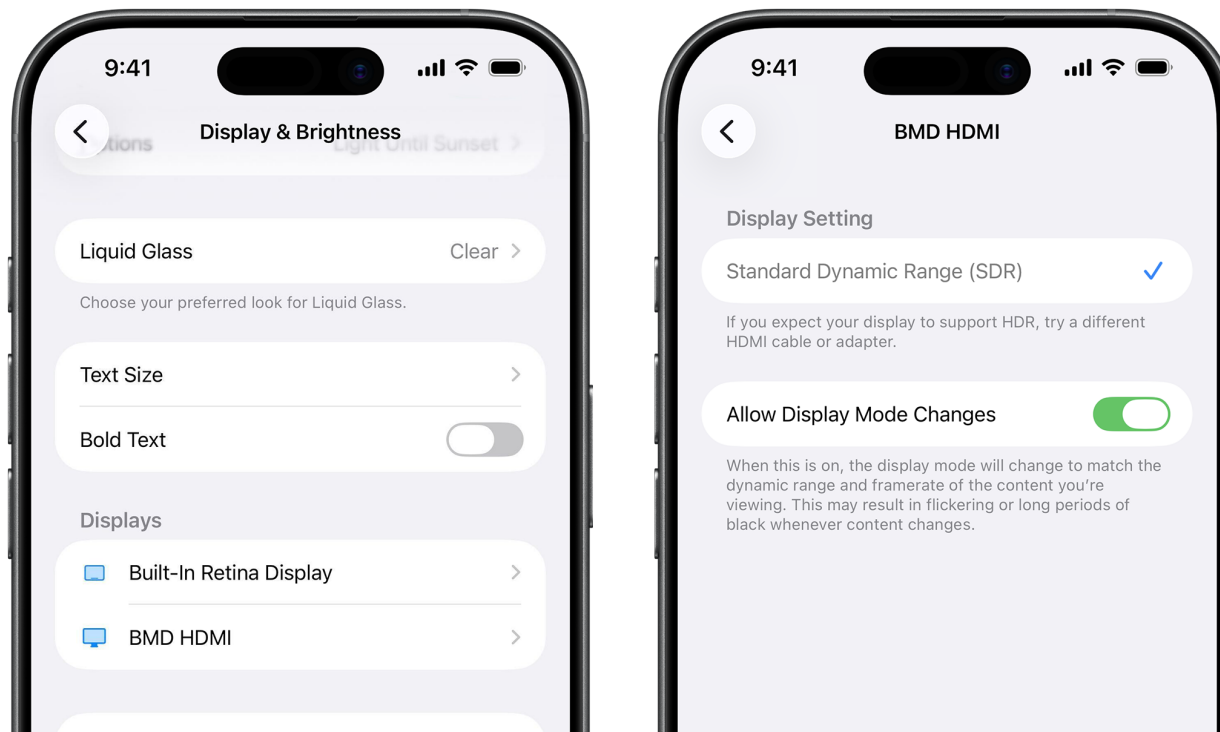
Step 2: Configure iOS

This is a critical step and is required on every iPhone before going live. Skipping it results in iPhone to output at 60.00 fps instead of 59.94, which is incompatible with broadcast infrastructure.

With HDMI connected and the AJA converter powered on:

1. On iPhone, go to Settings → Display.
2. Select the external device — it appears automatically when the HDMI connection is active.
3. Turn on Allow Display Mode Changes.
4. Select Standard Dynamic Range (SDR).

This enables the output at the correct fractional frame rate matching the in-app project setting. For example, a 59.94 project setting outputs a 59.94 signal. Without this step, iPhone packages all output as 60.00 as default.



Required iPhone settings

Setting	Value
Airplane Mode	On
Low Power Mode	Off
Auto-Lock	Never
Brightness	100%
Do Not Disturb	On

Step 3: Configure static IP addresses

DHCP is not reliable in a closed local network setup. DHCP consistently fails to establish stable connections between cameras and the iPad controller. Always use manual static IP addresses. This has been validated through field testing.

Setting a static IP on iPhone

1. Connect iPhone to the Blackmagic Camera ProDock via USB-C.
2. Go to Settings → Ethernet. This option appears only when a wired connection is active.
3. Choose the connected network and switch to Manual.
4. Enter the IP address and subnet mask for that camera.
5. Tap Save.
6. Build the network using either an (unmanaged) Ethernet switch or a wireless router set to a local LAN only (no internet required).
 - A. Option A: Ethernet switch (wired network)
 - Use a Gigabit Ethernet switch (for example, 8 ports), powered via DC, placed in the production area (video village or truck).
 - Ports: Connect your controller iPad via USB-C to Ethernet adapter and each iPhone USB-C to Ethernet adapter.
 - All devices share the same LAN and subnet, for example, 192.168.10.x.

- Since it's unmanaged, no firewall/NAT complications.
 - Pro: lowest latency, highest reliability
 - Con: need USB-C to Ethernet on mobile devices, excess cables

B. Option B: Wireless router (local Wi-Fi network)

- Use a travel router or Wi-Fi access point (battery powered if on location).
- Disable DHCP or reserve static IPs (or assign static IPs on each device).
- Set Wi-Fi SSID to something unique, for example, BMD-MultiCam.
- Ensure the router is Local Only (either no internet or internet not required to reduce external interference).
- Connect controller iPad and all camera iPhones to this Wi-Fi network.
 - The subnet should match your static IP plan (192.168.10.0/24).
 - Optionally disable other network services (guest Wi-Fi, auto updates) for stability.
 - Pro: wireless convenience
 - Con: slightly more latency than wired, potential Wi-Fi interference

7. Repeat for each iPhone and iPad.

Recommended IP scheme

Device	IP Address
iPad (Controller)	10.10.1.50
Camera 1	10.10.1.100
Camera 2	10.10.1.101
Camera 3	10.10.1.102
Camera 4	10.10.1.103

Subnet Mask: 255.255.255.0

Example network snapshot

Device	Role	IP Address	Subnet Mask	Connection	Notes
iPad Controller	Master	192.168.10.10	255.255.255.0	Wi-Fi or USB-C > Ethernet	Runs BMD Cam App in Controller Mode
iPhone Cam 1	High and Wide	192.168.10.11	255.255.255.0	USB-C > Ethernet	Runs BMD Cam App in Camera Mode
iPhone Cam 2	Ball/PlayerTrack	192.168.10.12	255.255.255.0	USB-C > Ethernet	Runs BMD Cam App in Camera Mode
iPhone Cam 3	Tight	192.168.10.13	255.255.255.0	USB-C > Ethernet	Runs BMD Cam App in Camera Mode
iPhone Cam 4	Ronin/Tracking	192.168.10.14	255.255.255.0	USB-C > Ethernet	Runs BMD Cam App in Camera Mode

Step 4: Configure Blackmagic Camera app

Recording settings

Setting	Value
Codec	Apple ProRes 422 HQ
Resolution	HD 1920x1080
Frame rate	59.94
Color space	48 kHz
Bit depth	10-bit

Camera settings

Setting	Value
Shutter measurement	Angle
Shutter angle	180°
Stabilization	Off (tripod use)
Orientation lock	On
Autofocus	On

Monitor settings

Setting	Value
HDMI	Video feed
Display LUT	On (Rec. 709 baked in)
Limit monitoring to HD	On

Blackmagic Camera app controller setup for iPad

Once your network is built and static IPs assigned, complete the following steps.

1. On the controller iPad, open the Blackmagic Camera app.
2. Remote Cameras —> Enable Remote Control is On for each camera iPhone. The camera devices must have their remote control settings enabled.
3. The controller should detect the other iPhones on the same network and same subnet. You may need to enter a password or pair them (each remote camera may require a passphrase).
4. In the multi-view layout on the controller, you'll see the live feeds of each camera. You can select each and adjust focus, zoom, white balance, shutter angle, frame rate, etc.
 - A. For consistency, before going live, test ping each camera's IP from the controller using a network tool, and test control latency in the app.
 - B. If you want all cameras to Start/Stop Recording Simultaneously, use the group-control feature in the app.
 - C. Matching Camera Profiles

To maintain color consistency:

- Set white balance manually.
- Use identical ISO, shutter angle, and tint.
- In the controller app, you can copy camera settings from one unit to all others.

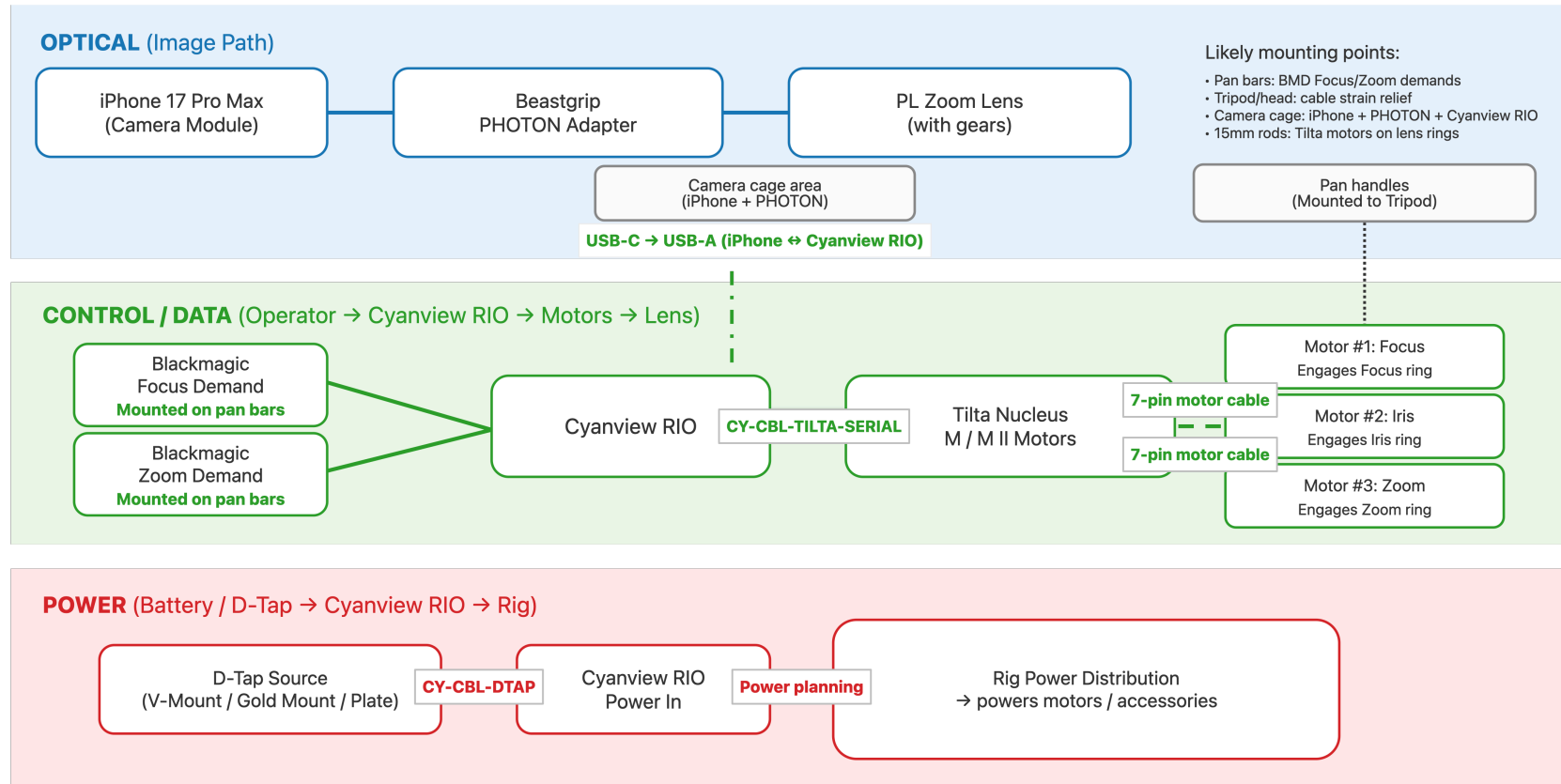
Important: Cameras capture in Apple Log but output with a Rec. 709 Display LUT applied. The broadcast truck receives a proper Rec. 709 signal. Do not disable the Display LUT.

Step 5: Lens selection

Native lens	Recommended use
13mm	Wide coverage, tight spaces
24mm (1x)	Default broadcast lens — use for most positions
120mm	Tripod positions, tight tracking shots

Note: Using digital zoom with the Blackmagic Camera app on native iPhone and iPad lenses produces unacceptable image quality for live broadcast.

Signal Flow: iPhone 17 Pro Max, PL Lens, CyanView RIO, and Tilta Nucleus



Note: Motor power cabling/distro depends on your Nucleus M/M II power plan; diagram shows functional flow with listed parts.

Step 6: Name and label each camera

Each iPhone must have a unique camera name before connecting to the iPad controller.

In the Blackmagic Camera app:

1. Swipe to the Slate panel.
2. Select Naming and assign a descriptive name — for example, Cam1_Wide, Cam2_Dugout, Cam3_Tight, or Cam4_Tracking. This name populates automatically in the iPad remote controller when the camera connects.
3. Apply a physical label sticker to each cage that matches the digital name. This prevents confusion during multi-camera operations.

Step 7: Connect cameras to iPad remote controller

1. Open the Blackmagic Camera app on iPad.
2. Each iPhone appears by the camera name once it's on the same network with the correct static IP.
3. Use the default remote connection password: **0000** (four zeros).
4. Once your network is built and static IPs are assigned:
 1. On the controller iPad, open the Blackmagic Camera app.
 2. Remote Cameras —> Enable Remote Control is On for each camera iPhone. The camera devices must have their remote control settings enabled.
 3. The controller should detect the other iPhones on the same network and same subnet. You may need to enter a password or pair them (each remote camera may require a passphrase).
 4. In the multi-view layout on the controller, you'll see the live feeds of each camera; you can select each and adjust focus, zoom, white balance, shutter angle, frame rate, etc.
 5. For consistency, before going live, test ping each camera's IP from the controller using a network tool, and in the app test control latency.
 6. If you want all cameras to Start/Stop Recording Simultaneously, use the group-control feature in the app.

Tips for multi-cam setup

- Assign Assign IPs logically based on camera roles.
- Set the camera iPhones to Airplane Mode except Wi-Fi/Ethernet to reduce cellular interference.
- On the Wi-Fi router, set the channel manually (5GHz band preferred) and disable “smart” features (auto-channel, band steering) to reduce network drops.
- If using USB-C to Ethernet adapters, power the iPhones with external battery packs or house power to avoid consumption issues.
- Use a network analyzer app to monitor packet loss or latency.
- In Blackmagic Camera app, enable a fixed network interface (Ethernet or Wi-Fi) and prevent automatic network switching.
- Label each device physically and in software (IP, role, lens, etc.) so the controller can quickly select the correct camera.
 - Lock the router/switch so no other devices join the network mid-production.
 - If remote audio monitoring is required (for commentary cameras), ensure the network supports low-latency data transfer; consider wired for those devices.

Color correct on Blackmagic Camera app for iPad

Control	Notes
ISO	Primary exposure control — ride this throughout the event
White Balance/Tint	Primary color shading — collaborate with truck colorist
Lens selection	With between native lenses as needed
Shutter angle	Leave locked at 180°
Record button	In some instances you can record to local camera, for off-set slo-mo record and playback to EVS through wireless connectivity functionality

Note: This is before VP4 post grade pre-broadcast.

Blackmagic Camera app on iPad: linking controls across cameras

To apply a setting change to all cameras simultaneously:

1. Tap Link Controls in the remote controller.
2. Adjust white balance, ISO, or tint — the change applies to all linked cameras.

Use linked controls with caution when cameras face different lighting conditions, such as a dugout camera versus a wide field camera. Their exposure needs will diverge.

Multi-view

1. Double-tap any camera feed to go full screen.
2. Double-tap again to return to quad view.

Step 8: Manage exposure and color

ND filter operation

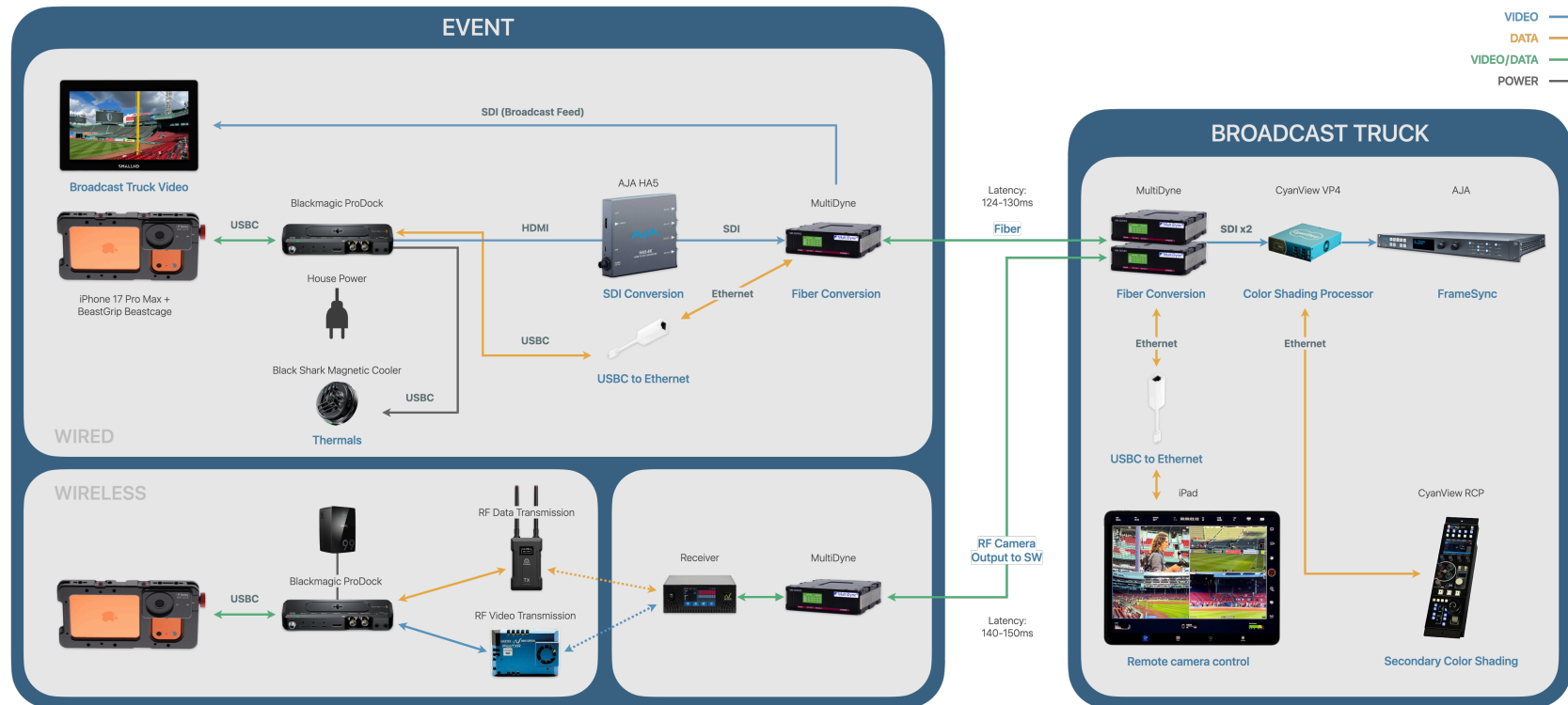
Variable ND filters could be useful for outdoor production, particularly during certain lighting conditions.

- Mount the Variable ND filter mount on the cage lens port. Then, attach the ND filter to the filter mount. Ensure the label on the back faces up.
- During bright conditions, rotate the filter to reduce exposure. Watch the histogram in the remote controller.
- As light drops through sunset, gradually reduce the ND by rotating the filter.
- At nighttime, remove the ND filter entirely and ride ISO for the remainder of the event.

Color matching across cameras

- Set identical manual white balance across all cameras before the show.
- White balance and tint controls in the remote controller are coarse — use them to get in the ballpark, then coordinate with the truck colorist for a final correction pass.
- The truck receives a Rec. 709 signal via the Display LUT. Colorists can shade from there.

Signal Flow Reference



Note: Both MultiDyne units feed into a single portable router at truck side. One iPad controls all cameras through this router. A second iPad can be brought as a backup controller.

- Video Latency - Wireless: 140-150ms
- Video Latency - Wired: 124-130ms

Troubleshooting

Common issues

Symptom	Resolution
Camera not appearing in iPad controller	Verify static IP addresses; reboot Blackmagic app on iPhone and iPad
SDI output at 60.00 fps instead of 59.94	Redo iOS Display Settings — enable Allow Display Changes, select SDR
App spinning or connection stalling	Reboot Blackmagic app; verify Ethernet connection at dock
HDMI signal dropout or instability	Swap HDMI cable and/or check in-line signal converter
Audio not appearing in remote controller	Verify mic connection to dock; select correct input in Blackmagic Audio settings; set to Mono for directional mics
DHCP not establishing connection	Switch all devices to manual static IP addresses

Pre-Show Checklists

iPhone Device Preparation Checklist

- ☐ OS updated and locked (iPhone and iPad)
- ☐ Airplane Mode on (Wi-Fi enabled if required)
- ☐ Auto-Lock disabled
- ☐ Low Power Mode off
- ☐ Notifications disabled
- ☐ Lens and ND filter secured (if being used)
- ☐ SSD mounted and formatted (if being used)
- ☐ Cooling solution installed (if being used)

Blackmagic Camera App Configuration Checklist

- ☐ Resolution and frame rate set (e.g., 1080p 5994)
- ☐ Shutter set (180 or 1/120 for sports)
- ☐ Reference Source set to Internal
- ☐ ISO locked
- ☐ White balance locked (Manual)
- ☐ Focus set to manual
- ☐ Codec selected (ProRes/HEVC)
- ☐ Audio input selected and levels set
- ☐ HDMI embedded audio verified (if being used)

IP Networking and Remote Control Checklist

- ☐ Static IP assigned (if required)
- ☐ Subnet mask confirmed
- ☐ Gateway confirmed (if required)
- ☐ iPad control devices on same subnet
- ☐ Remote iris/WB/ISO control verified
- ☐ CyanView/RCP control tested (if applicable)

Signal Flow Verification Checklist

- ☐ USB-C Pro Dock connected
- ☐ HDMI output verified
- ☐ HDMI to SDI conversion verified (if applicable)
- ☐ Fiber transport verified (if required)
- ☐ Return feed verified (if required)
- ☐ Video present in truck on multi-viewers

Audio and Sync Checklist

- ☐ Mic type confirmed (Lav/Handheld/Shotgun)
- ☐ Wireless frequencies coordinated (if required)
- ☐ Manual gain set
- ☐ Timecode source confirmed
- ☐ Timecode jam verified (if applicable)
- ☐ Lip sync confirmed on program feed (RF 140ms-150ms known delay)

V1 and Truck Integration Checklist

- ☐ Camera control shading verified
- ☐ Waveform match across all cameras
- ☐ Color balance matched across all cameras
- ☐ Tally verified (if being used)
- ☐ Program return verified
- ☐ ISO records confirmed (EVS if applicable)

Framing and Lighting QC Checklist

- ☐ Exposure verified via waveform
- ☐ ND adjusted for lighting conditions (if being used)
- ☐ Focus confirmed at show distance
- ☐ Framing approved by Director
- ☐ Lens calibration confirmed (if motorized)

Technical Rehearsal and Sign-off Checklist

- ☐ Full signal path tested end-to-end
- ☐ All cameras recorded test clips
- ☐ Audio test recorded and verified
- ☐ RF camera latency measured
- ☐ All iPhones updated to the approved iOS build
- ☐ Blackmagic Camera app updated to version 2.3.1 or later
- ☐ Broadcast preset loaded on all iPhones
- ☐ Camera names assigned in app and labeled physically on cage
- ☐ Static IPs configured on all iPhones and iPads
- ☐ iOS Display Settings configured: Allow Display Changes On, SDR selected
- ☐ Airplane Mode On, Do Not Disturb On, Auto-Lock set to Never on all devices
- ☐ Cooling fans attached and confirmed running
- ☐ ND filters mounted and tested
- ☐ HDMI output verified at 59.94 on downstream scopes
- ☐ All cameras visible in iPad remote controller
- ☐ Spare HDMI cables packed