ScreenBeam 3100
OPS Wireless Display Module

Quick Start Guide

This Quick Start Guide provides the instructions on how to install the ScreenBeam 3100 OPS Wireless Display Module, connect client devices, and setup for deployment.

Before Beginning Deployment

Before deploying Actiontec ScreenBeam products, check for the latest firmware,release documentation and tech tips.

- For ScreenBeam receiver's deployment guide, firmware upgrades, and releasenotes, go to: https://support.screenbeam.com/1100
- For Miracast™ or native macOS/iOS wireless display connection tutorial, go to:https://www.screenbeam.com/setup
- For ScreenBeam Central Management System (CMS) software, go to:https://support.screenbeam.com/cms
- For Open Source information, go to: https://opensource.actiontec.com

Documentation

For FAQs, troubleshooting tipsand support, visit:
https://support.screenbeam.com

Need Help?

To open a ticket for support, visit:
https://support.screenbeam.com/ticket

Package Contents

- ScreenBeam 3100 receiver
- Quick Start Guide (this document)
- Regulatory documents

Introduction

The ScreenBeam 3100 allows presenters with Windows 10,macOS, iOS, or Android device to wirelessly display withoutrequiring any apps. ScreenBeam 3100 offers a variety ofsecured network modes to support connection from theinternal users on different subnets and external guest users.

Overview of Network Modes

ScreenBeam 3100 supports local Wi-Fi, Wi-Fi Miracast, andwireless display over existing infrastructure network. Two or moremodes can operate concurrently to support various scenarioswhere both internal and guest users could simply connect andproject.

Local Wi-Fi

The ScreenBeam Wi-Fi mode provides the simplest formof network for client devices to connect and project. In thismode, user needs to connect the client device Wi-Fi to theScreenBeam Wi-Fi and then select the receiver to mirror. Thismode is ideal for guest client devices that need wirelessdisplay and or Internet access. Internet is available if theScreenBeam receiver is connected to the existing network,wired or wireless if bridge mode is enabled. Mobile device withcellular service can access the Internet and wireless display ifbridge mode is disabled.

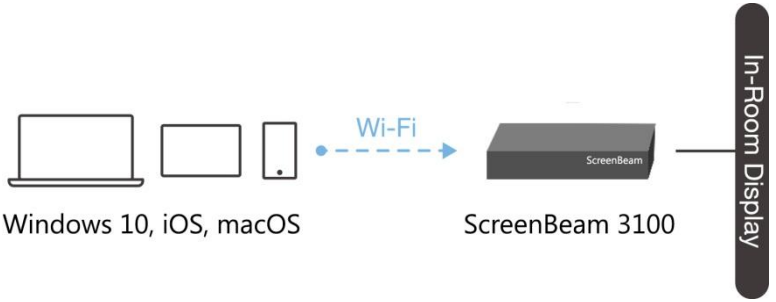


Figure 1 *Client device wireless display by connecting toScreenBeam's local Wi-Fi*

Note: ScreenBeam Wi-Fi is fully secured and manageablevia ScreenBeam CMS with options to tune the wirelesspower transmission, channel and encryption type.

Wi-Fi Miracast

The Wi-Fi Miracast mode allows compatible Wi-Fi Miracastdevices to connect directly to ScreenBeam, even whenconnected to an infrastructure wireless network. Miracast iscommonly available on Windows 10/8.1 and Android 4.4 (andlater) devices since 2015. Users can enjoy wireless display andInternet access if the client device is already connected to Wi-Fi.

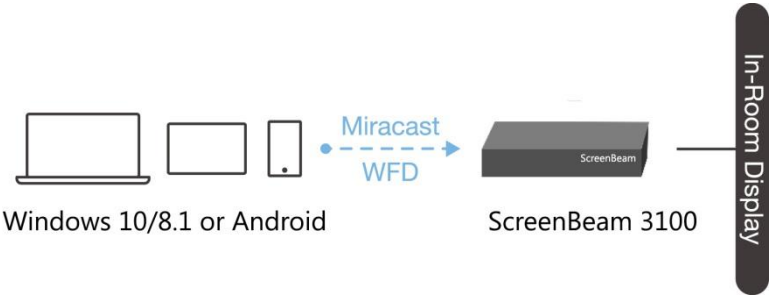


Figure 2 *Miracast client device wireless display byconnecting to ScreenBeam's Wi-Fi Miracast network*

Wireless Display over existing LAN

ScreenBeam 3100 can be connected to the existing wireless orwired network and supports wireless display for client deviceson either network. This is a common setup to support clientdevices that needs access to network resources. Additionalport and network configurations may be required for this modeto work seamlessly.

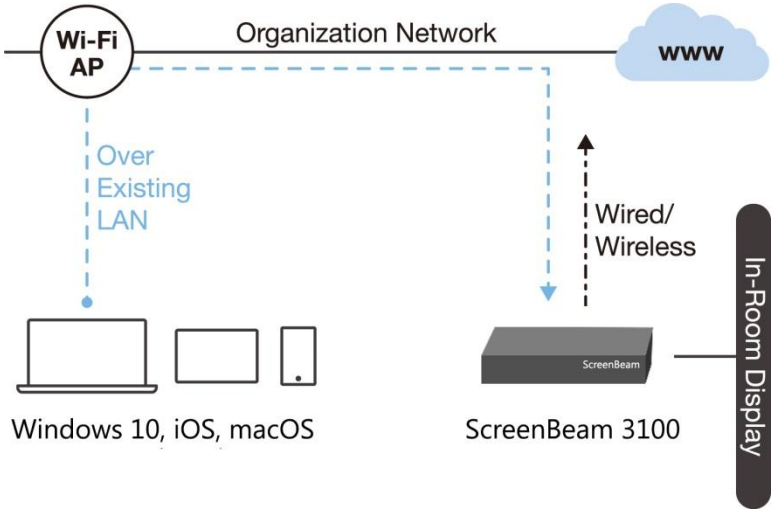


Figure 3 *Client device wireless display over existinginfrastructure network*

ScreenBeam 3100 can be connected to two different networksconcurrently. This dual-network feature allows the flexibility ofsupporting wireless display for either staff (on internal network)or visitors (on guest network). Refer to the deployment guidefor more details.

Minimum Requirements

System Requirements

Client device from 2015 or newer with one of the followingoperating systems:

- Windows 10 build 1709 (and later)
- macOS X 10.10 (and later)
- iOS 11 (and later)
- Android 4.4 (and later) with Miracast

Network Requirements

For wireless display over the existing wireless network or LAN:

- Ethernet: 100BASE-T 10/100 connection(1 Gbps is recommended)
- Wireless: 802.11ac (5GHz is strongly recommended)
- Multicast DNS (mDNS) support is required for iOSand macOS native screen mirroring to auto-discoverScreenBeam
- Required ports
  - 5353 (UDP) for Multicast DNS (mDNS) discovery
  - 7100 (TCP and UDP) for macOS, iOS andWindows 10 mirroring
  - 7250 (TCP) for Miracast over LAN data stream
  - 18000-18009 (TCP) for macOS and iOS AV data

Note: Additional network configuration is not required forWi-Fi Miracast enabled device to connect. Verify GroupPolicy and firewall settings to allow Wi-Fi Direct groups orhosted networks.

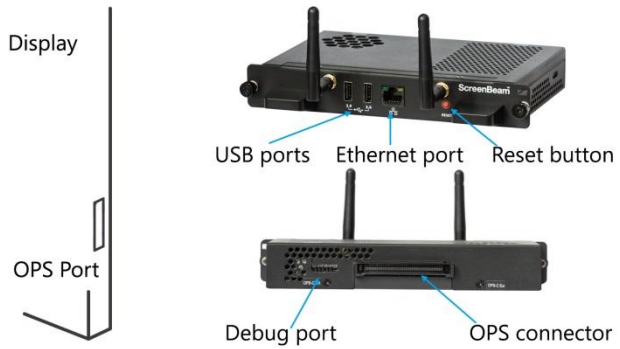
Setup Requirements

- ScreenBeam 3100 receiver
- Display with OPS configuration
- (Optional) Touchscreen with OPS configuration
- An Ethernet network connection with DHCP IP or aWi-Fi router

  Note: This is used for wireless display over LAN andmanagement.
- ScreenBeam wireless display app

  Note: Not required for Windows 10/8.1, macOS, and iOSwith native screen mirroring support.

A. Setting up ScreenBeam 3100 Wireless Display Module



ScreenBeam 3100 OPS Wireless Display Module uses standard OPS configuration. It can be installed on to a display with OPS port.

1. Align ScreenBeam 3100 module with the OPS slot on your display, slide the module into the slot and install the module in position. Fasten the screws.

   Note: The display provides power supply, HDMI, USB connection, and Ethernet connection to theScreenBeam 3100 module through the OPS connector.
2. **Optional**: Connect one end of the Ethernet cable to themodule's Ethernet port and connect the other end to thenetwork switch with DHCP IP. (Ethernet cable is not included).

   Note: Refer to section B for more information on setting up a network connection.
3. Turn on the display and switch to the corresponding input from the wireless display module. Refer to the display's user manual on how to select the input from the OPS module.
4. Wait for the **Ready to Connect** screen to appear on the display.

B. Set up Network Connection

ScreenBeam requires network connection for variouspurposes, such as wireless display over LAN support andmanagement of the receiver. ScreenBeam can be connected tothe network via wired or Wi-Fi connection.

Wired Connection

If ScreenBeam is connected to a DHCP-enabled network, the**Ready to Connect** screen will show the IP address assignedto the ScreenBeam.

Wireless Connection or Static IP Address

This requires additional steps to configure the receiver with theproper network credentials. Refer to **Section D** for instructionson how to setup the ScreenBeam receiver.

Using a wired connection with DHCP IP is recommended forinitial testing.

C. Connect Client Device

This section provides the instructions on how to connect toScreenBeam using the native screen mirroring from the mostcommon operating systems.

Refer to www.screenbeam.com/setup for details andinstructions for all other operating systems.

Note: The web page will display the instructions basedon the client-device OS. Use the links at the bottom of theweb page to select OS-specific instructions.

Connect Using Local Wi-Fi

1. Connect the client device's Wi-Fi to the wireless network(AP SSID) as shown on the TV display. Windows 10/8.1or Android with Miracast can skip to ***Connect Using Wi-FiMiracast*** section.
2. Enter the password for the wireless network.**screenbeam** is the default password.
3. Select the ScreenBeam receiver name as shown on theTV display.
   - For Windows 10
     Select **Connect** from the Action Center by swiping fromright or simultaneously pressing the **Windows** key and **K**.
   - For iOS or macOS
     Connect withAirPlay from the menu bar or control center.
4. Enter in the PIN if required. If the PIN code is not displayed,try the hidden PIN **1234**.
5. Select duplicate or extended screen mode if prompted.
6. If the display has touch functionality, Windows 10 devicescan take advantage of the touch and inking feature byselecting **Allow touch…** (Refer to **Section F** for moredetails.)

Note: To disconnect, return to the screen mirroringmenu and select mirroring off.

Connect Using Wi-Fi Miracast

1. Select the ScreenBeam receiver name as shown on theTV display.
   - For Windows 10
     Select Connect from the Action Center by swiping fromright or simultaneously pressing the **Windows** key and **K**.
   - For Android
     Select the **Screen Mirroring** option from the quickaccess menu and follow the connection instructions.
2. Enter in the PIN if required. If the PIN code is not displayed,try the hidden PIN **1234**.
3. Select duplicate or extended screen mode if prompted.
4. If the display has touch functionality, Windows 10 devicescan take advantage of the touch and inking feature byselecting **Allow touch…** (Refer to **section F** for moredetails.)

   Note: Some Android devices do not support PIN and willfail to connect. Refer to section D below for instructionson how to configure ScreenBeam and disable PINenforcement.

Connect Using the Existing Wireless Network or LAN

1. Connect the ScreenBeam receiver to a known networkwhere your client device can communicate over Wi-Fi.
2. Verify the receiver obtained an IP address (shown on the**Ready to Connect** screen).
3. Connect the client device to the same network asScreenBeam receiver
4. Select the ScreenBeam receiver name as shown on theTV display.
   - For Windows 10
     Select **Connect** from the Action Center by swiping fromright or simultaneously pressing the **Windows** key and **K**.
   - For iOS or macOS
     Connect withAirPlay from the menu bar or control center.
5. Enter in the PIN if required. If the PIN code is not displayed,try the hidden PIN **1234**.
6. Select duplicate or extended screen mode if prompted.
7. If the display has touch functionality, Windows 10 devicescan take advantage of the touch and inking feature byselecting **Allow touch…** (Refer to **Section F** for moredetails.)

Congratulations!

The display is now enabled for wireless screen mirroring.

D. Configure ScreenBeam Receiver

ScreenBeam 3100 can be configured by using theScreenBeam CMS software or accessing the ScreenBeam'slocal management interface (LMI).

Using ScreenBeam CMS Software

ScreenBeam Central Management System (CMS) is a highlyrecommended complimentary tool for multi-unit deployment,configuration and administration.

- To obtain CMS software and the CMS User Guide, go to:https://support.screenbeam.com/cms.
- Refer to the CMS User Guide for setup instructions.

Note: Access to the LMI is prohibited by default ifScreenBeam 3100 is connected to ScreenBeam CMSfor management. This option can be changed in thereceiver's settings.

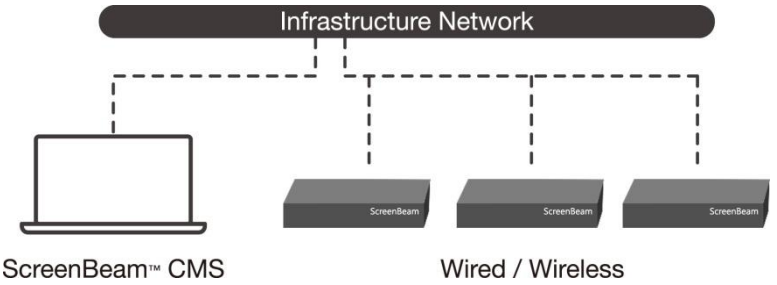


Figure 5 Receivers managed by ScreenBeam CMS

Using Local Management on ScreenBeam

The Local Management Interface can configure and update asingle ScreenBeam. There are three methods to access the LMI:

Method 1: ScreenBeam Local Wi-Fi Network

1. Connect the client device's Wi-Fi to the wireless network(AP SSID) as shown on the TV display.
2. Enter the password for the wireless network.**screenbeam** is the default password.
3. The **Ready to Connect** screen on the display will show theassigned IP address of the ScreenBeam.
4. Enter the assigned IP address into the web browser of a PCor Apple device.
   - If the receiver is not connected to an existing wirelessnetwork or LAN, its IP address is 192.168.26.1.
   - If the receiver is connected a network, the IP address canbe identified on the **Ready to Connect** screen.
5. The browser may give an error stating "The connectionor site is not secure or private." Manually accept theconnection as follows:

   Chrome browser: click **Advanced**, then click **Proceed**.

   Edge/IE browser: click **Details**, then**Go** on to thewebpage (not recommended).

   Firefox browser: click **Advanced**, then click **AddException**, then click **Confirm Security Exception**.
6. When the ScreenBeam management page appears, enterthe Username **Administrator** and Password **Actiontec** (bothcase-sensitive).

Method 2: Network Connection via DHCP

1. Using a shielded RJ-45-terminated Cat5e or better Ethernetcable, connect the ScreenBeam Ethernet port to a DHCPenablednetwork.
2. The **Ready to Connect** screen on the display will show theassigned IP address of the ScreenBeam. Enter this addressinto the web browser of a PC or Apple device on the samenetwork as the ScreenBeam.
3. Follow the directions from Method 1 from Step 5 on.

Method 3: Wireless P2P Direct Connection

1. Using a Windows 10/8.1 device, connect the device to theScreenBeam per section **B** above.
2. Once connected, use a web browser and enterhttp://192.168.16.1 to access the LMI.
3. Follow the directions from Method 1 from Step 5 on.

E. Customize ScreenBeam Settings

Under the Device Configuration Page

Assign new Device Name

1. Select the **Device Name** text box, then enter a new name(example: Conference TV).
2. Select **Apply/Save** button to save any changes.

Note: Each receiver should have a unique name; thismakes it easier for users to identify and connect to thecorrect display. Supported naming characters areA-Z, a-z, 0-9, -, _.

Change the Administrator's Password

1. Select the Administrator Password text box and enterthe new password.
2. Select **Apply/Save** button to save any changes.

Under the Features Page

Configure Force PIN Pairing Option

By default, the Force PIN Pairing option is Enabled and the PINcode is generated randomly. A unique PIN is will be generatedeach time a new user/device attempts to connect. To changethe PIN pairing type or PIN code:

1. Select either **ON** to force PIN or **OFF** to not force PIN uponconnection.
2. If Force PIN Pairing is **ON**, select either **Each connection**or **First connection** only.
3. Select **Random** or **Static** for PIN code generation.
4. If **Static**, then enter PIN of choice. Keep note of the newPIN for user distribution.

Note: For eight-digit PIN option, only the first seven digitsof the PIN can be set in configuration; the eighth digitwill be automatically chosen by the ScreenBeam andappended to the first seven.

5. Select Apply/Save button to save any changes.

Configure HDMI/VGA PortPower Management

By default, ScreenBeam is designed to display the Ready toConnect screen continuously. To extend display life and/orreduce power consumption:

1. Select either **Screen Saver** or **Display Off**.
2. Enter a desired time for setting to take effect.
3. **Optional**: Select a Wake up mode.
4. Select **Apply/Save** button to save any changes.

F. Using Interactive Touch Display

ScreenBeam 3100 supports wireless inking and touch withWindows 10 Miracast for collaboration using a touchscreendisplay. Users can project their preferred Windows 10 applicationand take notes on the touchscreen; the notes appear directly onthe client device.

System Requirements

OS: Windows 10 build version 1709 (or later)

CPU: 5th Gen Intel Core i-Series 5xxx or AMD equivalent(or better)

RAM: 4 GB or more

Setup Requirements

- Interactive touch display with OPS configuration

Supported Features

- Support USB HID display, projector, or whiteboard
- Up to 20-point touch
- Up to four simultaneous passive pens
- Up to two simultaneous active pens

Supported features may require compatible touchscreen andor application. Works best with InGlass™ Technology enableddisplay. Refer to the online compatibility list at:
https://support.screenbeam.com/touch/compatibility

Setup and Instructions

1. AUSB connection is present when ScreenBeam 3100 module is installed onto the display.
2. Connect a Windows 10 device to ScreenBeam 3100 (seeinstructions in **Section C**).
3. Start using the display by touching the screen. Launch anapp and draw using finger or pen.

G. Deploying ScreenBeam Receiver

Please read the deployment guide for best practices and tipsbefore placing the ScreenBeam 3100 to the site for users.

1. Uninstall ScreenBeam 3100 module from the test display.
2. Move the module to its permanent location.
   Note: Access to a wired or wireless LAN connection isrequired.
3. Install the ScreenBeam 3100 module to the display with OPS configuration
4. Turn on the display and switch to the corresponding input from the wireless display module. Refer to the display's user manual on how to select the input from the OPS module.
5. Verify the **Readyto Connect** screen appears.
6. Verify the ScreenBeam 3100 obtains a valid IP address.

Note: By default, ScreenBeam shows all of the receiver'sinformation on screen for ease of troubleshooting. Theinformation can be configured to be hidden from themanagement interface or via CMS.

H. Expectations and Known Issues

- Wi-Fi Internet is limited when connecting to ScreenBeamlocal Wi-Fi unless ScreenBeam is connected to the networkand the local Wi-Fi is set to NAT or Bridge.
- If ScreenBeam is connected to the existing network, someexisting access points and or controllers (i.e. Meraki orCisco) may flag it as a rogue AP and restrict the client fromconnecting. Consult with the network administrator to flagScreenBeam as a friendly access point.
- Windows 10 build 1803 (and earlier) do not support wirelessdisplay PIN on Miracast over LAN. The connection will fallback to establishing the Miracast over Wi-Fi Direct path.

Support Information

For FAQs, troubleshooting tips and support, visit:
https://support.screenbeam.com
To open a ticket for support, visit:
https://support.screenbeam.com/ticket
Website: www.screenbeam.com

This product is intended to be supplied by a power supply rated as DC IN +12V ~ +19V @ 3A Max.

General Regulatory and Compliance Notices

Important Safety Instructions

If applicable, when using telephone equipment, basic safety precautions should always be followed to reduce the risk of fire, electrical shock, and personal injury, including the following:

- Do not use this product near water – for example, near a bathtub, kitchen sink, laundry tub, or swimming pool, or in a wet basement;
- Avoid using a telephone (other than a cordless type) during an electrical storm, as there may be a remote risk of electrical shock due to lightning;
- Do not use the telephone to report a gas leak in the vicinity of the leak;
- Use only the power cord and batteries indicated in this manual;
- Do not dispose of batteries in fire, as they may explode – check with local codes for possible special disposal instructions.

Telephone Line Cord Caution

To reduce the risk of fire, use only No. 26 AWG or larger (e.g., 24 AWG) UL Listed or CSA Certified Telecommunication Line Cord.

Coaxial Cable

If applicable, the coaxial cable screen shield needs to be connected to the Earth at the building entrance per ANSI/NFPA 70, the National Electrical Code (NEC), in particular Section 820.93, "Grounding of Outer Conductive Shield of a Coaxial Cable," or in accordance with local regulation.

For Audio/Video Apparatus

This reminder is provided to call the CATV system installer's attention to Section 820.93 of the National Electric Code (NEC), which provides guidelines for proper grounding and, in particular, specifies that the coaxial cable shield shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

Please heed all warnings; read, keep and follow all instructions. Do not use this apparatus near water and only clean with dry cloth.

Do not block any ventilation openings. Install in accordance with the manufacturer's instructions. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus including amplifiers that produce heat.

FCC Class B Equipment

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try and correct the interference by implementing one or more of the following measures:

- Reorient or relocate the receiving antenna;
- Increase the separation between the equipment and receiver;
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected;
- Consult the dealer or an experience radio or television technician for help.

Modifications

The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by Actiontec Electronics, Inc, may void the user's authority to operate the equipment.

Declaration of conformity for products marked with the FCC logo – United States only.

This devices complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1.This device may not cause harmful interference;

2.This device must accept any interference received, including interference that may cause undesired operation of the device.

Important Note

If applicable, this equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 30 cm between the radiator and your body.

For product available in the USA market, only channel 1~11 can be operated. Selection of other channels is not possible.

The device could automatically discontinue transmission in case of absence of information to transmit, or operational failure. Note that this is not intended to prohibit transmission of control or signaling information or the use of repetitive codes where required by the technology.

The device for the band 5150-5250 MHz is only for indoor usage to reduce potential for harmful interference to co-channel mobile satellite systems.

The maximum antenna gain permitted for devices in the band 5725-5825 MHz shall comply with the e.i.r.p. limits specified for point-to-point and non point-to-point operation as appropriate.

The transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

For questions regarding your product or the FCC declaration, contact:

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