ScreenBeam®

ScreenBeam 960 Wireless Display Receiver

Firmware 9.15.44.0

User Manual

V0.08

For Catalog # SBWD960A

Table of Contents

Part I Getting Started

Thank you for your purchase of ScreenBeam 960 Wireless Display Receiver (hereinafter refer to as “ScreenBeam 960”).
ScreenBeam 960 wireless display receiver enables native screen mirroring from your Windows, Android, and Apple devices - without apps or wires. ScreenBeam 960 lets you wirelessly stream what’s on your Wi-Fi Certified Miracast™ compatible device to your HDTV, including movies, videos, photos, music, and more. The receiver frees your eyes from a tiny screen.
The receiver boasts some great features, including fast connect, quick switch, enhanced security and IT manageability, smooth video playback, 1080p full HD support, ultra-low delay, Windows 8.1/10 optimization, versatile compatibility, low power consumption, and more. ScreenBeam 960 also supports legacy windows devices (such as Windows 7) and Mac OSX devices.

For optimal wireless display experience, we strongly recommend you update your receiver to the latest firmware. Check firmware update now on https://support.screenbeam.com.

1.1 Contents in the Box

Contents in the Receiver’s package are listed below:

- ScreenBeam 960 receiver (1)
- HDMI® Cable (1)
- AC Power Adapter (1)
- Product documentation

1.2 Meeting ScreenBeam 960

This manual is applicable to the following catalog #s:

- SBWD960A

1.2.1 ScreenBeam 960

- **ETHERNET**, for connecting to ScreenBeam Central Management System via Ethernet for receiver management
- **HDMI OUT**, for connecting to HDTV/projector with an HDMI port for video and audio output
- **POWER**, for power supply
- **RESET**, for resetting the receiver to default settings
- **LED Indicator**, indicating power supply status
- **AUDIO OUT**, for outputting audio to speaker (available for both HDMI out and VGA out)
- **USB**, for provisioning CMS connection data, firmware update, and USB over network control (UIBC)
- **VGA-OUT**, for connecting to an HDTV/projector with a VGA port for video output
- **VGA-IN**, VGA input for VGA bypass

1.3 System Requirements

System requirements for the receiver are shown below:

1.3.1 System Requirements

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

- Windows 10 build 1709 (and later)
- macOS X 10.10 (and later)
- iOS 9 (and later)
- Android 4.4 (and later) with Miracast

1.3.2 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 (5 GHz is strongly recommended)
- Multicast DNS (mDNS) support is required for auto-discovery of ScreenBeam
- Required ports
    - 5353 (UDP) for Multicast DNS (mDNS) discovery
    - 7100 (TCP) for macOS, iOS and Windows 10 mirroring
    - 7250 (TCP) for Miracast over LAN data stream
    - 47000 (TCP) for Airtunes in AirPlay
    - 18000-18009 (TCP) for macOS and iOS AV data

Note: Additional network configuration is not required for Wi-Fi Miracast enabled device to connect. Verify Group Policy and firewall settings allow Wi-Fi Direct groups or hosted networks.

1.3.3 Setup Requirements

- ScreenBeam 960 receiver
- Display with an available HDMI input or VGA input
- (Optional) Touchscreen with USB touch cable
- An Ethernet network connection with DHCP IP or a Wi-Fi router
  Note: This is used for wireless display over LAN and management.

1.3.4 Legacy Device Support

The receiver is also compatible with the following devices:

- Non-Miracast ready laptops and PCs (Windows 7) with ScreenBeam USB Transmitter 2 (SBT200DI) or ScreenBeam USB Transmitter (SBT100U)
- Windows 7 devices with ScreenBeam SBCast software
- Apple Mac OSX (Yosemite, El Capitan, Sierra, High Sierra) devices with ScreenBeam SBCast app

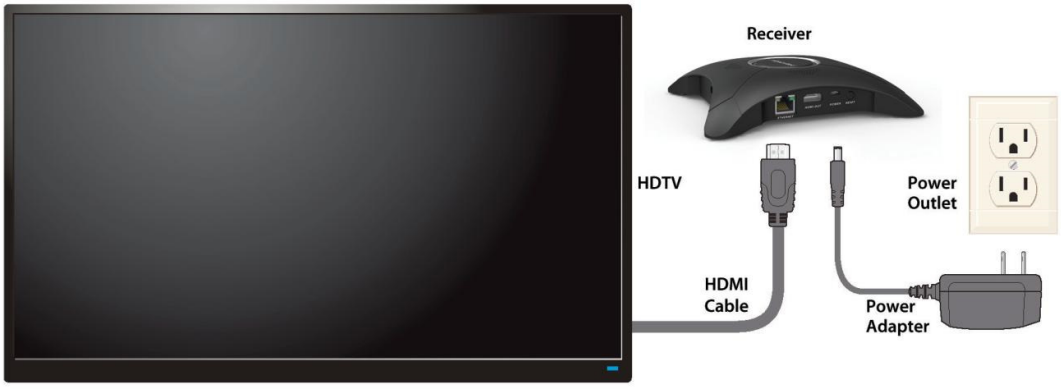
Part II Installing the Receiver

This chapter explains how to connect the receiver to a display such as an HDTV or projector. Make sure you have all the contents from the receiver's package available before starting.

2.1 Connecting the Receiver to an HDTV

It is quite easy and fast to set up the receiver. You can complete the setup by your own.
To connect the Receiver to an HDTV:

1. Get the **Receiver**, **AC power adapter**, and **HDMI cable** from the receiver's package.
2. Plug one end of the HDMI cable into the HDMI port ("**HDMI-OUT**") on the receiver, and the other end into an available HDMI port on the HDTV.
3. (Optional) If the display has USB HID touch capability, insert the HID USB connector into a USB port on the ScreenBeam receiver. (USB cable is not included).
4. (Optional) Connect one end of the Ethernet cable to the receiver's Ethernet port and connect the other end to the network switch with DHCP IP. (Ethernet cable is not included).
   Note: Refer to Section 2.2 for more information on setting up a network connection.
5. Plug the connector of the power cord to the receiver's power input port labeled "**POWER**", and plug the power adapter to a power outlet.
   When the above steps are complete, the hardware should be connected as shown in the figure below:



Note: Power adapter may vary in different region.

6. Turn on the HDTV and set it to display the input from the correct HDMI port (the one you have plugged into in Step 2).

7. Verify that the "**Wireless Display Ready to Connect**" screen appears on the HDTV.

The receiver is connected to the HDTV, and it is ready for use.

Note: Connections to other display devices are similar.

8. (Optional) VGA bypass setup is shown below. Refer to Section **4.1 VGA Use Case** for details about how the input and outputs work.

2.2 Connecting the Receiver to a Network

ScreenBeam 960 receiver supports both wired and wireless connections. You can deploy ScreenBeam 960 receivers based on your network requirements.

Note: The setups in this section are optional.

2.2.1 Wired Connection

ScreenBeam 960 receiver provides a built-in Ethernet port, allowing direct connection to an Ethernet network.

To connect the receiver to a network, follow this procedure:

1. Go to the receiver's Local Management Interface, and set IP address assignment and DNS assignment to auto in the **Remote Management** tab page.

   Note:

   - If you want to set the receiver's IP address or DNS server to static, consult your network administrator.
   - Refer to Section **5.2 Using Local Management on ScreenBeam** for detail on how to log into the receiver's Local Management Interface.
   - Refer to Section **5.3.7.2 Setting up the Receiver's IP Address** for detail on how to set up the receiver's IP address.
   - Refer to Section **5.3.7.3 Specifying a DNS Server for the Receiver** for detail on how to set up the receiver's DNS server.
2. Connect your ScreenBeam receiver to your network with a quality Ethernet cable.
3. The receiver will be assigned an IP address after a few seconds, if a DHCP server is available in your network.

2.2.2 Wireless Connection

ScreenBeam 960 receiver provides a built-in WLAN Adapter, which allows the receiver to wirelessly connect to your network. It is required to set up the wireless connection parameters before starting the connection.

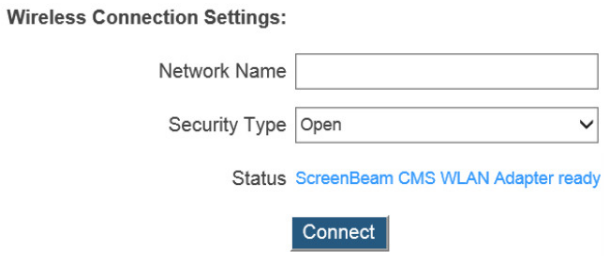
To connect the receiver to a wireless network, follow this procedure:

1. Go to the receiver's Local Management Interface (LMI), and set IP address assignment and DNS assignment to auto in the **Remote Management** tab page.

   Note:

   - If you want to set the receiver's IP address or DNS server to static, consult your network administrator.
   - Refer to Section **5.2 Using Local Management on ScreenBeam** for detail on how to log into the receiver's Local Management Interface.
   - Refer to Section **5.3.7.2 Setting up the Receiver's IP Address** for detail on how to set up the receiver's IP address.
   - Refer to Section **5.3.7.3 Specifying a DNS Server for the Receiver** for detail on how to set up the receiver's DNS server.

2. Go to LMI > **Remote Management** > **Wireless Connection Settings**, and configure the parameters according to specific requirements.



- **Network Name**: The SSID of the wireless router (AP).
- **Security Type**: Select a security type, the one you have selected on your wireless router. Available security types are **Open**, **Shared**, **WPA-PSK[TKIP]**, **WPA2-PSK[AES]**, **WPA-PSK[TKIP]+WPA2-PSK[AES]**, **PEAP/MSCHAPV2**, and **EAP-TLS**.
- **Status**: It displays the connection states.

When **Shared**, **WPA-PSK[TKIP]**, **WPA2-PSK[AES]**, or **WPA-PSK[TKIP]+WPA2-PSK[AES]** is selected,

- **User Name**: Not used.
- **Password**: The pre-shared password for the wireless SSID.

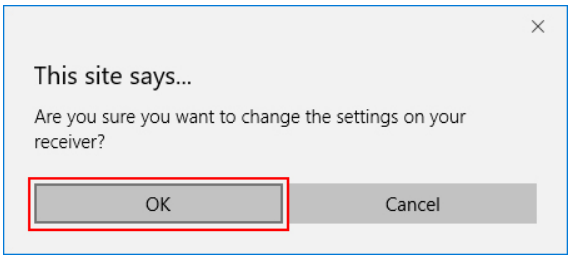
When **PEAP/MSCHAPV2** is selected,

- **User Name**: This is for authentication through a RADIUS server. It is RADIUS account User Name.
- **Password**: It is RADIUS account password.

When **EAP-TLS** is selected, the following items are available:

- **User Name**: It is the User Principal Name or RADIUS Identity (if necessary).
  Note: The User Name supports these characters: a-z, A-Z, 0-9, @, ., and _.
- **Password**: It is the password of the Private Key.
- **System Date & Time**: It is used to set date and time for the receiver. Users should set the date and time according to the validity period of the certificates.
- **CA Certificate**: It is the root certificate. Click the **Browse** button to browse and add the certificate.
- **User Certificate**: It is the user certificate. Click the **Browse** button to browse and add the certificate.
- **Private Key**: It is the user's private key. Click the **Browse** button to browse and add the certificate.
- **Validity Period**: It displays the effective period of the certificates.
  Note:
  - Currently, only certificates in the ".pem" format are supported, and the certificates must be generated using the "DER encoded binary X.509" method.
  - The length of the certificate file name must not exceed 64 bytes, and the file size must be less than 100 KB.
  - All the three certificates are required for authentication.
  - User should select the right certificate file for each type of certificate.

3. Click the **Apply** button, and then click **OK** on the pop-up message box to save the network connection parameters. The WLAN adapter will connect to the wireless router (AP) in a few seconds when the receiver is idle or when it is not connected to an Ethernet network.



Note: The CMS WLAN Adapter may take some time to connect to your network, depending on your network environment.

Part III Connecting Client Device

This section provides the instructions on how to connect to ScreenBeam using the native screen mirroring from the most common operating systems and using ScreenBeam SBCast app.

Refer to www.screenbeam.com/setup for details and instructions for common operating systems.

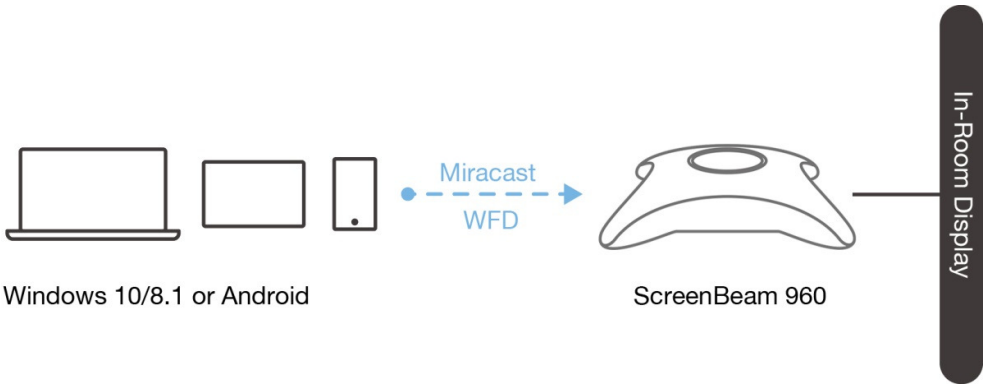
Note: The web page will display instructions based on the client-device OS. Use the links at the bottom of the web page to select OS-specific instructions.

3.1 Overview of Wireless Display Network Modes

The ScreenBeam 960 allows presenters with Windows 10, macOS, iOS, or Android device to wirelessly display without requiring any apps. ScreenBeam 960 supports Wi-Fi Miracast and wireless display over existing infrastructure network.

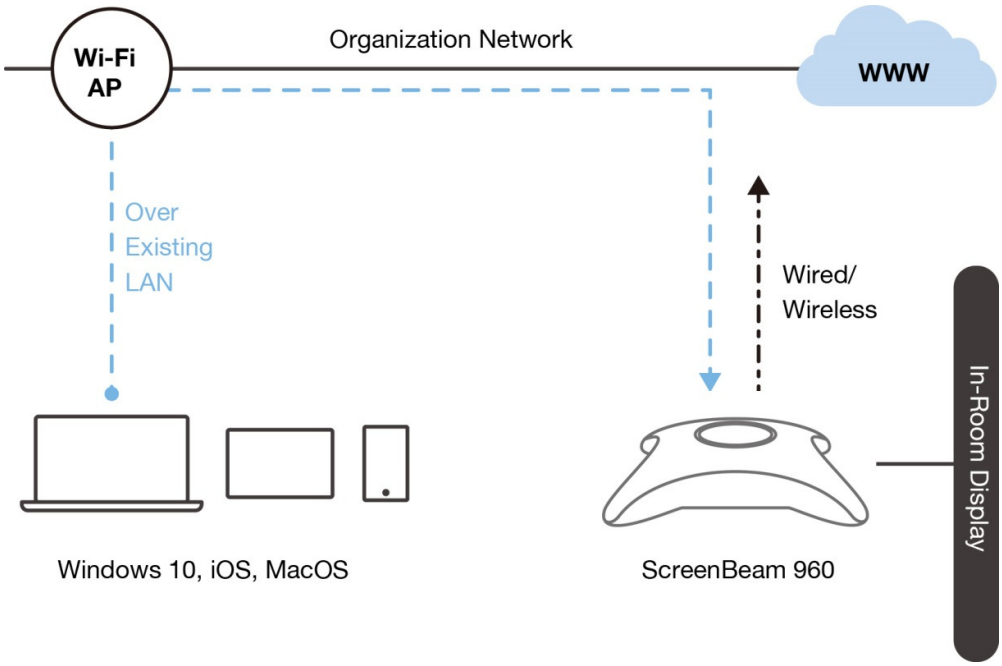
3.1.1 Wi-Fi Miracast

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



3.1.2 Wireless Display over existing LAN

ScreenBeam 960 can be connected to the existing wireless or wired network and supports wireless display for client devices on either network. This is a common setup to support client devices that need access to network resources. Additional port and network configurations may be required for this mode to work seamlessly.



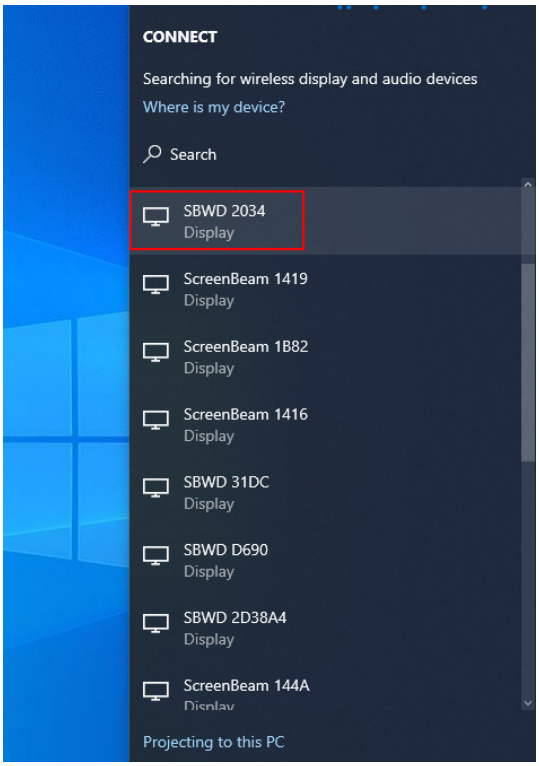
3.2 Connect using Wi-Fi Miracast

This section explains how to connect a client device to ScreenBeam 960 using Wi-Fi Miracast.

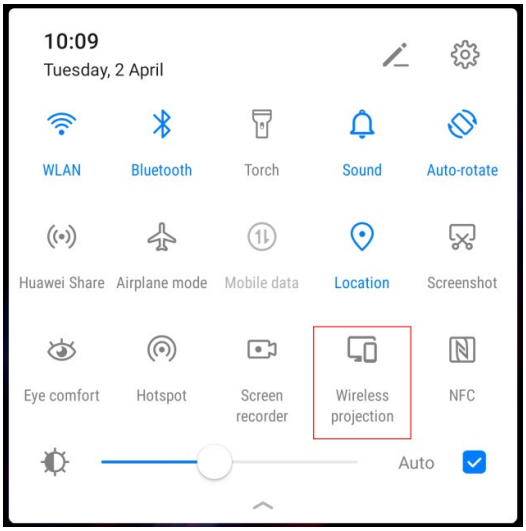
1. Select the ScreenBeam receiver name as shown on the TV display.

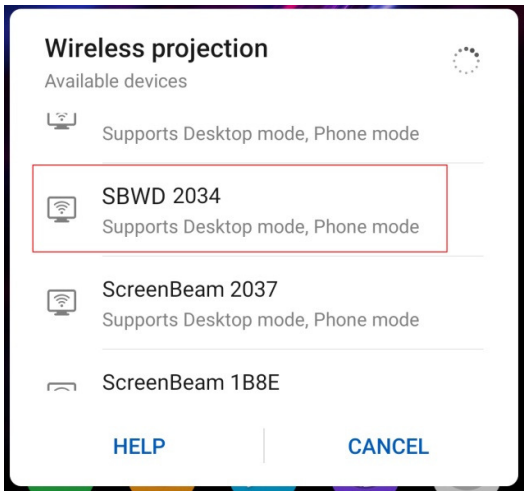
- For Windows 10

  Select **Connect** from the Action Center by swiping from right or simultaneously pressing the Windows key and K.



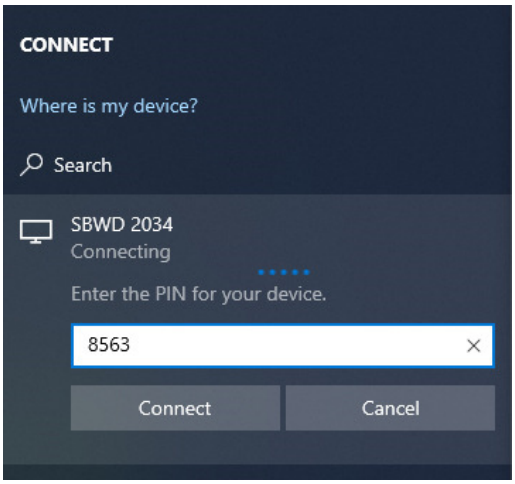
- For Android
  Select the Screen Mirroring option from the quick access menu and follow the connection instructions.



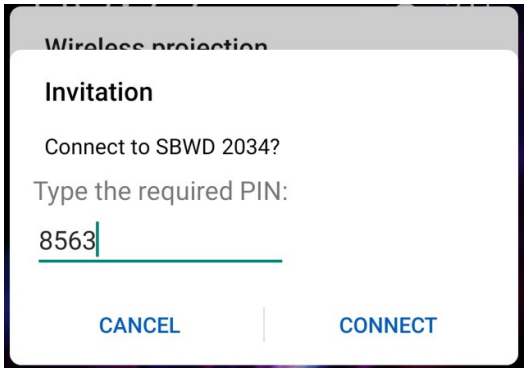


Note: Different Android device manufacturers may have different names for their wireless display apps.

2. Enter in the PIN if required. If the PIN code is not displayed, try the hidden PIN 1234 (default).
   Note: You should consult your network administrator if no PIN is displayed on the connected display device.

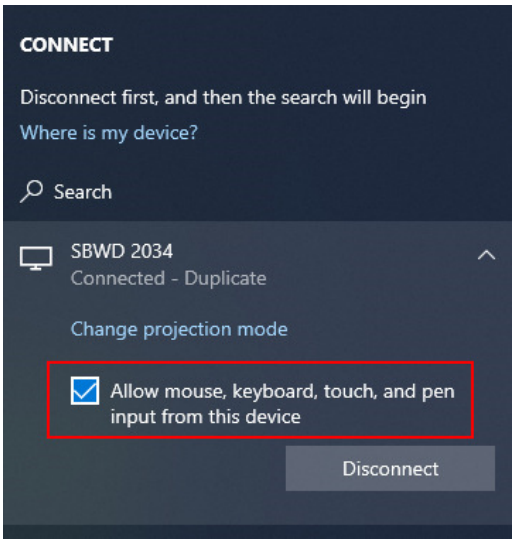


Windows 10



Android

3. Select duplicate or extended screen mode if prompted.
4. If the display has touch functionality, Windows 10 devices can take advantage of the touch and inking feature by selecting **Allow mouse….** (Refer to section **4.3 USB over Network Control** for more details.)



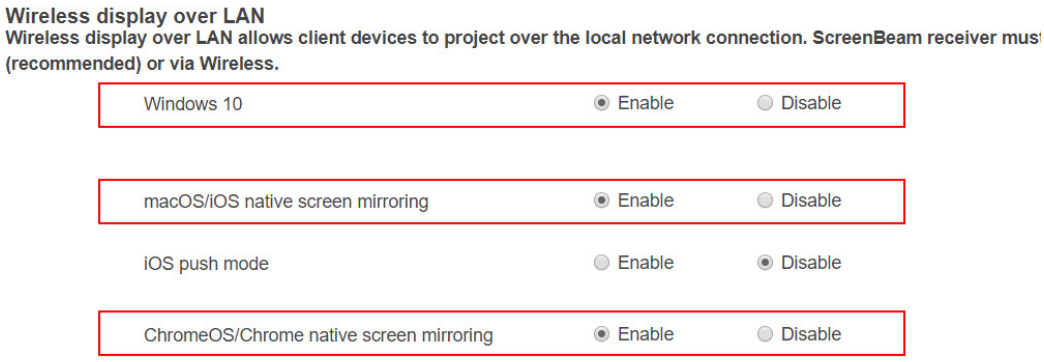
Note:

- To disconnect, follow instructions in step 1 to return to the screen mirroring menu and select mirroring off.
- Some Android devices do not support PIN and will fail to connect. Refer to Section **5.3.4.1 Setting up PIN Pairing Method** for instructions on how to configure ScreenBeam and disable PIN enforcement.

3.3 Connect using Existing Wireless Network or LAN

This section explains how to connect a client device to ScreenBeam 960 using existing wireless network or LAN.

1. Make sure that the **Wireless display over LAN** feature is enabled for Windows 10 and/or macOS/iOS AirPlay screen mirroring. Refer to section **5.3.2 Wireless Display over LAN** for detail.
   Note: You can also configure your receiver with CMS.



2. Connect the ScreenBeam receiver to a known network where your client device can communicate over Wi-Fi. Refer to Section **2.2 Connecting the Receiver to a Network** for detail.

3. Verify the receiver obtains an IP address (shown on the **Wireless Display Ready to Connect** screen).

4. Connect the client device to the same network as the ScreenBeam receiver.
5. Select the ScreenBeam receiver name as shown on the TV display.

- For Windows 10

  Select **Connect** from the Action Center by swiping from right or simultaneously pressing the Windows key and K.

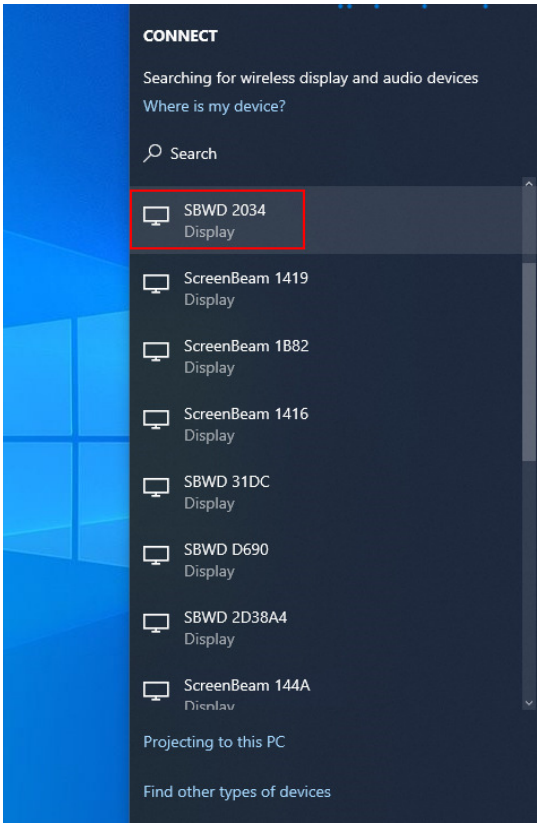


Figure: Selecting receiver on Windows 10 device

- For iOS or macOS
  Connect with AirPlay from the menu bar or control center.

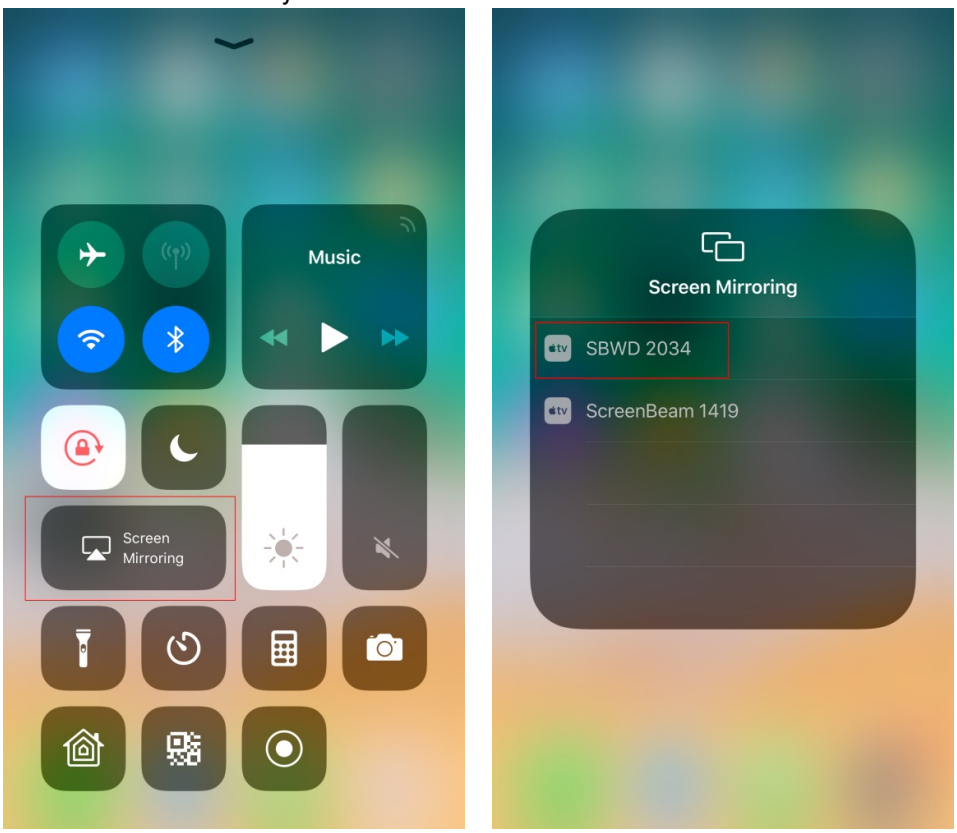
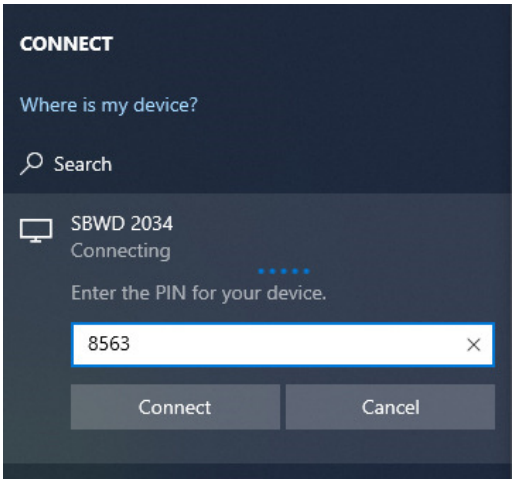


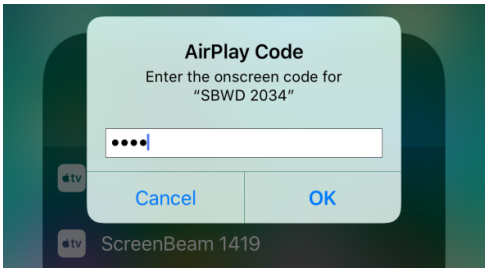
Figure: Selecting receiver on iOS device

Figure: Selecting receiver on macOS device

6. Enter in the PIN if required. If the PIN code is not displayed, try the hidden PIN 1234 (default).
   Note: You should consult your network administrator if no PIN is displayed on the connected display device.



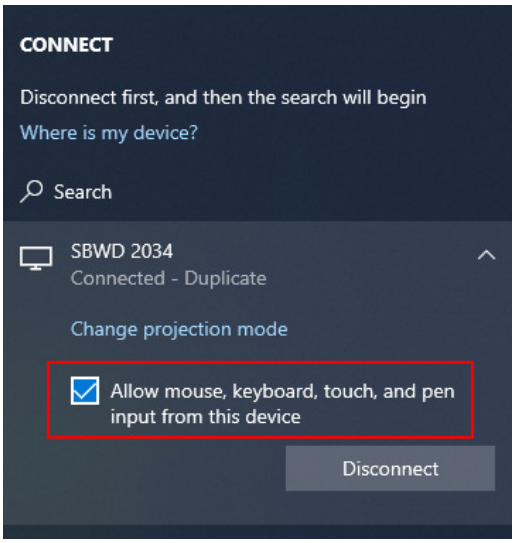
Windows 10



iOS

macOS

7. Select duplicate or extended screen mode if prompted.
8. If the display has touch functionality, Windows 10 devices can take advantage of the touch and inking feature by selecting **Allow mouse….** (Refer to section **4.3 USB over Network Control** for more details.)



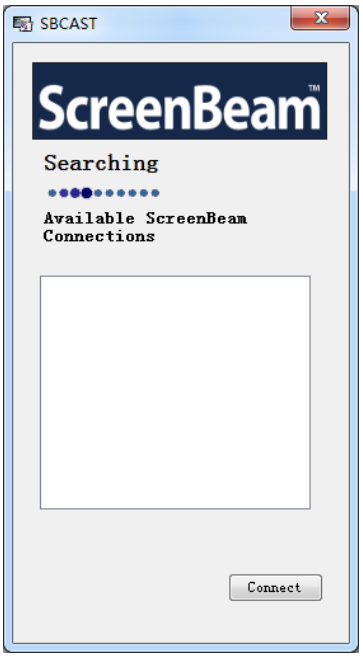
Note: To disconnect, follow instructions in step 5 to return to the screen mirroring menu and select mirroring off.

3.4 Connecting using ScreenBeam Cast on Windows 7

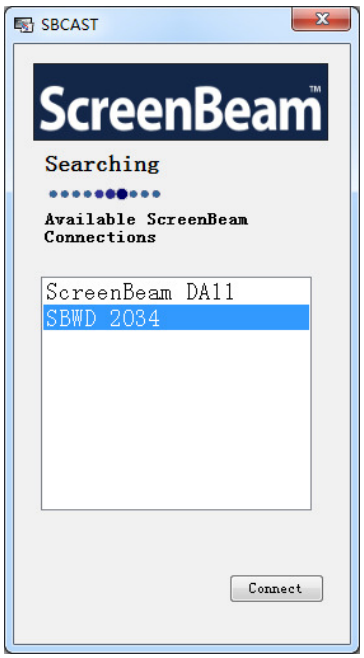
This section explains how to connect a Windows 7 device to ScreenBeam 960 over the infrastructure network using ScreenBeam SBCast. ScreenBeam SBCast software is available on support.screenbeam.com.

To connect a Windows 7 device to ScreenBeam 960 using the ScreenBeam SBCast app, follow this procedure:

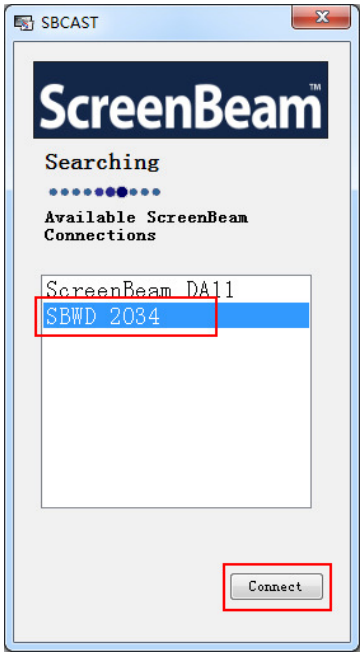
1. Ensure a router has been deployed in your network.
2. Ensure the **ScreenBeam SBCast** app has been installed on your device.
3. Ensure the Wireless Display over LAN for Max OS or Windows 7 feature has been enabled on your ScreenBeam 960 receiver. Refer to section **5.3.2.2 Setting up Wireless Display over LAN for Mac OS or Windows 7 Devices** for detail.
4. Connect ScreenBeam 960 to the router with an Ethernet cable (recommended) or with a wireless connection. Refer to Section **2.2 Connecting the Receiver to a Network** for detail.
5. Connect your Windows 7 device to the router, wired or wireless.
6. Launch **ScreenBeam SBCast** app on your Windows 7 device.



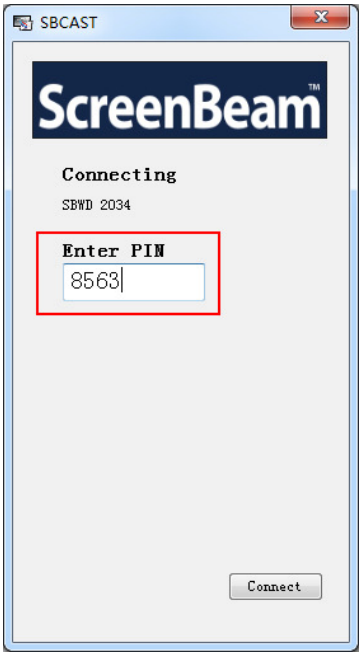
7. The **ScreenBeam SBCast** app starts and scans for available ScreenBeam 960 receivers, and displays them in the receiver list.



8. Select your receiver from the receiver list and click **Connect** to continue.

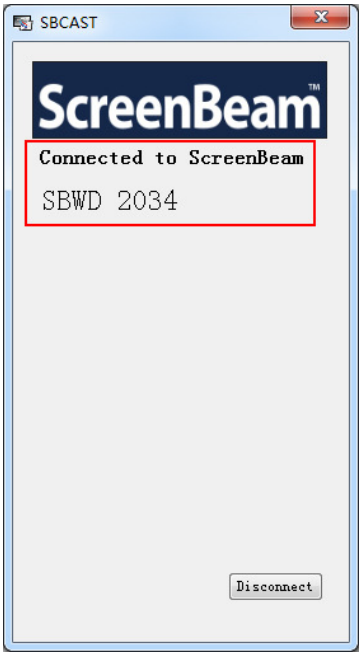


9. A PIN entry box appears on the ScreenBeam SBCast app. Type the PIN displayed on the TV screen in the PIN entry box and click **Connect** to continue.
   Note: You should obtain the security PIN from your network administrator if no PIN is displayed on the connected display device.



10. The HDTV displays messages to show status of the connection.

11. The device has connected to the receiver. And the device's screen is displayed on the HDTV.



3.5 Connecting using ScreenBeam Cast on Mac OSX

This section explains how to connect a Mac OSX device to ScreenBeam 960 over the infrastructure network using ScreenBeam SBCast. ScreenBeam SBCast software is available on support.screenbeam.com.

Note: Apple device with Mac OS 10.10 or newer are supported.

To connect a Mac OSX device to ScreenBeam 960 using ScreenBeam SBCast app, follow this procedure:

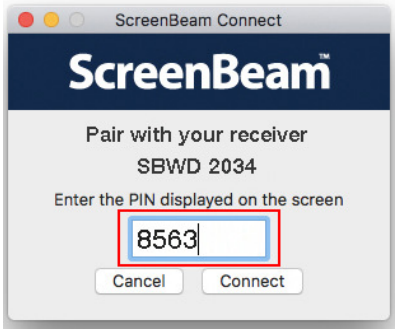
1. Ensure a router has been deployed in your network.
2. Ensure the **ScreenBeam SBCast** app has been installed on your device.
3. Ensure the Wireless Display over LAN for Max OS or Windows 7 feature has been enabled on your ScreenBeam 960 receiver. Refer to section **5.3.2.2 Setting up Wireless Display over LAN for Mac OS or Windows 7 Devices** for detail.
4. Connect ScreenBeam 960 to the router with an Ethernet cable (recommended) or with a wireless connection. Refer to Section **2.2 Connecting the Receiver to a Network** for detail.
5. Connect your Mac OSX device to the router, wired or wireless.
6. Launch **ScreenBeam SBCast** app on your Mac OSX device.

7. The **ScreenBeam Cast** app starts and scans for available ScreenBeam 960 receivers, and displays them in the receiver list.

8. Select your receiver from the receiver list and click **Connect** to continue.

9. A PIN entry box appears on the ScreenBeam SBCast app. Type the PIN displayed on the TV screen in the PIN entry box and click **Connect** to continue.

Note: You should obtain the security PIN from your network administrator if no PIN is displayed on the connected display device.



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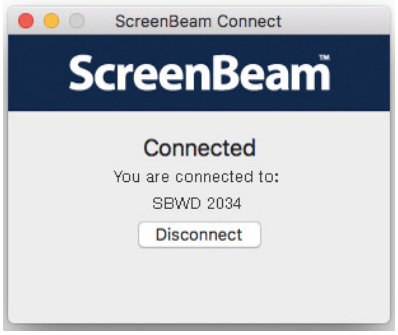


3.6 Tips for Optimal Performance

For optimal performance, you can try these tips:

- Keep the receiver within line-of-sight of the source device. Doing this will help ensure the receiver receives the best possible signal.
- The receiver's optimal wireless range is within 30 feet from the source device. However, actual range and effectiveness depends on many factors, including other sources of interference and the building materials used in the surrounding structure.
- Avoid placing the receiver near wireless interference sources, such as metal shelf, electric fans, items with motors, microwave ovens, cordless phones, and 2.4 GHz Non-WiFi radio devices.

Part IV Display and Control Options

This chapter describes the display modes and control options that are supported by the Receiver.

4.1 VGA Use Case

ScreenBeam 960 provides built-in VGA input and output ports for compatibility with legacy devices. The VGA ports follow the rules listed below:

When ScreenBeam is powered on,

- If only HDMI Out is connected, HDMI Out will display video from ScreenBeam;
- If only VGA Out is connected, VGA Out will display video from ScreenBeam;
- If VGA In and HDMI Out are connected, HDMI Out will display video from ScreenBeam;
- If VGA In and VGA Out are connected, HDMI Out will display nothing, and VGA Out will display video from VGA In;
- If VGA In, VGA Out, and HDMI Out are connected, HDMI Out will display video from ScreenBeam and VGA Out will display video from VGA In.

When ScreenBeam is powered off,

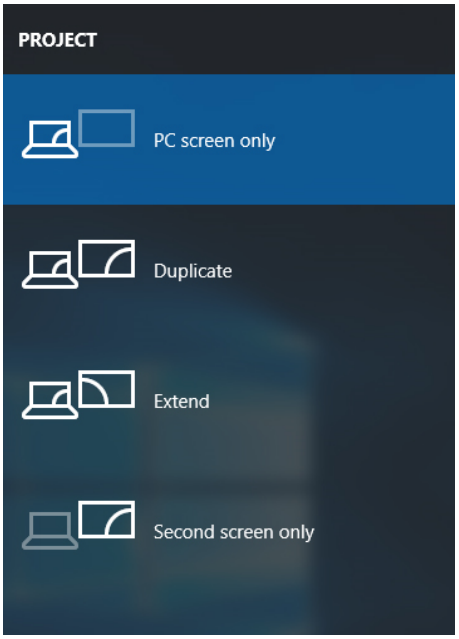
- HDMI Out will display nothing;
- If VGA In and VGA Out are connected, VGA Out will display video from VGA In.

4.2 Display Mode

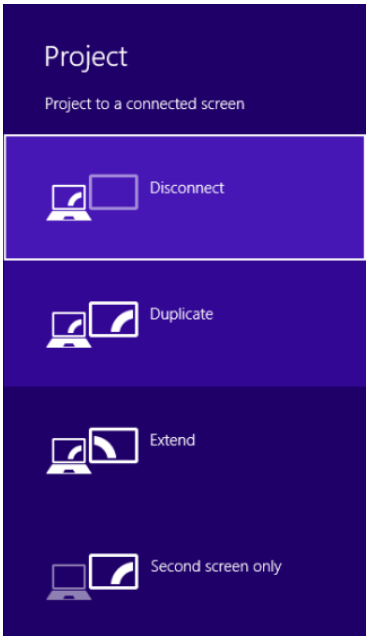
The Receiver supports three display modes when connected with a compatible wireless display application.

In Windows, press the **Windows** logo + **P** keys simultaneously (+ **P**) to launch the display options and select the desired display mode from the options.

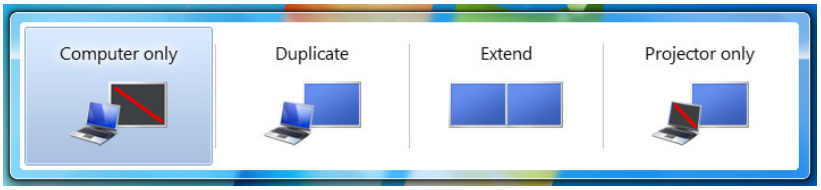
Windows 10



Windows 8.1



Windows 7



- **Duplicate**

The **Duplicate** mode is used to display the same content on both the device's screen and the HDTV simultaneously.

Note: There may be minor delay between the content displayed on the HDTV screen compared to the device's screen. This is due to the current state of wireless display technology.

- **Extend**

The **Extend** mode creates a single, extended "screen" between the source device and the HDTV. When in the **Extend** mode, dragging windows to the right side of the device's screen displays those windows on the HDTV, while dragging windows to the left of the HDTV screen displays them back on the device's screen. This mode allows users to display selected content on the HDTV, while all other windows remain on the device's screen. When this mode is first selected, the HDTV displays only the Windows desktop.

- **Second Screen Only**

The **Second Screen Only** mode causes the HDTV to be the only display for the device. You'll see everything on the connected screen, and your device's screen will be blank.

4.3 USB over Network Control

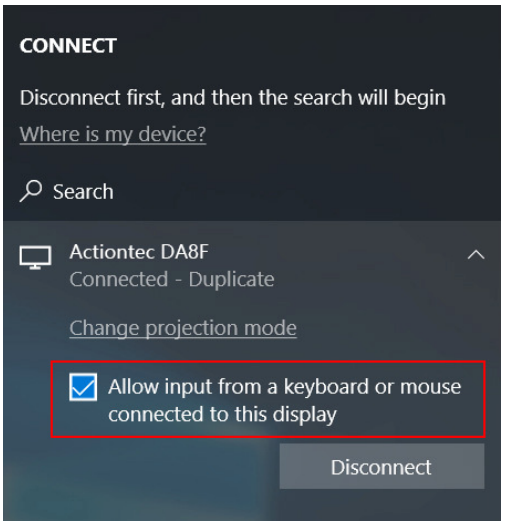
The ScreenBeam 960 receiver supports User Input Back Channel (UIBC) also known as USB over network control. This feature allows the use of USB HID peripheral devices from the source device to control the client device via ScreenBeam connection.

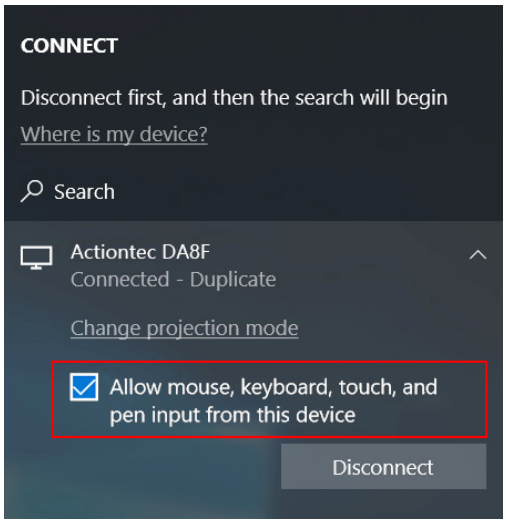
The USB over network control is available on **Windows 10** devices* only. The minimum CPU requirement for a Windows 10 device to support UIBC is either:

- 4th Generation Intel Core i3 (Haswell or better) processor
- AMD A4-5000 (Kabini or better) processor

To connect a USB keyboard, mouse, or trackpad:

1. Plug the USB HID peripheral into the Receiver's USB port and wait for the device to be detected. This may take 10-15 seconds.
2. Connect your Windows 10 device to the receiver, and remember to check the "*Allow input from a keyboard or mouse connected to this display*" or "*Allow mouse, keyboard, touch, and pen input from this device*" box.





Note: Although the checkbox "*Allow input from a keyboard or mouse connected to this display*" or "*Allow mouse, keyboard, touch, and pen input from this device*" may be available upon the Miracast connection, the UIBC feature will not be supported if the Windows 10 device does not meet the minimum CPU requirement.

3. Use the USB keyboard, mouse, or trackpad to control the source device.

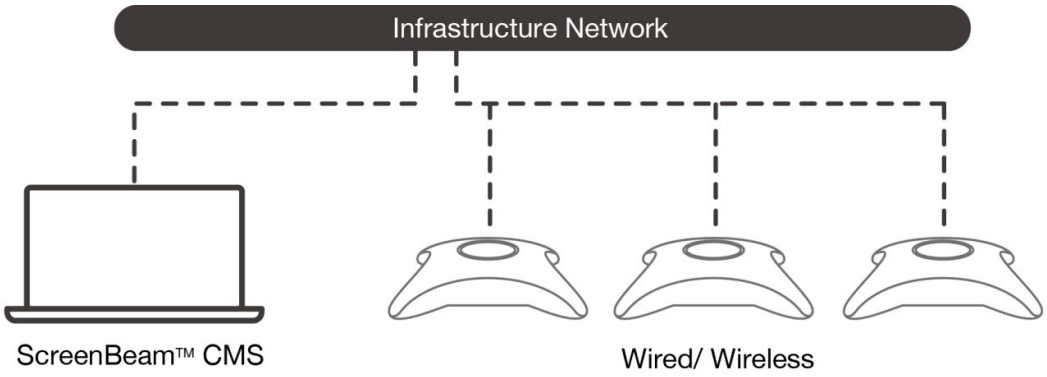
Part V Device Management for IT Administrator

ScreenBeam 960 can be configured by using the ScreenBeam CMS software or accessing the ScreenBeam's Local Management Interface (LMI).

5.1 Using ScreenBeam CMS Software

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

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



5.2 Using Local Management on ScreenBeam

The Local Management Interface can configure and update a single ScreenBeam at a time. There are three methods to access the LMI:

- Method 1: Wireless P2P Direct Connection (AGO)
- Method 2: Network Connection via DHCP
- Method 3: ScreenBeam Local Wi-Fi Network (NGO)

The Local Management Interface is allowed for access in one of the following situations:

- The receiver's **Local Management Interface Access** feature is set to **Auto** and the receiver is not connected to CMS;
- The receiver's **Local Management Interface Access** feature is set to **Enable**.

Refer to Section **5.3.6.1 Setting up Local Management Interface Access** for detail about Local

Management Interface Access.

There are two situations about logging into the receiver's LMI: when the receiver is in AGO mode and when it is in NGO mode.

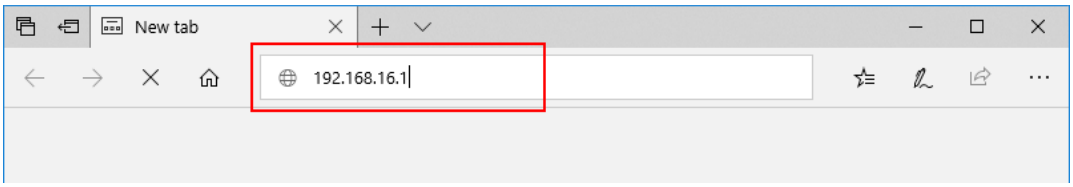
5.2.1 Method 1: Wireless P2P Direct Connection (AGO)

This method is available when the receiver is in AGO mode.

When **AGO** is enabled, users are allowed to log into the local management interface through "**https://192.168.16.1**". Connect a Miracast-enable device to the receiver, and then access the URL address with a web browser.

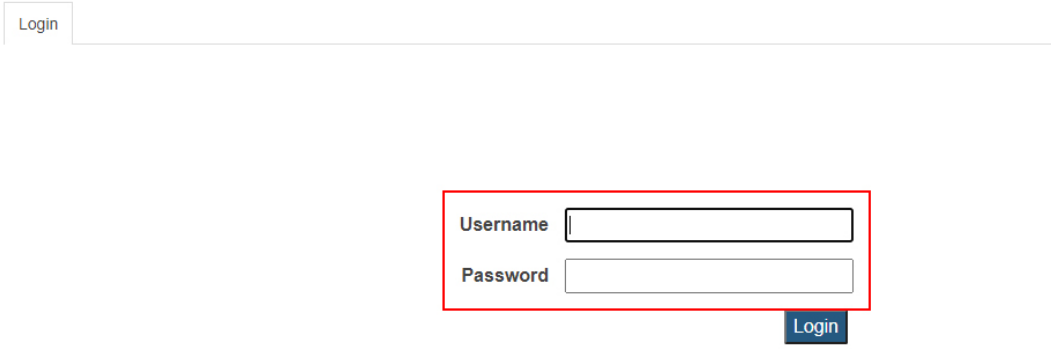
To log into the Local Management Interface in AGO mode, follow this procedure:

1. Connect a Miracast-enable device to ScreenBeam receiver.
2. Access the URL address (**https://192.168.16.1**) with a web browser on the device.



3. The browser may give an error stating "The connection or site is not secure or private." Manually accept the connection as follows:
   - **Chrome** browser: click **Advanced**, and then click **Proceed**.
   - **Edge/IE** browser: click **Details**, and then **Go on to the webpage (not recommended)**.
   - **Firefox** browser: click **Advanced**, then click **Add Exception**, then click **Confirm Security Exception**.

4. When the ScreenBeam management page appears, enter the Username **Administrator** and Password **screenbeam** (both case-sensitive).
   By default, the Username is **Administrator**, and password is **screenbeam**.
   Note: The default password is **Actiontec** for firmware 9.15.43.0 or older. And upgrading firmware to a newer version will not change the default password. The password will only be updated if the ScreenBeam receiver is reset.

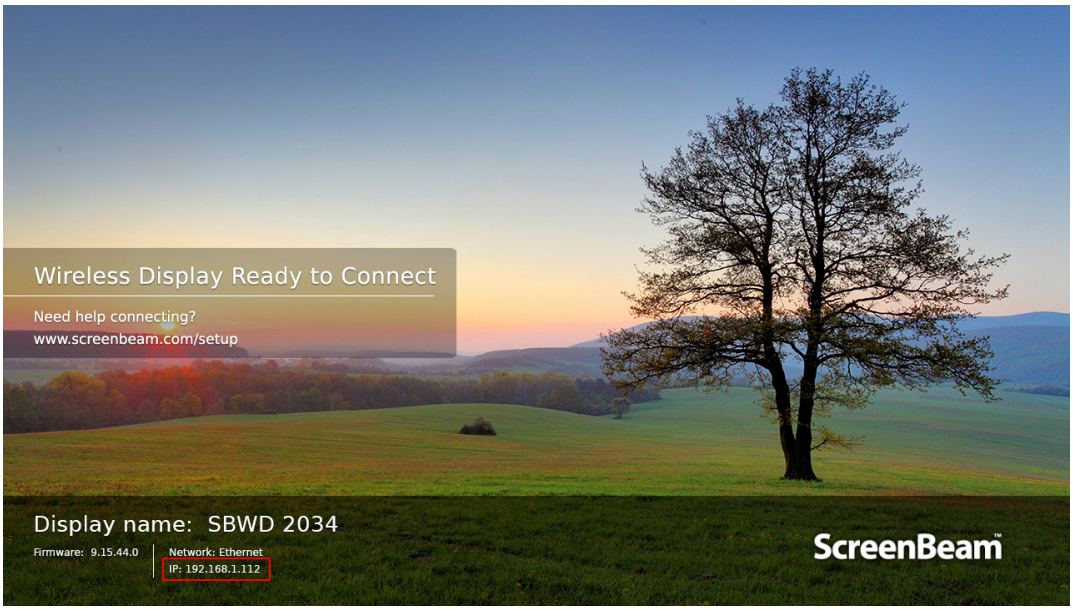


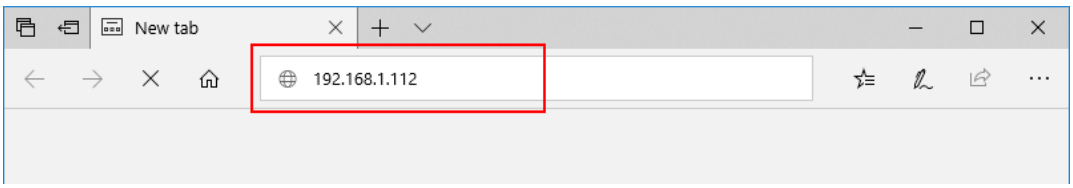
5.2.2 Method 2: Network Connection via DHCP

This method is available when the **Allow access via LAN** feature is set to **Enable**. Refer to Section **5.3.6.2 Setting up Allow Access via LAN** for details.

To log into the Local Management Interface using a LAN connection, follow this procedure:

1. Using a shielded RJ-45-terminated Cat5e or better Ethernet cable, connect the ScreenBeam Ethernet port to a DHCP enabled network.
   Note: Access via a wireless LAN connection is also allowed.
2. The **Ready to Connect** screen on the display will show the IP address assigned to the ScreenBeam. Enter this address into the web browser on a device on the same network as the ScreenBeam.





3. Follow the directions from Method 1 from Step 3 on.

5.2.3 Method 3: ScreenBeam Local Wi-Fi Network (NGO)

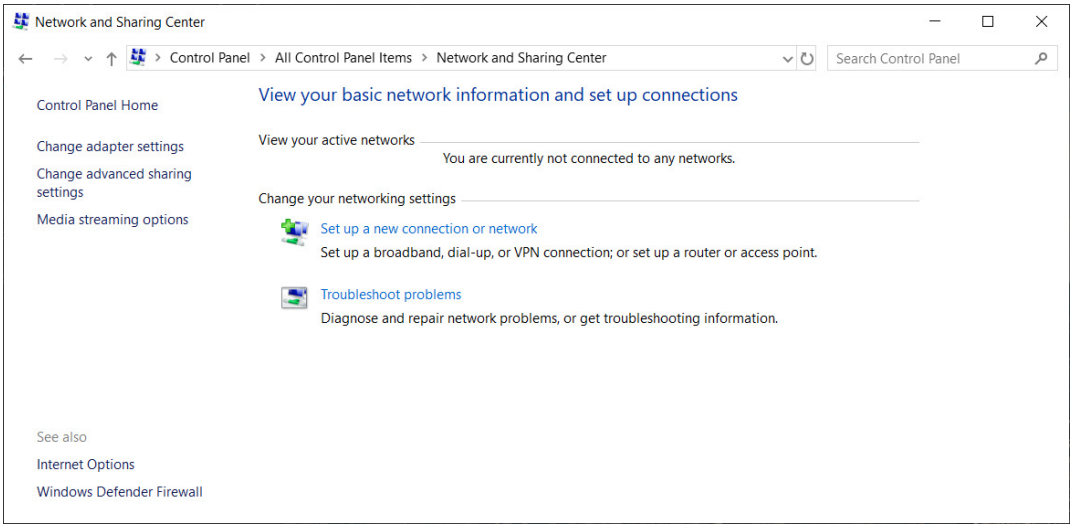
This method is available when the receiver is in NGO mode. There are two situations: when the receiver's SSID broadcast is disabled and when it is enabled.
By default, the receiver's SSID broadcast is disabled.

5.2.3.1 When SSID Broadcast is Disabled

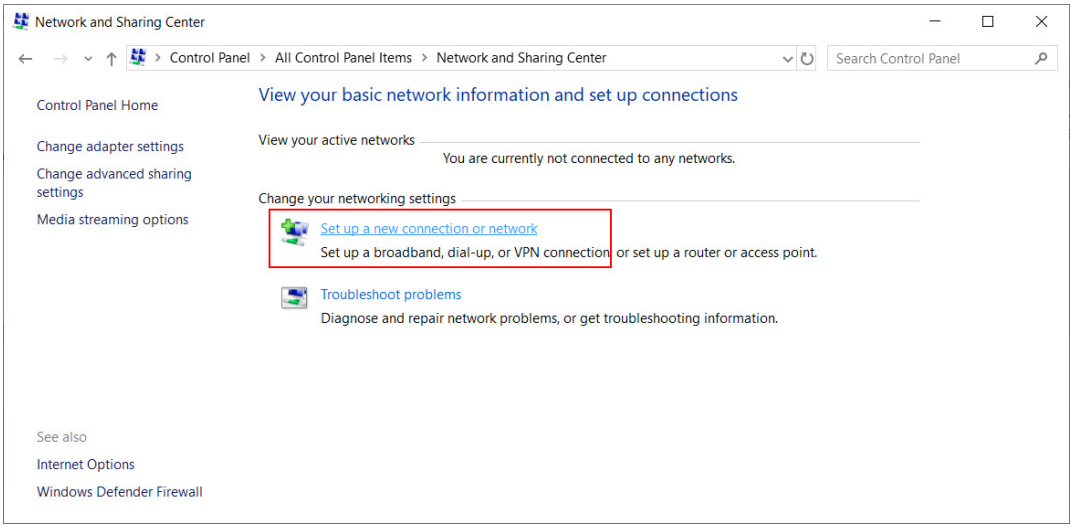
Connect to the receiver's SSID from a wireless-enabled laptop (or other devices with Wi-Fi access ability and a web browser), and then access this URL: **https://192.168.51.1** with a web browser.
To log into the Local Management Interface when the receiver doesn't broadcast its SSID, follow this procedure:

1. Find the receiver's SSID in the lower left corner of the **Wireless Display Ready to Connect** screen.

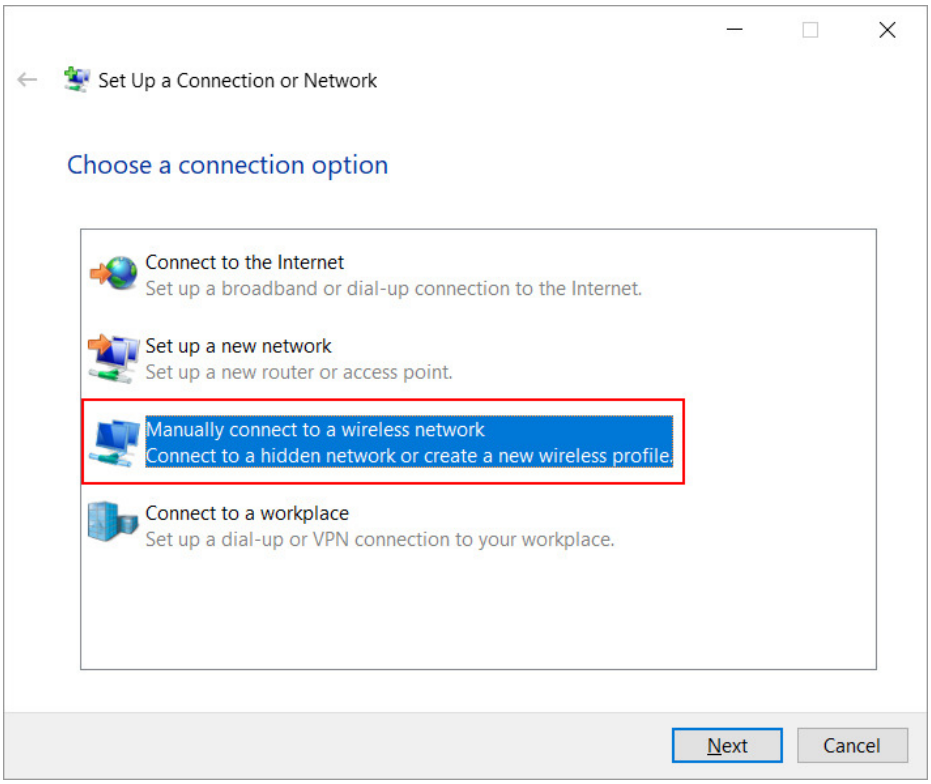
2. Go to **Network Sharing Center** via **Control Panel** > **Network and Internet** (or **All Control Panel Items**) > **Network Sharing Center** on a wireless-enabled laptop.



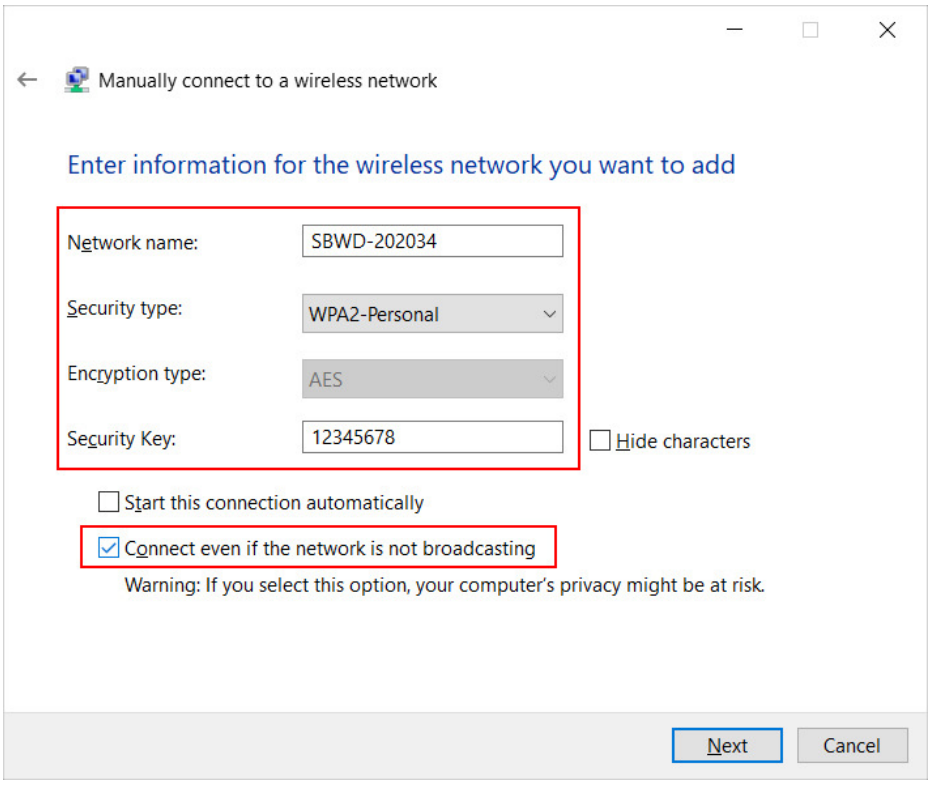
3. On the **Network and Sharing Center** window, click **Set up a new connection or network**.



4. The **Set up a new connection or network** window appears. Choose the **Manually connect to a wireless network** option.



5. The **Manually connect to a wireless network** window appears. Type in or select the following information.
   Network name: The SSID of the ScreenBeam 960 receiver
   Security type: WPA2 Personal
   Encryption type: AES
   Security key: 12345678 (default)

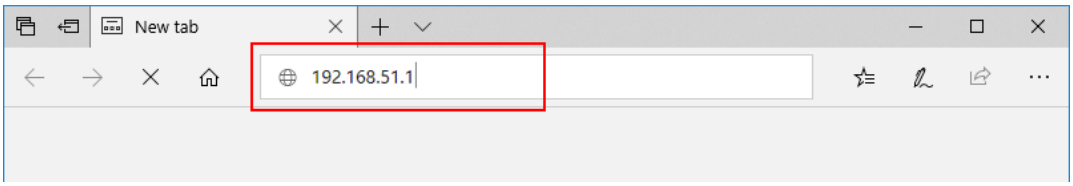


6. Check **Connect even if the network is not broadcasting**. Click **Next**. The receiver's SSID will be added to the laptop soon.
7. The laptop will connect to the SSID automatically if the "**Start this connection automatically**" option is checked. Otherwise, go to the **Networks** page and connect to the SSID.

8. A URL (it is “**https://192.168.51.1**”) is displayed on the connected display.

Note: This link will be displayed in full screen for a few seconds, and then it is displayed in the lower left corner (if network info display is enabled).

9. Access the URL address ("**https://192.168.51.1**") with a web browser on the laptop.



10. Follow the directions in Section **5.2.1 Method 1: Wireless P2P Direct Connection (AGO)** from Step 3 on.

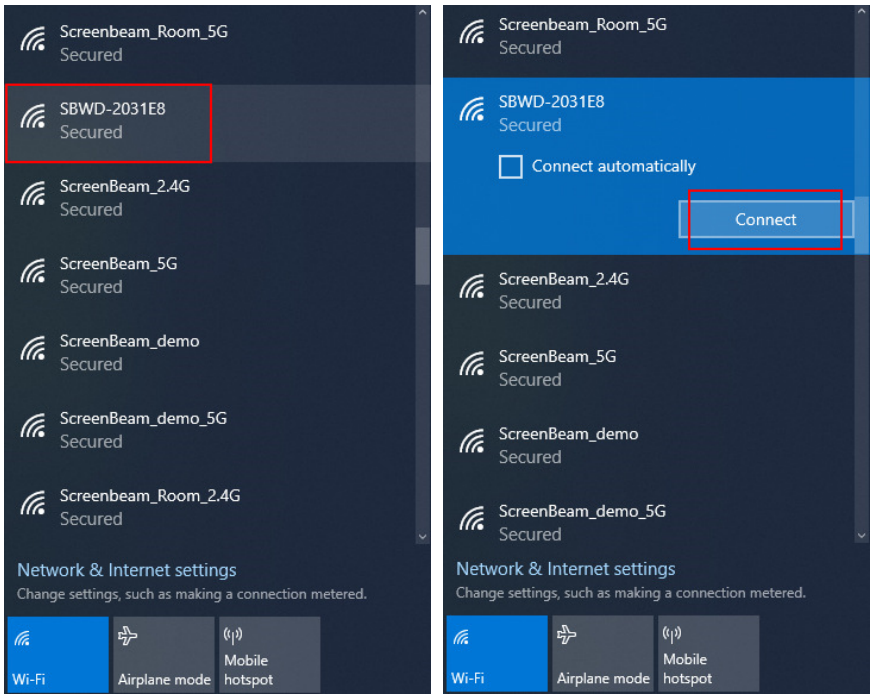
5.2.3.2 When SSID Broadcast is Enabled

Connect to the receiver's SSID from a wireless-enabled laptop (or other devices with Wi-Fi access ability and a web browser), and then access this URL: **https://192.168.51.1** with a web browser.

To log into the LMI when the SSID broadcast is enabled, follow this procedure:

1. Find the receiver's SSID in the lower left corner of the **Wireless Display Ready to Connect** screen.

2. Find the SSID on a Wi-Fi enabled device, select it and click **Connect** to continue. By default, the network security key is **"12345678"**.



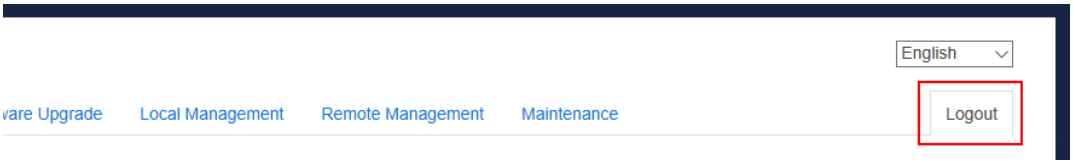
3. A URL (it is “**https://192.168.51.1**”) is displayed on the connected display.

Note: This link will be displayed in full screen for a few seconds, and then it is displayed in the lower left corner (if network info display is enabled).

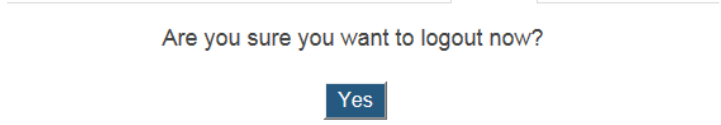
4. Access the URL address ("**https://192.168.51.1**") with a web browser on the laptop.
5. Follow the directions in Section **5.2.1 Method 1: Wireless P2P Direct Connection (AGO)** from Step 3 on.

5.2.4 Log Out

1. Go to the **Logout** tab page by clicking the **Logout** tab.



2. Click the “**Yes**” button to log out.



3. You will log out from the Local Management Interface immediately.

5.3 Configuring ScreenBeam

After you have logged into the Local Management Interface, you can configure ScreenBeam 960 on the Local Management Interface.

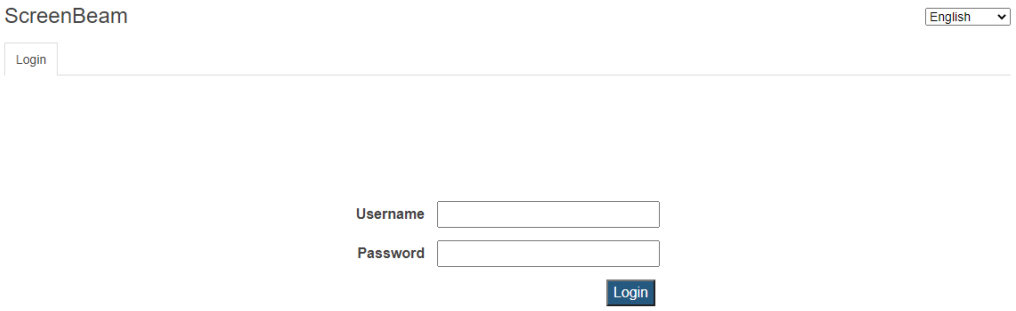
5.3.1 General Settings

This section introduces some general settings for the receiver.

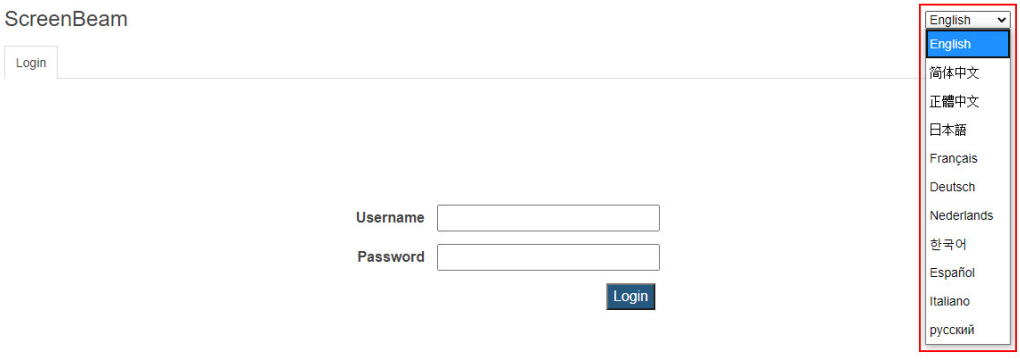
5.3.1.1 Changing Local Management Interface's Display Language

To change the LMI's display language, follow this procedure:

1. Open the Local Management Interface's login page. Refer to Section **5.2 Using Local Management on ScreenBeam** for detail.



2. On the upper right corner of the screen, select your language. Available languages are English, Simplified Chinese, Traditional Chinese, Japanese, French, German, Dutch, Korean, Spanish, Italian, and Russian.



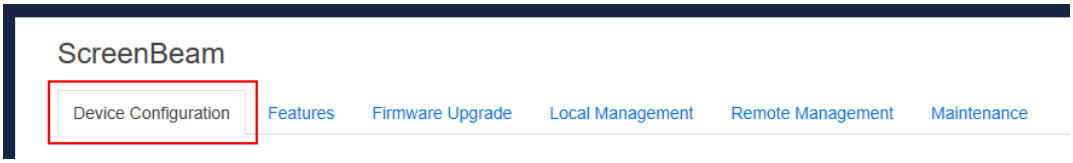
3. The display language changes immediately.

Note: This setting changes the webpage's display language only.

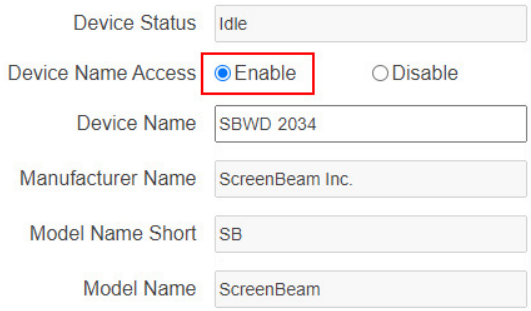
5.3.1.2 Renaming the Receiver

To rename your receiver, follow this procedure:

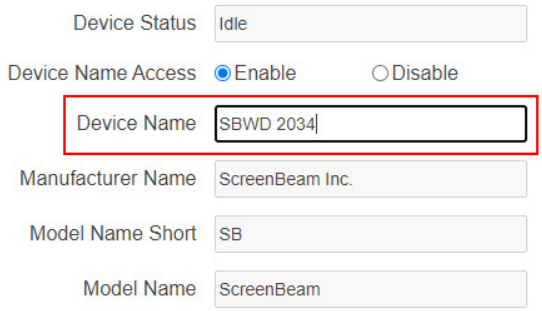
1. Go to the **Device Configuration** tab page by clicking the **Device Configuration** tab.



2. Go to the **Device Name Access** line and set the **Device Name Access** to **Enable**.



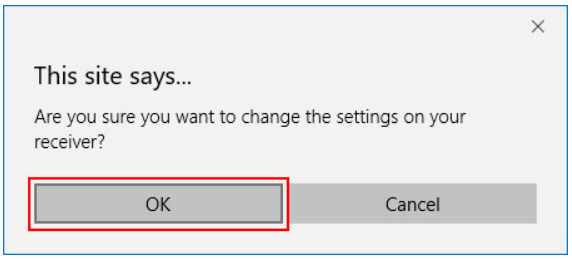
3. Type a new name in the **Device Name** box.



The receiver's **Device Name** supports the characters listed below:

- A-Z
- a-z
- 0-9
- ~!@#$%^&*()_+{}|:?\-=[];',./
- Japanese characters with Unicode in the following range: **\u3040-\u30FF**, **\u31F0-\u31FF**, and **\u4E00-\u9FBF**.
- Simplified and Traditional Chinese characters

4. Click the **Apply** button, and then click **OK** on the pop-up message box to confirm.

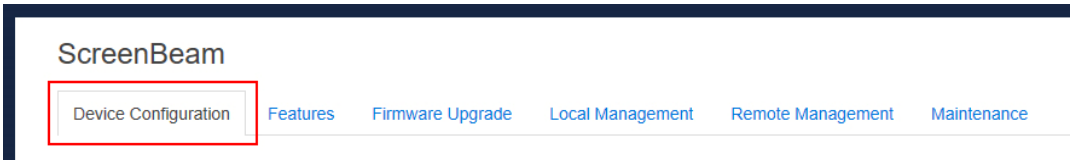


Note: New settings take effect immediately.

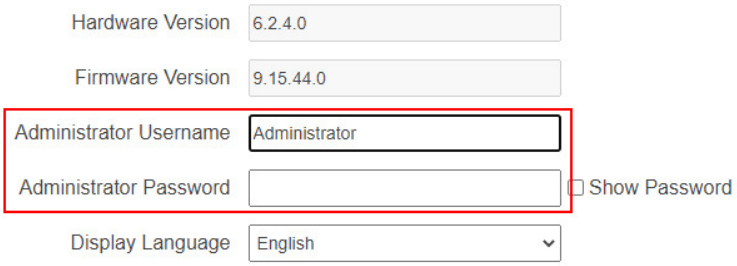
5.3.1.3 Setting up the Login Username and Password

To modify the username and password for user login, follow this procedure:

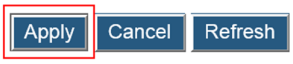
1. Go to the **Device Configuration** tab page by clicking the **Device Configuration** tab.

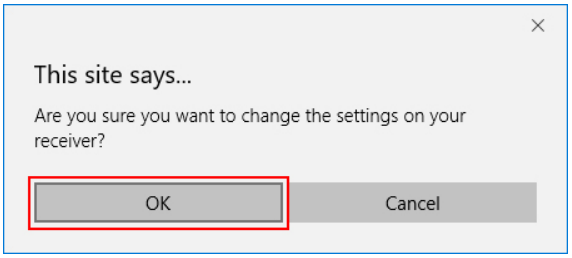


2. Go to the **Administrator Username** and **Administrator Password** lines, and type new username and password in the **Administrator Username** and **Administrator Password** boxes, respectively.
   Note: To display password in plain text, check the **Show Password** box.



3. Click the **Apply** button, and then click **OK** on the pop-up message box to confirm.

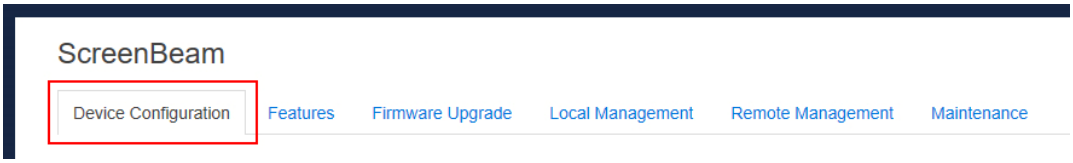




5.3.1.4 Setting up the Receiver's Display Language

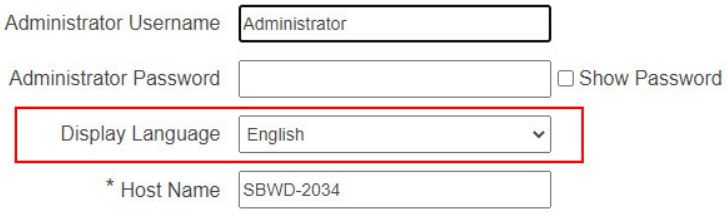
To set up the receiver's display language, follow this procedure:

1. Go to the **Device Configuration** tab page by clicking the **Device Configuration** tab.

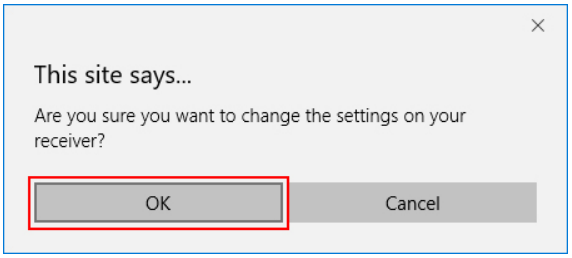


2. Go to the **Display Language** line, and choose a desired language from the **Display Language** drop-down box.
   Currently available languages are Simplified Chinese, Traditional Chinese, Dutch, English, French, German, Italian, Japanese, Korean, Russian, and Spanish.

Note: This setting will change the language displayed on the TV screen.



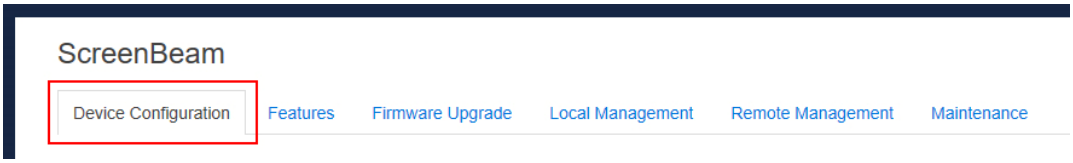
3. Click the **Apply** button, and then click **OK** on the pop-up message box to confirm.



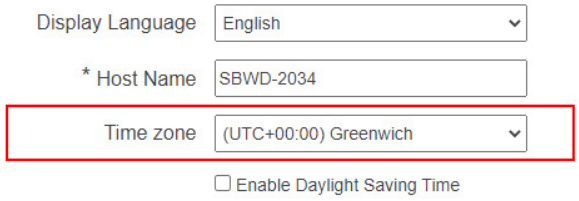
5.3.1.5 Setting up Time Zone

To select your time zone, follow this procedure:

1. Go to the **Device Configuration** tab page by clicking the **Device Configuration** tab.

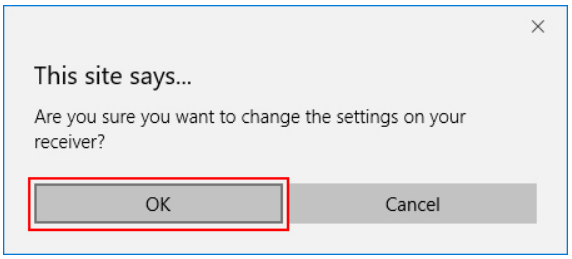


2. Go to the **Time zone** lines, and select your time zone in the drop-down box.



Note: The receiver will synchronize its time with the CMS server it connects to, or with an NTP server.

3. Check the **Enable Daylight Saving time** box if you want to enable daylight saving time.
4. Click the **Apply** button, and then click **OK** on the pop-up message box to confirm.



5.3.2 Wireless Display over LAN

Wireless Display over LAN allows non-Miracast ready Windows 10 devices to project over the local network connection. ScreenBeam receiver must be connected to the same network with the source device via Ethernet (recommended) or via wireless.

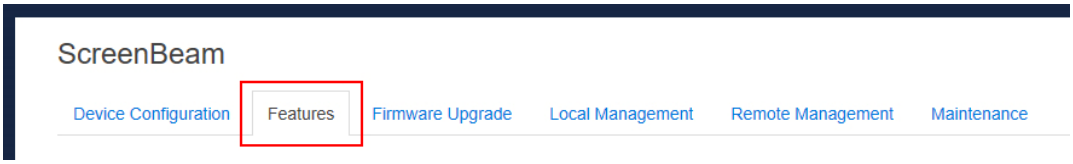
5.3.2.1 Setting up Wireless Display over LAN for Windows 10 Devices

If your Windows 10 device is not Miracast capable, you can still project your screen over LAN, as long as the following requirements are met:

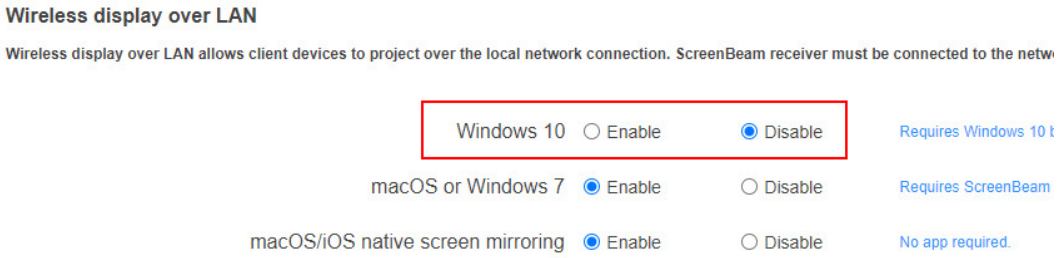
- Operating system: Windows 10, version 1703 or newer
- 100M/1000M Ethernet adapter (optional, but recommended) and WiFi adapter are available
- Stable local area network
- Windows 10 device and ScreenBeam 960 receiver are connected to the same LAN

To set up wireless display over LAN for Windows 10 devices, follow this procedure:

1. Go to the **Features** tab page by clicking the **Features** tab.

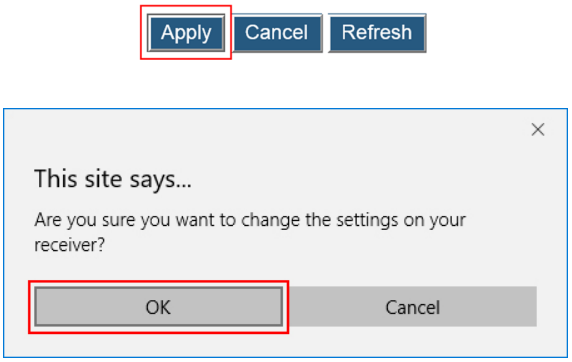


2. Go to the **Wireless display over LAN** section, and set **Windows 10** to **Enable** or **Disable**.



- **Enable**: Windows 10 devices are allowed to project over the local network.
- **Disable**: Windows 10 devices are not allowed to project over the local network. By default, this feature is disabled.

3. Click the **Apply** button, and then click **OK** on the pop-up message box to confirm.



5.3.2.2 Setting up Wireless Display over LAN for Mac OS or Windows 7 Devices

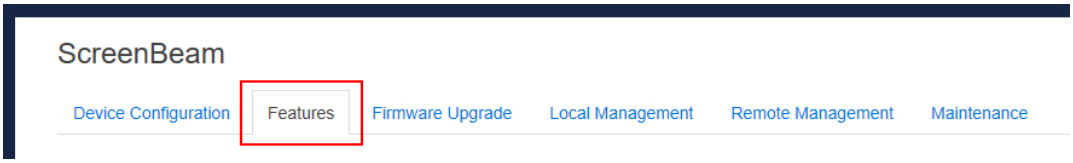
The Wireless Display over LAN feature allows Mac OSX devices and legacy Windows 7 devices to project over the local network.

Ensure the following requirements are met:

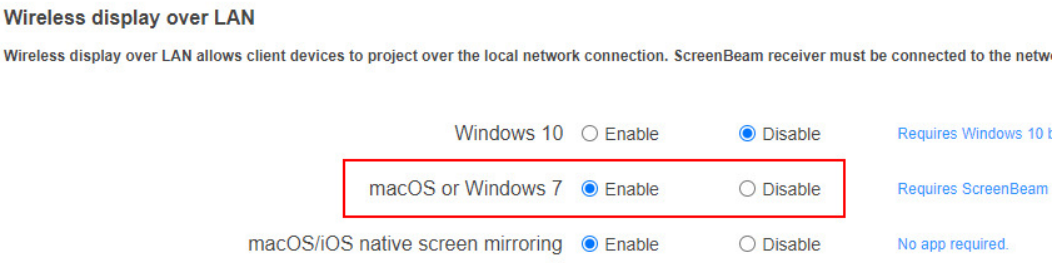
- Operating system: Mac OS (Yosemite, El Capitan, Sierra, High Sierra) or Windows 7
- 100M/1000M Ethernet adapter (optional, but recommended) and WiFi adapter are available
- Stable local area network
- Mac/Windows 7 device and ScreenBeam 960 receiver are connected to the same LAN
- ScreenBeam SBCast app is installed and it is not block by any firewall or AV software

To set up wireless display over LAN for Mac OSX or Windows 7 devices, follow this procedure:

1. Go to the **Features** tab page by clicking the **Features** tab.

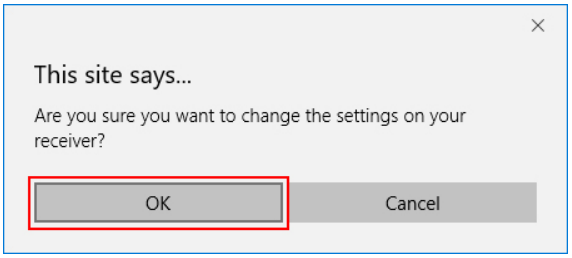


2. Go to the **Wireless display over LAN** section, and set **Mac OS or Windows 7** to **Enable** or **Disable**.



- **Enable**: Mac OS or Windows 7 devices are allowed to project over the local network with ScreenBeam SBCast app. By default, this feature is enabled.
- **Disable**: Mac OS or Windows 7 devices are not allowed to project over the local network with ScreenBeam SBCast app.

3. Click the **Apply** button, and then click **OK** on the pop-up message box to confirm.



5.3.2.3 Setting up Native Screen Mirroring for macOS/iOS Devices

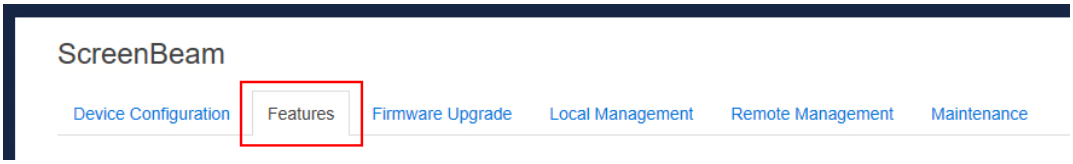
The Wireless Display over LAN feature allows macOS/iOS devices to project over the local network with native screen mirroring.

ENure the following requirements are met:

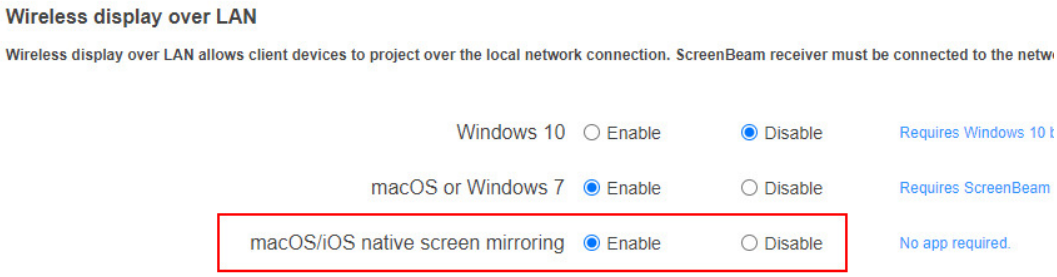
- Operating system: macOS or iOS
- 100M/1000M Ethernet adapter (optional, but recommended) and Wi-Fi adapter are available
- Stable local area network
- MacOS/iOS device and ScreenBeam 960 receiver are connected to the same LAN
- Required ports: UDP 5353, TCP 47000, TCP 7000, TCP 7100, TCP 18000-18009
  - UDP 5353, for Multicast DNS (mDNS) discovery
  - TCP 47000, for Airtune in AirPlay
  - TCP 7000, for AirPlay by passing URL
  - TCP 7100, for AirPlay mirroring
  - TCP 18000-18009, for macOS and iOS AV data

To set up native screen mirroring for macOS/iOS devices, follow this procedure:

1. Go to the **Features** tab page by clicking the **Features** tab.

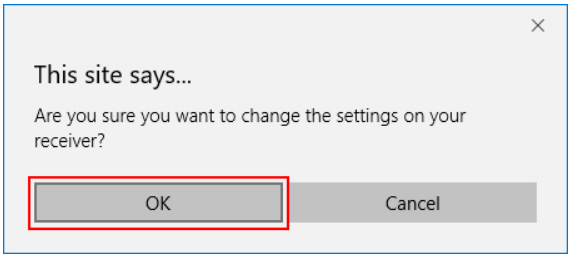


2. Go to the **Wireless display over LAN** section, and set **macOS/iOS native screen mirroring** to **Enable** or **Disable**.



- **Enable**: macOS/iOS devices are allowed to project over the local network with native screen mirroring. By default, this feature is enabled.
- **Disable**: macOS/iOS devices are not allowed to project over the local network with native screen mirroring.

3. Click the **Apply** button, and then click **OK** on the pop-up message box to confirm.



5.3.3 P2P Wireless Settings

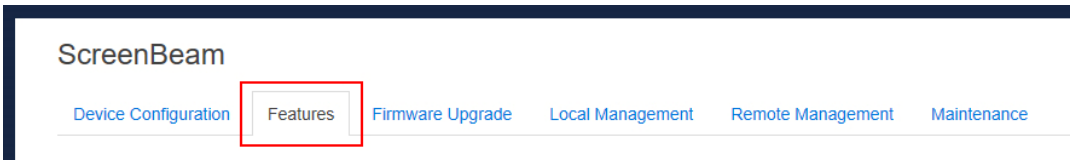
This section introduces the P2P connection modes, P2P operating channel, transmit power, and force disconnection.

5.3.3.1 Setting up P2P Connection Mode (AGO or NGO)

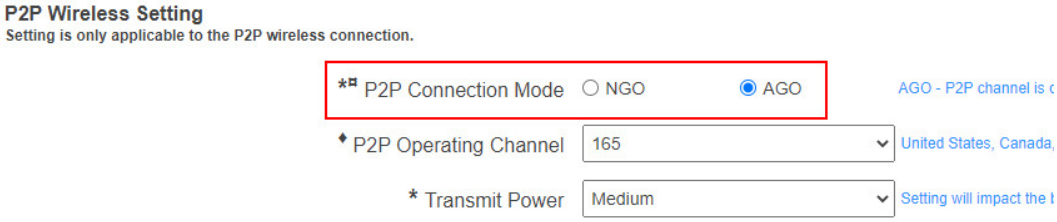
There are two P2P connection modes: NGO and AGO. In AGO, the receiver works as the group owner in the P2P connection, and it can specify the communication channel for the connection. If your receiver suffers severe interference in NGO mode, you can set your receiver in AGO mode, and set it to work on a clean channel.

To select a P2P connection mode, follow this procedure:

1. Go to the **Features** tab page by clicking the **Features** tab.



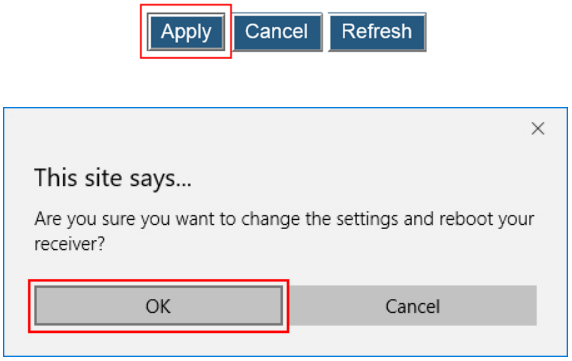
2. Go to the **P2P Wireless Setting** section, and select a P2P connection mode between **NGO** and **AGO**.
   - **AGO**: AGO refers to autonomous group owner during a P2P connection negotiation. In AGO mode, the receiver works as the group owner of the session, and the communication channel is defined by the receiver.
   - **NGO**: NGO refers to non-GO. In this mode, the communication channel will be consistent with the source device, or be determined through negotiation between the receiver and the connecting device.



Note: Changing the P2P connection mode may lead to the following problems:

- Method to access the local management interface webpage. Refer to section **5.2 Using Local Management on ScreenBeam** for detail.
- Previous Miracast device(s) connected to this ScreenBeam receiver needs to have its existing connection profile removed, in order to reconnect. Refer to the Troubleshooting section for detail on how to remove a receiver's connection profile.

3. Click the **Apply** button, and then click **OK** on the pop-up message box to confirm.

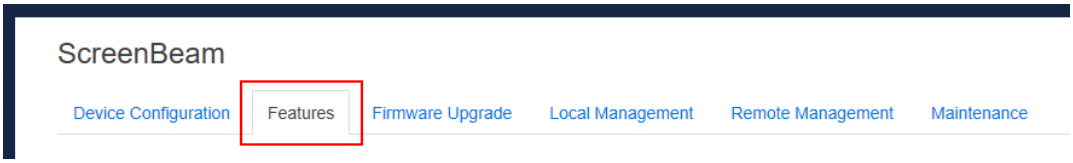


4. The receiver reboots, and new setting takes effect after the reboot.

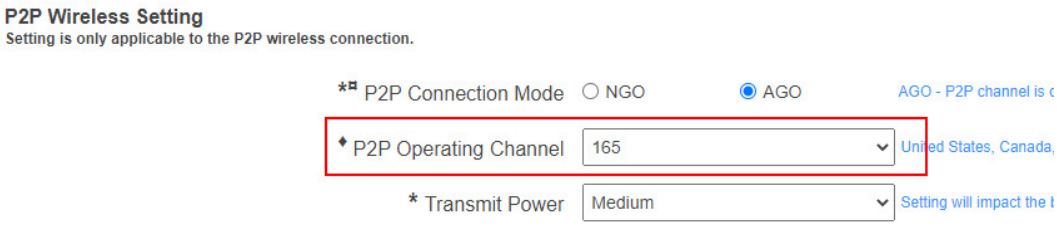
5.3.3.2 Setting up P2P Operating Channel (AGO Mode Only)

When AGO is enabled, users are allowed to define an operating channel for communication between the wireless display receiver and the source device.
This feature is available in AGO mode only.
To set up the receiver's operating channel, follow this procedure:

1. Go to the **Features** tab page by clicking the **Features** tab.



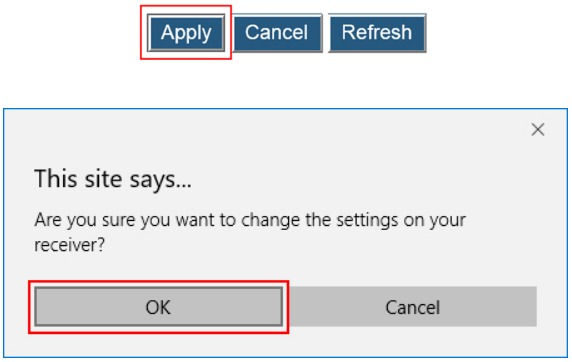
2. Go to the **P2P Wireless Setting** section, and select a desired channel from the **P2P Operating Channel** drop-down box.



Channels from 1 to 13 belong to the 2.4 GHz band; and channels from 36 to 165 belong to the 5 GHz band. By default, channel 165 is used.
Availability of channels depends on the sales region (country code).
You should select a channel based on your network environment. Generally, cleaner channels (where less devices work) will provide better performance. You can use Wi-Fi Analyzer to help you identify a clean channel.
Note: ScreenBeam receivers do not support Dynamic Frequency Selection (DFS) channels, 50 through 144, because it's prohibited in a direct Wi-Fi usage model. You should disconnect your source device from the DFS-capable router (AP) or connect to a non-DFS

AP if the Wi-Fi adapter of your source device cannot work in dual bands.

3. Click the **Apply** button, and then click **OK** on the pop-up message box to confirm.



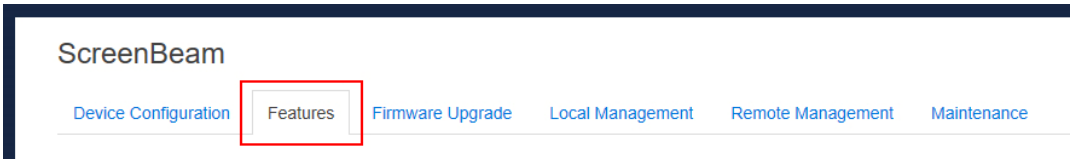
Note: New setting takes effect on the next connection.

5.3.3.3 Setting up Transmit Power

ScreenBeam 960 allows users to tune down or up the transmission power of the Wi-Fi adapter for Miracast connection.

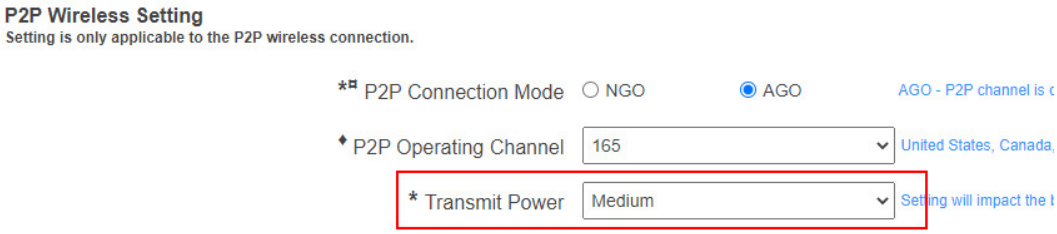
To set up the receiver's transmission power, follow this procedure:

1. Go to the **Features** tab page by clicking the **Features** tab.

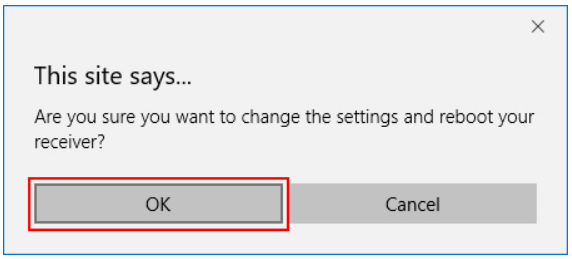


2. Go to the **P2P Wireless Setting** section, and select an option from the **Transmit Power** drop-down box.

   Lower transmit power can reduce interference to the nearby devices. Higher transmit power can ensure longer working distance.



3. Click the **Apply** button, and then click **OK** on the pop-up message box to confirm.



4. The receiver reboots, and new setting takes effect after the reboot.

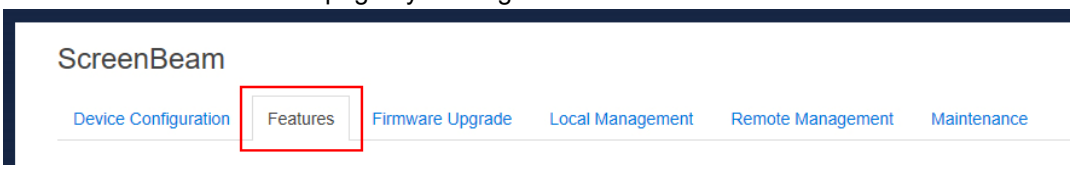
5.3.4 Security Settings

This section introduces the receiver's PIN pairing methods.

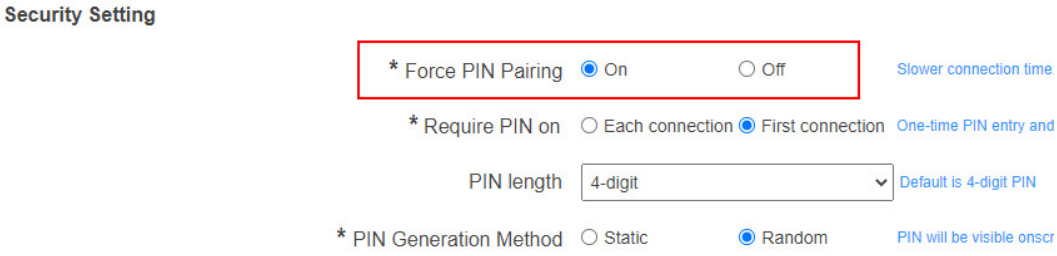
5.3.4.1 Setting up PIN Pairing Method

To set up PIN pairing method, follow this procedure:

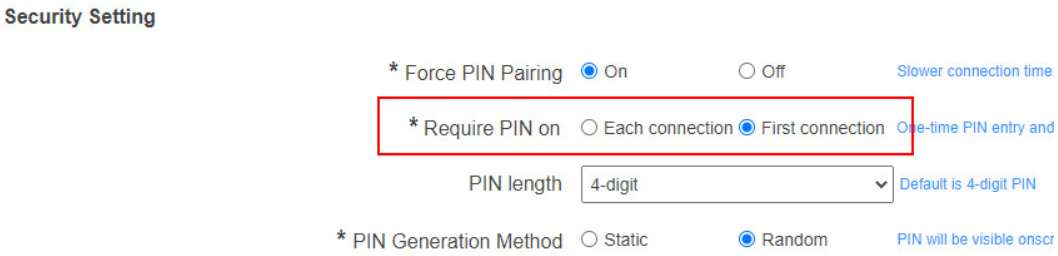
1. Go to the **Features** tab page by clicking the **Features** tab.



2. Go to the **Security Setting** section, and set the **Force PIN Pairing** feature to **On** or **Off**.
   - Select "**Off**" to disable the PIN enforcement function. PIN or PBC pairing is used when connecting a source device to the receiver for the first time.
   - Select "**On**" to enable the PIN enforcement function. In this case, you must enter a PIN code on the device connecting to the receiver every time or the first time.
     Note: Some wireless display source device may not support PIN entry and may not be able to connect with the ScreenBeam receiver if this mode is enabled. Refer to the device's user manual for detail about enabling the PIN connection.

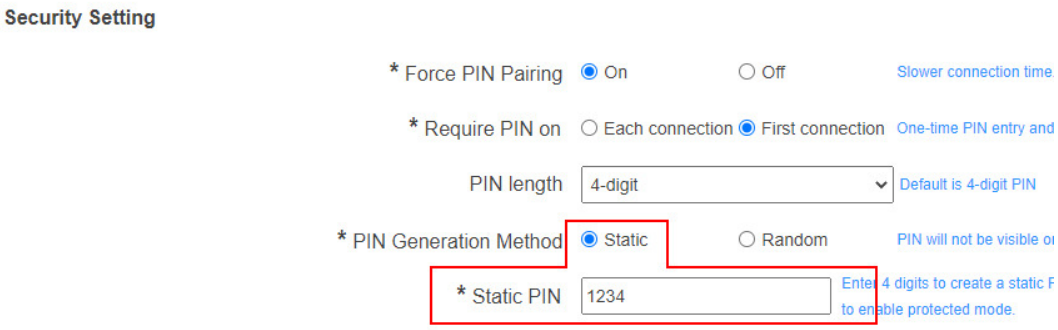


3. Select a PIN pairing method.
   - **Each connection**: It is required to provide PIN every time when a device connects to the receiver.
   - **First connection**: It is required to provide PIN the first time when a device connects to the receiver.



4. Select a PIN length: 4-digit and 8-digit.
   - **4-digit**: The receiver will generate a 4-digit PIN. By default, the 4-digit PIN is used.
   - **8-digit**: The receiver will generate an 8-digit PIN.

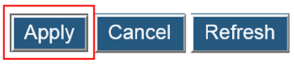
5. Select a PIN generation method.
   When the **Force PIN Pairing** feature is enabled, the system provides two PIN generation methods: **Static** and **Random**.
   - **Static**: When **Static** is selected, users can define a PIN flexibly. The static PIN will not be displayed on the connected display.
     If **8-digit** is selected for the PIN length, users can define the first seven (7) digits, and then the system generates an 8-digit PIN with that seven digits included.
     Enter seven (7) digits in the **Static PIN** box, and the system generates the eighth (8th) digit.

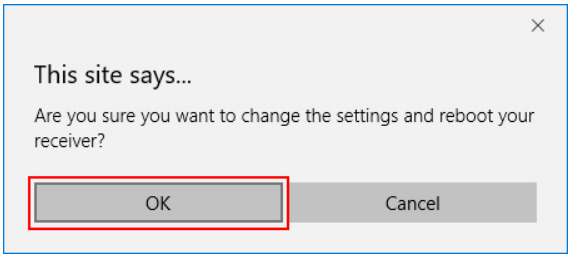


   - **Random**: A PIN code is generated randomly by ScreenBeam and displayed on the

connected HDTV/projector.

6. Click the **Apply** button, and then click **OK** on the pop-up message box to confirm.





5.3.5 Display Settings

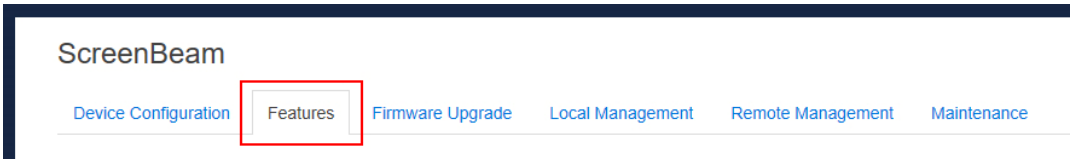
This section introduces display related features.

5.3.5.1 Setting up Display Sharing Mode

ScreenBeam 960 supports two display sharing modes: Single mode and Quick Switch mode.

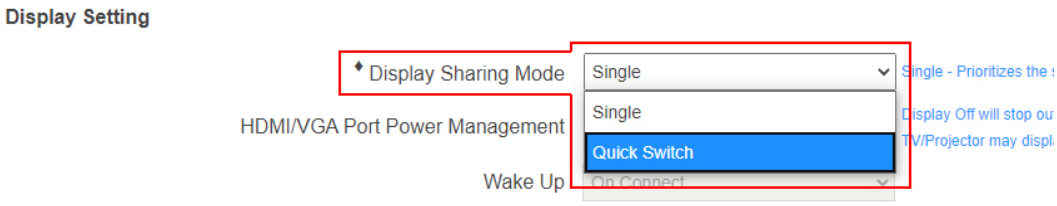
To select a display sharing mode, follow this procedure:

1. Go to the **Features** tab page by clicking the **Features** tab.

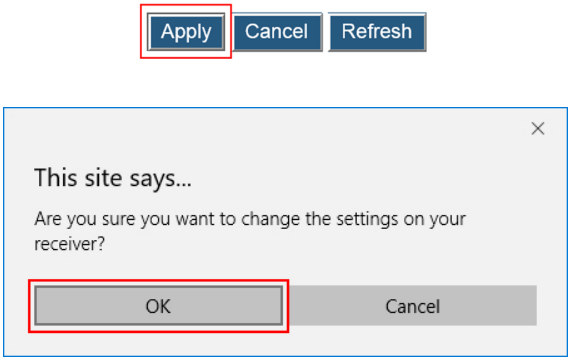


2. Go to the **Display Setting** section, and select a desired option from the **Display Sharing Mode** menu. Available options are: **Single** and **Quick Switch**.
   - **Single**: Other device is not allowed to connect if the receiver is already in use.
   - **Quick Switch**: A Miracast capable device can connect to the receiver even though the receiver is in an active Miracast connection.

     Note: Quick Switch is available for Miracast connection only. Quick switch can't work for Infracast connections (Wireless Display over LAN for Windows 10) or Airplay connections.



3. Click the **Apply** button, and then click **OK** on the pop-up message box to confirm.

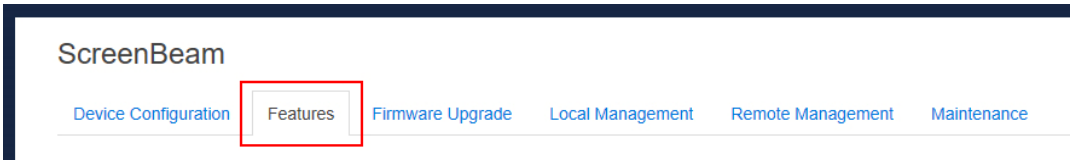


5.3.5.2 Setting up Receiver Name Display for Quick Switch

ScreenBeam 960 allows customizing the display of receiver name in the Quick Switch mode.

To set up the placement of the receiver's name, follow this procedure:

1. Go to the **Features** tab page by clicking the **Features** tab.

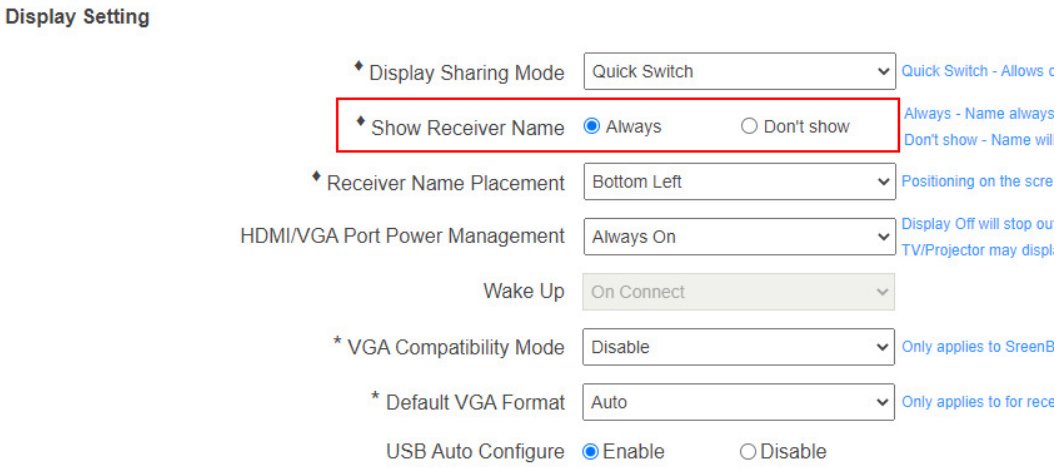


2. Go to the **Display Setting** section, and ensure that **Display Sharing Mode** is set to **Quick Switch**.
3. Set **Show Receiver Name** to **Always**.

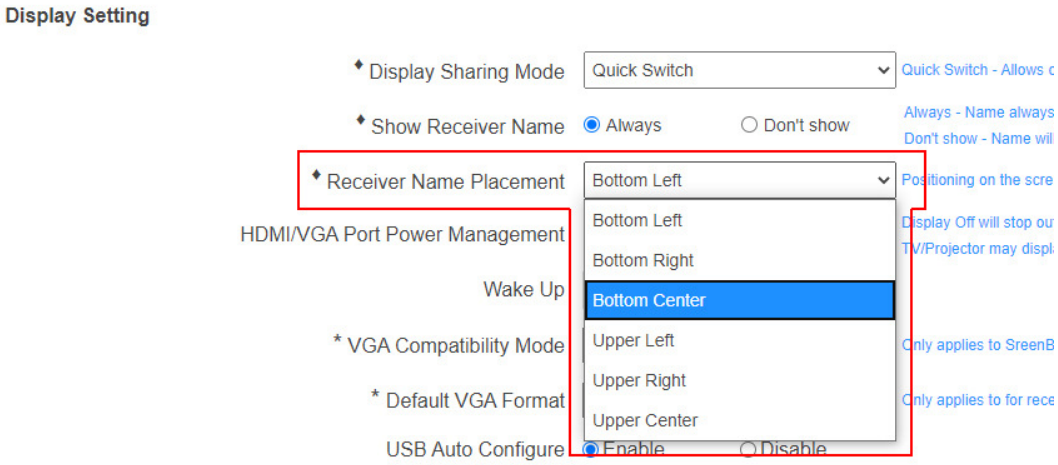
   The **Show Receiver Name** feature provides two options, as shown below:

   - **Always**: The receiver's name will be displayed on the connected TV when an active connection session is present.
   - **Don't show**: The receiver's name will not be displayed on the connected TV when an active connection session is present.

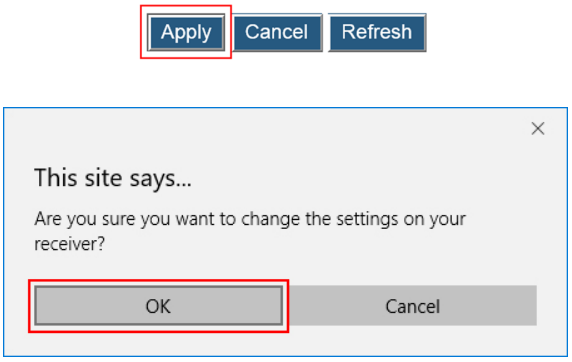
     Note: If this option is selected, the receiver name placement is not available.



4. Select an option from the **Receiver Name Placement** drop-down box.



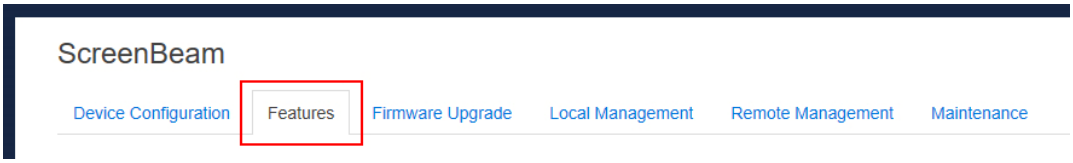
5. Click the **Apply** button, and then click **OK** on the pop-up message box to confirm.



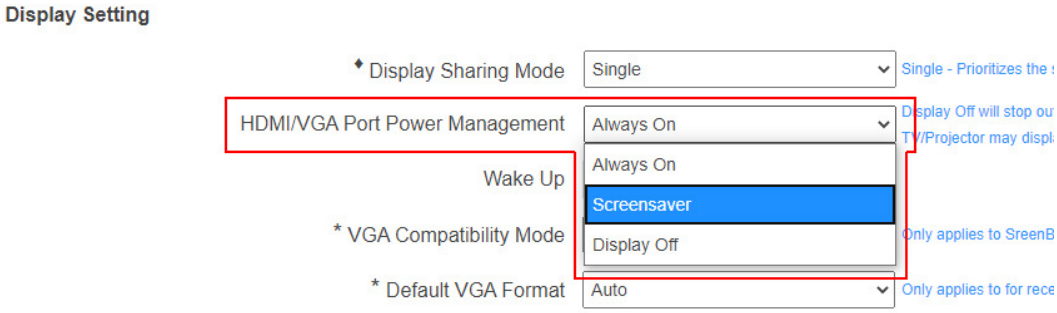
5.3.5.3 Managing HDMI/VGA Port Output

To set up HDMI/VGA port output, follow this procedure:

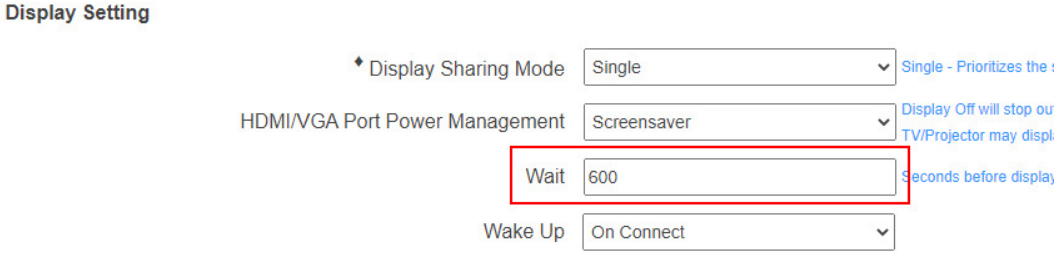
1. Go to the **Features** tab page by clicking the **Features** tab.



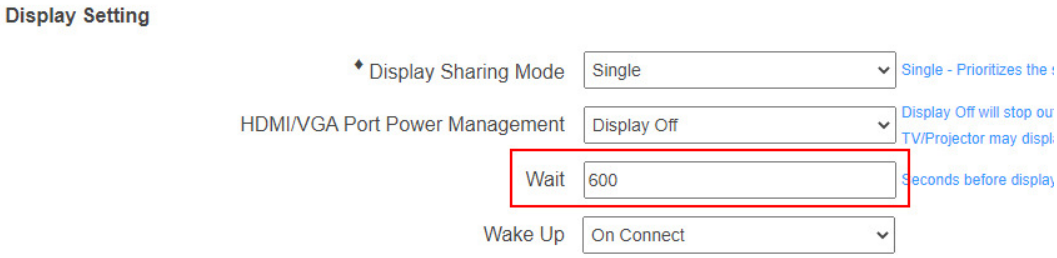
2. Go to the **Display Setting** section, and select a desired option in the **HDMI/VGA Port Power management** drop-down box. There are three options: **Always On**, **Screensaver**, and **Display Off**.



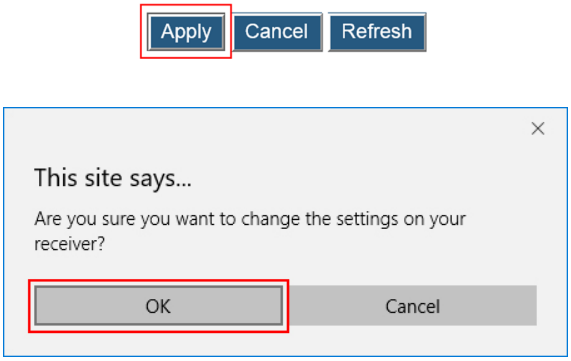
- **Always On**: Selecting this option, the HDMI output is always on.
- **Screensaver**: Selecting this option, the system will run the screen saver after the defined idle time expires. Users can define the idle time (1-9999 seconds) in the **Wait** time box.



- **Display Off**: Selecting this option, the HDMI/VGA output will be turned off after the defined idle time expires. Users can define the idle time (1-9999 seconds) in the wait time box.



3. Click the **Apply** button, and then click **OK** on the pop-up message box to confirm.

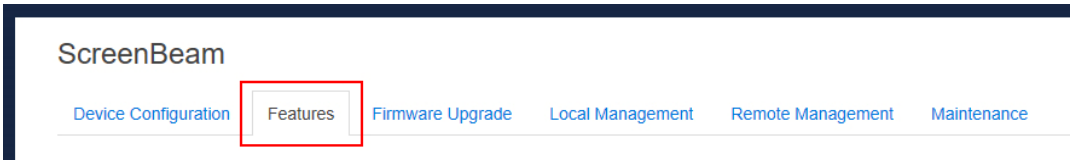


5.3.5.4 Waking up the Receiver

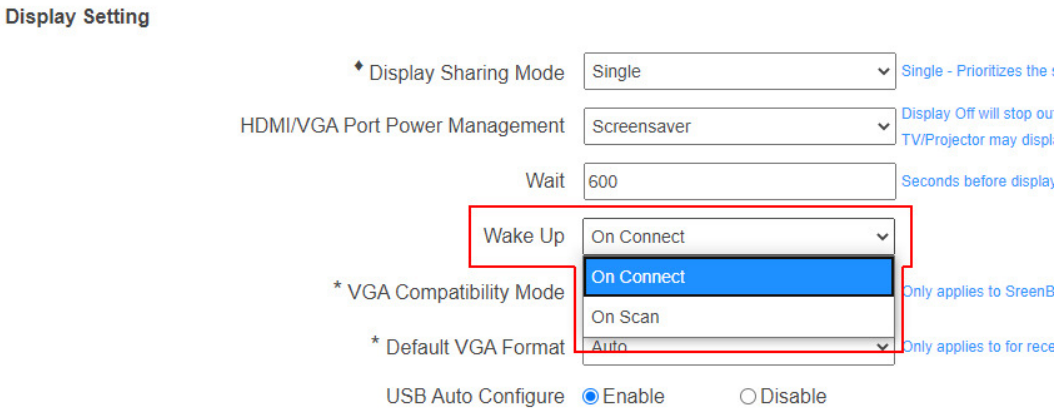
When the receiver runs screen saver or turns off its HDMI output, it can be waked up by any one of two events: scanning and connecting.

To set up the receiver's wakeup feature, follow this procedure:

1. Go to the **Features** tab page by clicking the **Features** tab.

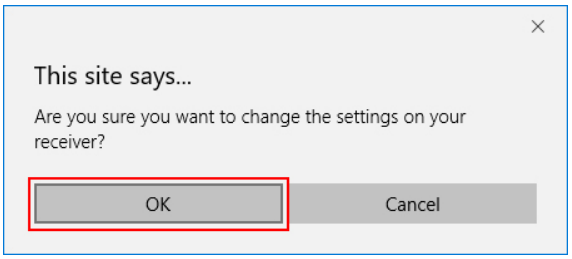


2. Go to the **Display Setting** section, and set the **Wake Up** feature to **On Scan** or **On Connect**.
   - **On Scan**: The receiver will wake up from sleep or screen saver when it detects that a source device is scanning.
   - **On Connect**: The receiver will wake up from sleep or screen saver only when a source device is connecting.



Note: The **Wake Up** feature is available for setup when **HDMI/VGA Port Power management** is set to **Screensaver** or **Display Off**.

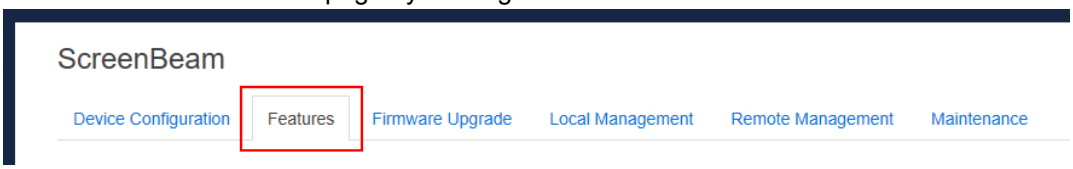
3. Click the **Apply** button, and then click **OK** on the pop-up message box to confirm.



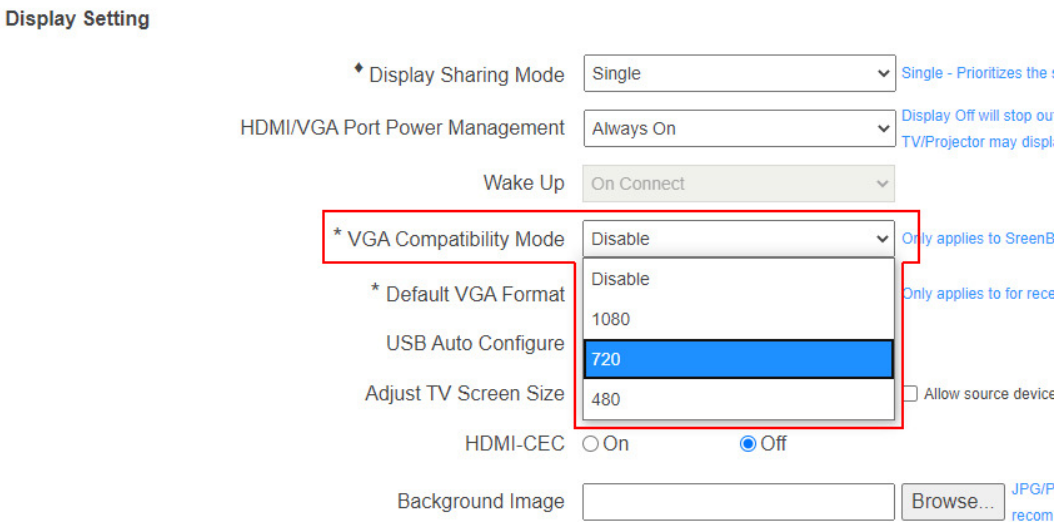
5.3.5.5 Setting up VGA Compatibility Mode

The VGA Compatibility Mode feature applies to ScreenBeam HDMI-to-VGA Adapter only.
To select a VGA compatibility mode, follow this procedure:

1. Go to the **Features** tab page by clicking the **Features** tab.

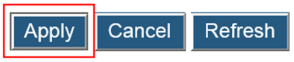


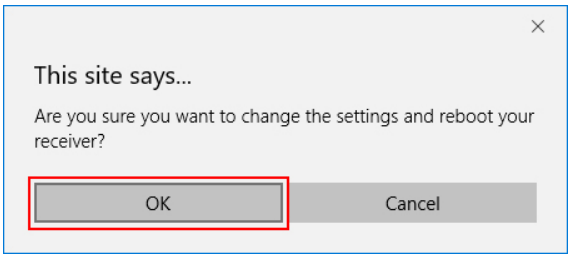
2. Go to the **Display Setting** section, and select the desired option in the **VGA Compatibility Mode** box. There are three options: **Disable**, **1080**, **720**, and **480**.
   - **Disable**: The video output is in consistence with the source device. The HDMI-to-VGA adapter will read EDID from the connected display device and decide the best resolution automatically. Make sure you connect the ScreenBeam receiver to your display device with a good quality VGA cable, so that the HDMI-to-VGA adapter can correctly read the EDID information from your display device. If the adapter can not get the EDID information from the display device, or the display device provides no EDID information, you can try the options below according to the resolution of the display device.
   - **1080**: The video output is set to 1080p or 1080i, depending on the display device.
   - **720**: The video output is set to 720p or 720i, depending on the display device.
   - **480**: The video output is set to 480p or 480i, depending on the display device.



Note: The VGA compatibility mode is disabled when HDMI-CEC is enabled.

3. Click the **Apply** button, and then click **OK** on the pop-up message box to confirm.





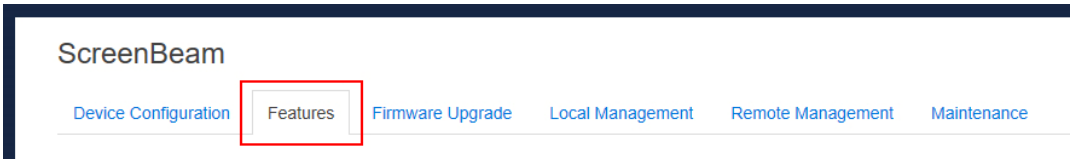
4. The receiver reboots, and new setting takes effect after the reboot.

5.3.5.6 Setting up Default VGA Format

The Default VGA Format feature applies to ScreenBeam 960's VGA output only.

To set up a default output resolution for the receiver's VGA output, follow this procedure:

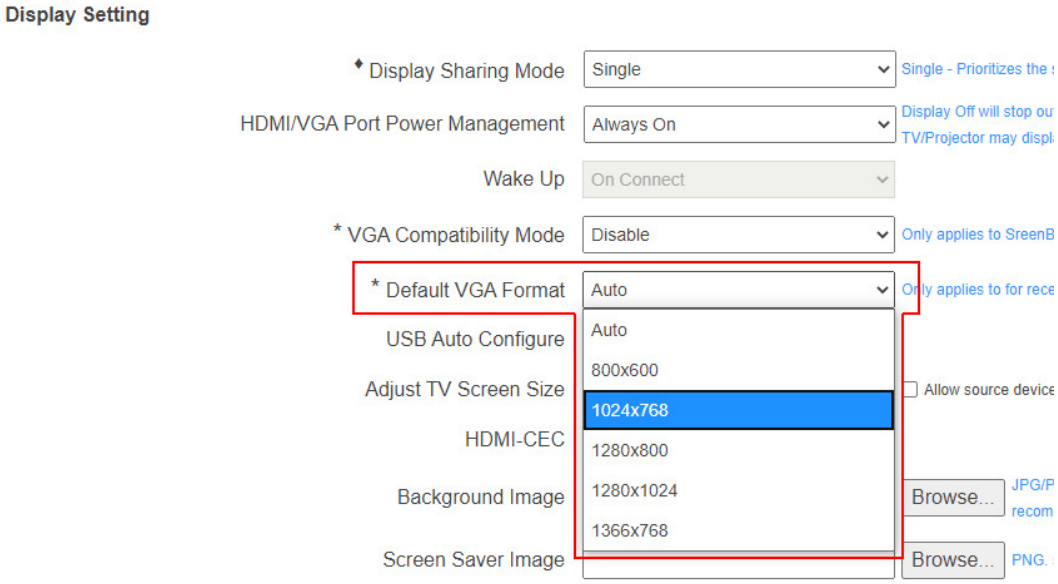
1. Go to the **Features** tab page by clicking the **Features** tab.



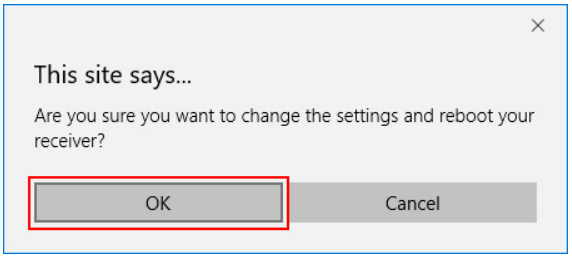
2. Go to the **Display Setting** section, and select an option from the **Default VGA Format** box. These options are available: **Auto**, and **resolution options (800×600, 1024×768, 1280×800, 1280×1024, 1366×768)**.
   - **Auto**: The receiver will read EDID from the connected display device and decide the best resolution automatically. Make sure you connect the ScreenBeam receiver to your display device with a good quality VGA cable, so that the receiver can correctly read the EDID information from your display device. If the receiver can

not get the EDID information from the display device, or the display device provides no EDID information, or you want to set a resolution that is different from the EDID, you can try the resolution options below.

- **Resolution options**: There are five resolutions available: 800×600, 1024×768, 1280×800, 1280×1024, and 1366×768. The video output will be set to the selected resolution, overwriting the EDID information.



3. Click the **Apply** button, and then click **OK** on the pop-up message box to confirm.

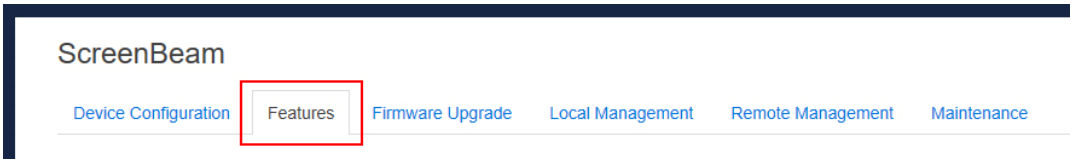


4. The receiver reboots, and new setting takes effect after the reboot.

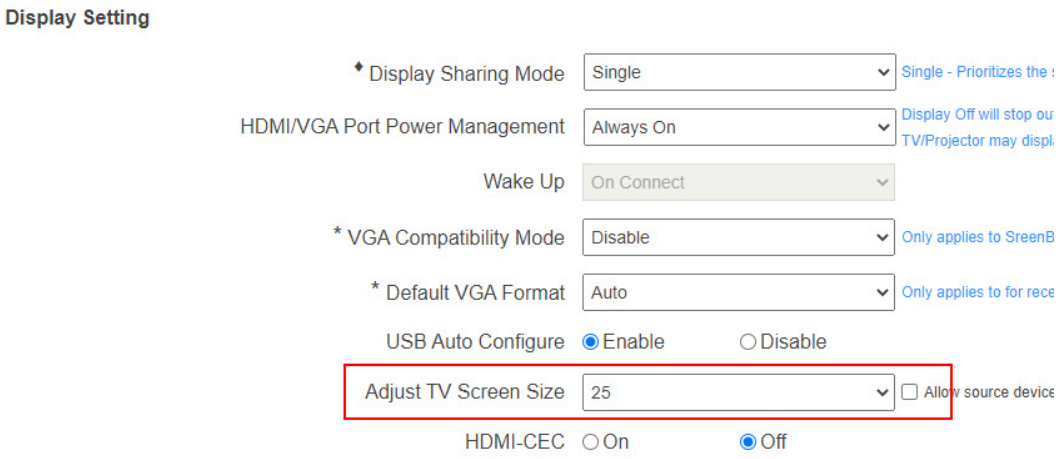
5.3.5.7 Adjusting TV Screen Size

To adjust the size of your TV screen, follow this procedure:

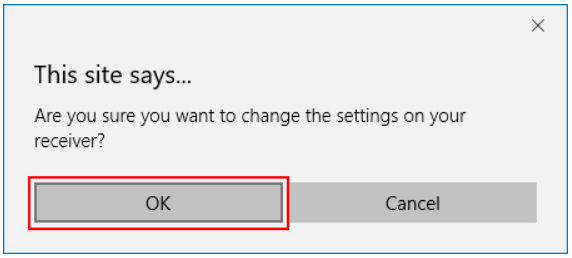
1. Go to the **Features** tab page by clicking the **Features** tab.



2. Go to the **Display Setting** section, and select a desired option in the **Adjust TV Screen Size** drop-down box.
   - The value for TV screen size ranges from 0 to 25. The larger the value is, the bigger the screen will be.
   - **Allow source device to override overscan value**: When this option is enabled (checked), the overscan value is in consistence with the setting on the source device. Otherwise, the overscan value is in consistence with the setting on the receiver.



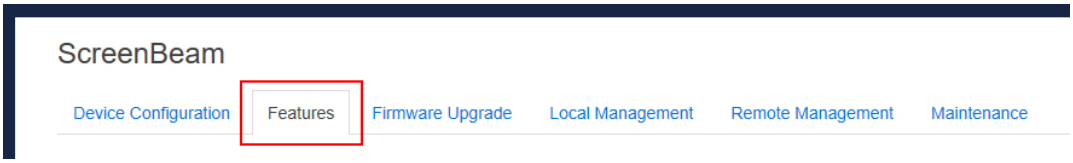
3. Click the **Apply** button, and then click **OK** on the pop-up message box to confirm.



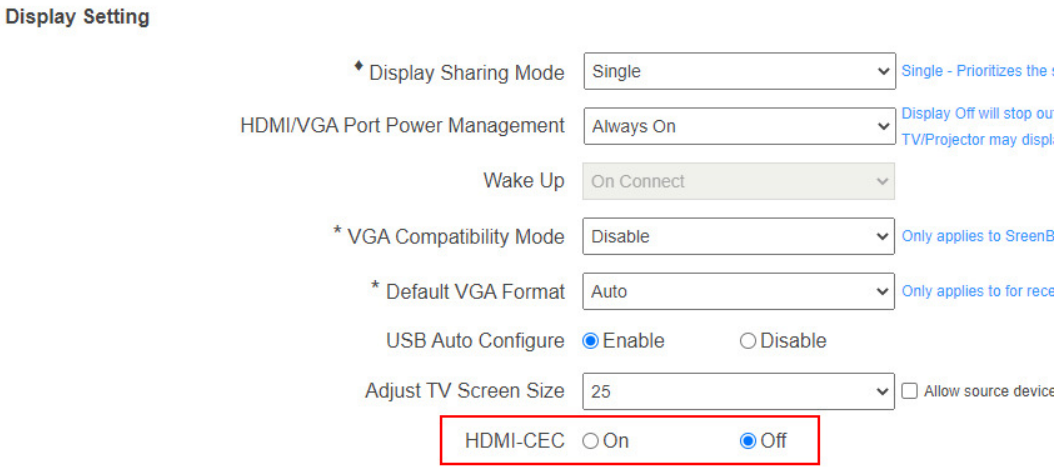
5.3.5.8 Setting up HDMI-CEC

To set up the HDMI-CEC function, follow this procedure:

1. Go to the **Features** tab page by clicking the **Features** tab.



2. Go to the **Display Setting** section, and set the **HDMI-CEC** feature to **On** or **Off**.



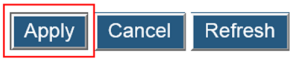
There are two options: **On**, and **Off**. After this function is enabled, the receiver can wake up the connected display device and the display device will switch to the source that the receiver connects to.

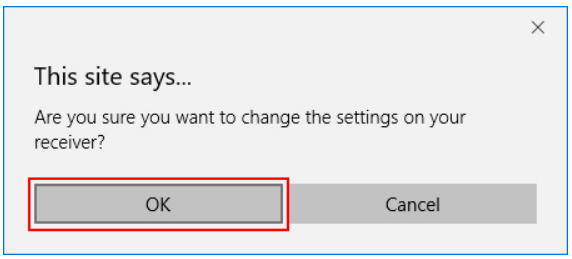
The display device will be waked up in one of the following conditions:

- when the receiver is powered on;
- when a connection to the receiver is established; and
- when a power-on receiver is connected to the display device.

Note: The display device must support HDMI-CEC, and this function is enabled.

3. Click the **Apply** button, and then click **OK** on the pop-up message box to confirm.

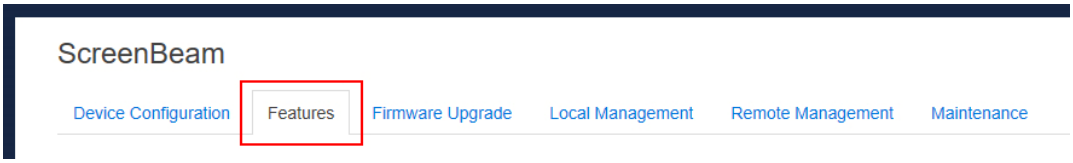




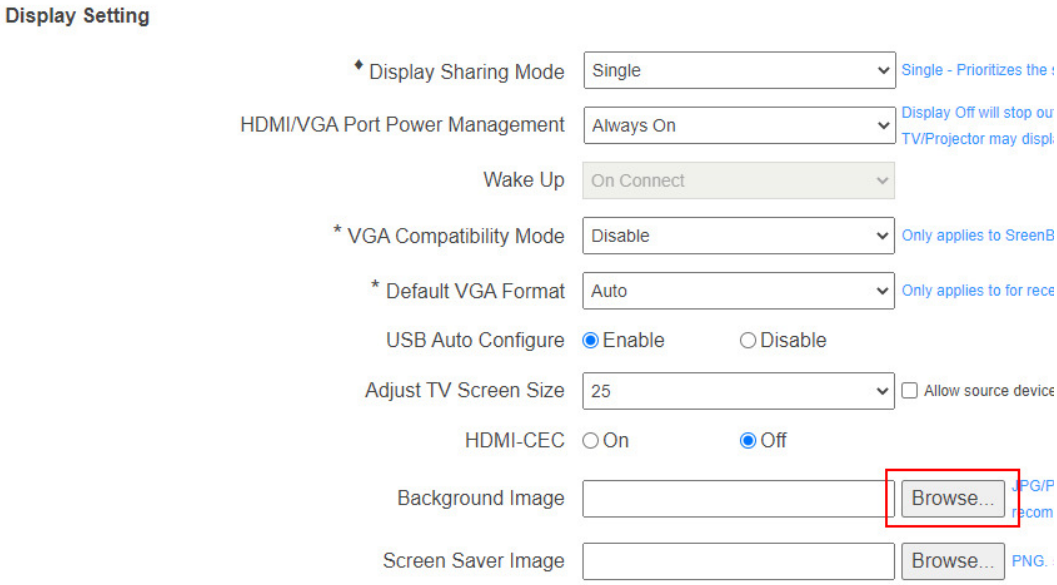
5.3.5.9 Updating the Receiver's Background Image

To update the receiver's background, follow this procedure:

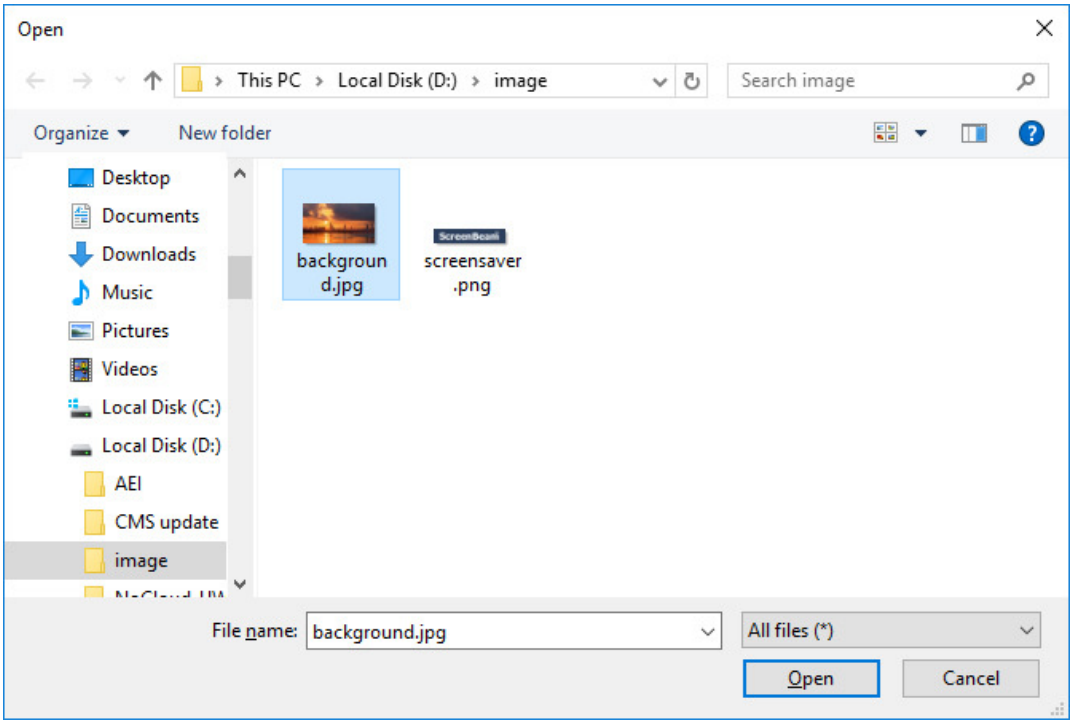
1. Go to the **Features** tab page by clicking the **Features** tab.



2. Go to the **Display Setting** section, and click the **Browse** button next to the **Background Image** box.



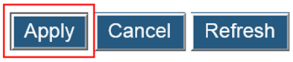
3. The **Open** window appears. Select an image for the background and click the **Open** button to confirm.



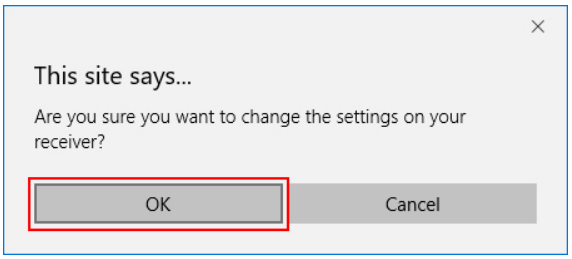
Note:

- The images must be in .png and .jpeg/.jpg formats.
- The file size must not exceed 2.5 MB.
- The best image size is 1280*720 pixels (width x height).

4. Click the **Apply** button to upload the background image to the receiver.



5. A confirmation message appears. Click **OK** to continue.

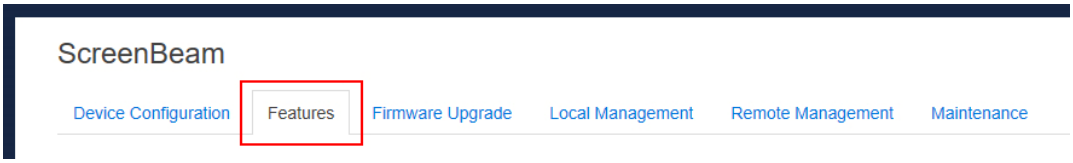


6. After a while, the background image will be updated. You can check it on the connected display.

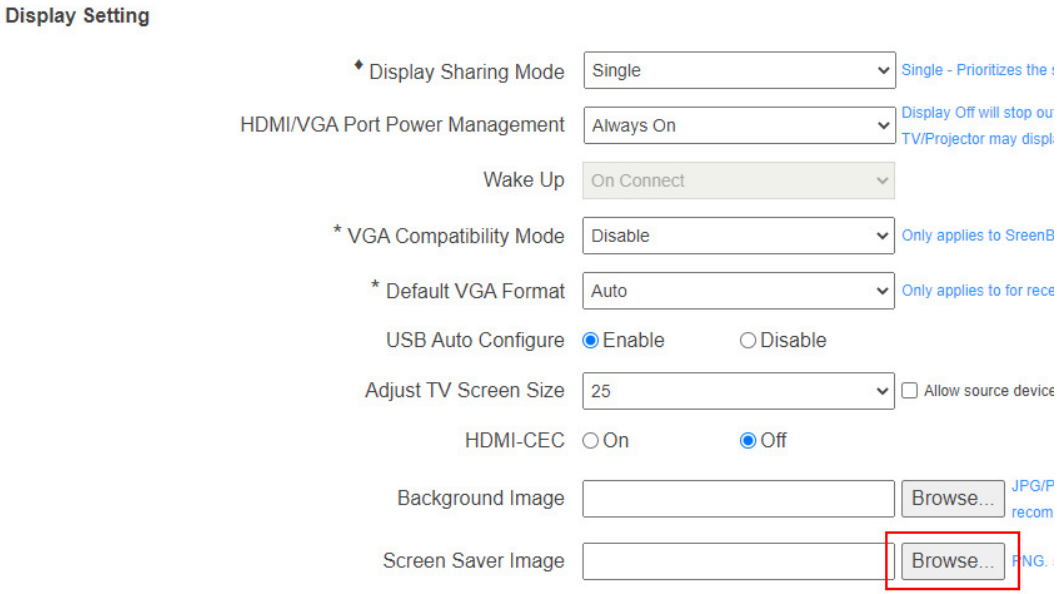
5.3.5.10 Updating the Receiver's Screen Saver Image

To update the receiver's screen saver, follow this procedure:

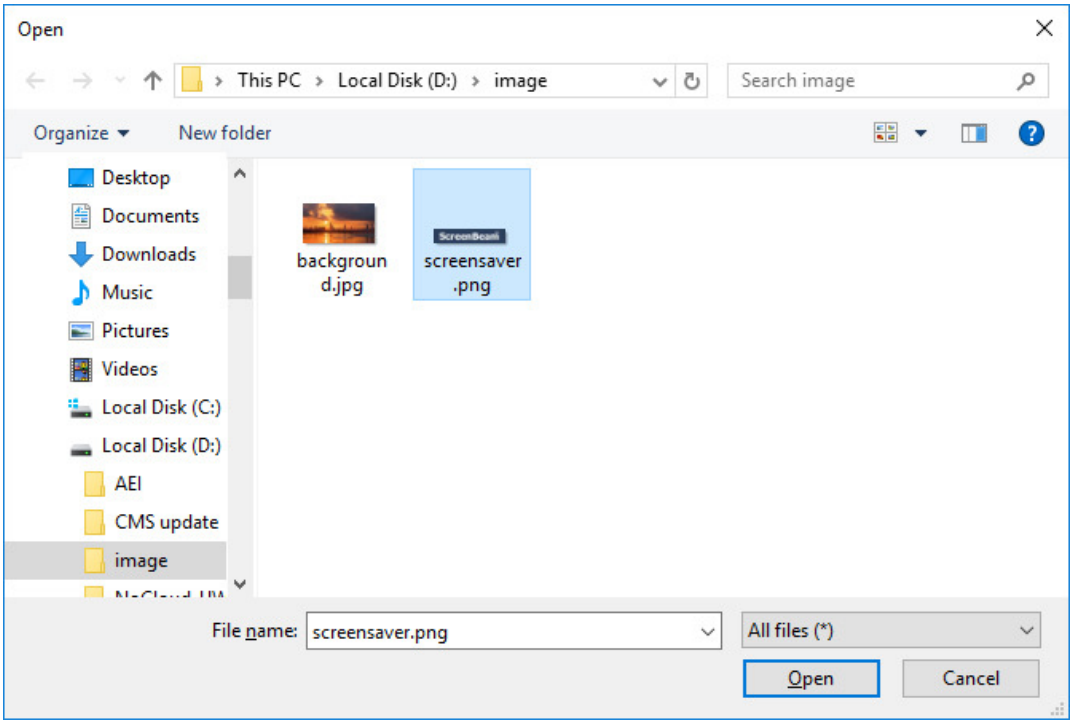
1. Go to the **Features** tab page by clicking the **Features** tab.



2. Go to the **Display Setting** section, and click the **Browse** button next to the **Screen Saver Image** box.



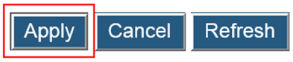
3. The **Open** window appears. Select an image for the screen saver and click the **Open** button to confirm.



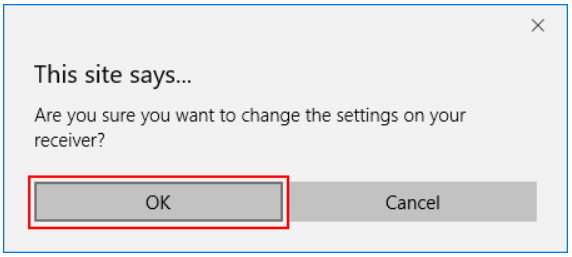
Note:

- The image must be in .png format.
- The file size must not exceed 200 KB.
- The best image size is 300*60 pixels.

4. Click the **Apply** button to upload the screen saver image to the receiver.



5. A confirmation message appears. Click **OK** to continue.

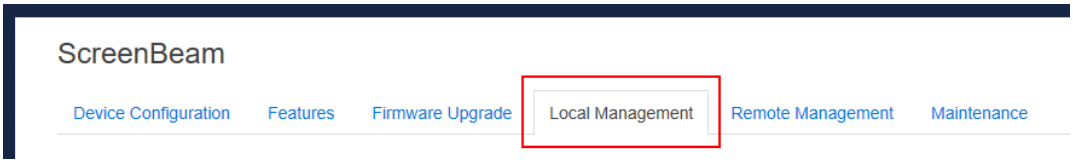


6. After a while, the screen saver image will be updated. You can check it on the connected display when the screen saver is running.

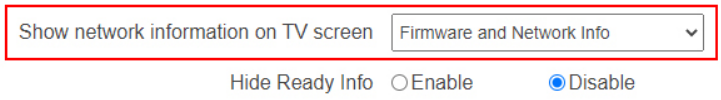
5.3.5.11 Setting up Network Information Display on TV Screen

To set up the receiver's network information display, follow this procedure:

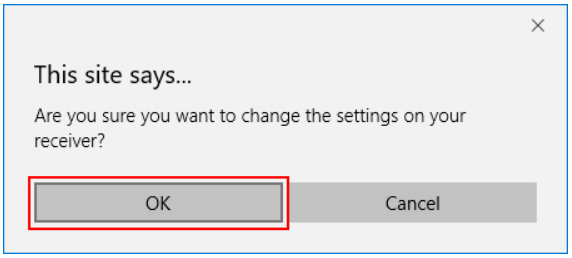
1. Go to the **Local Management** tab page by clicking the **Local Management** tab.



2. Go to the **Show network information on TV screen** line, and select a desired option from the drop-down box.
   - **Firmware and Network Info**: The receiver displays firmware info and network info on the connected display.
   - **Firmware Info**: The receiver displays firmware info only on the connected display.
   - **All Info**: The receiver displays all information (including firmware, network, Miracast P2P connection mode, channel, and CMS connection) on the connected display.



3. Click the **Apply** button, and then click **OK** on the pop-up message box to confirm.

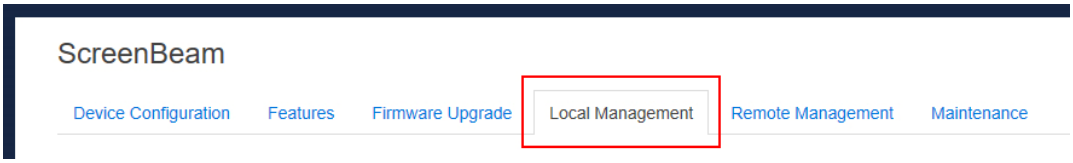


The figure below shows the RTC screen with all information displayed.

5.3.5.12 Hiding Ready to Connect Information

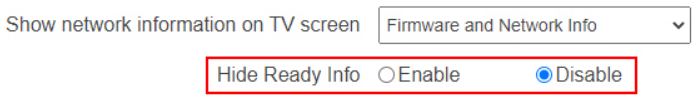
To hide or shown the receiver's **Wireless Display Ready to Connect** information, follow this procedure:

1. Go to the **Local Management** tab page by clicking the **Local Management** tab.

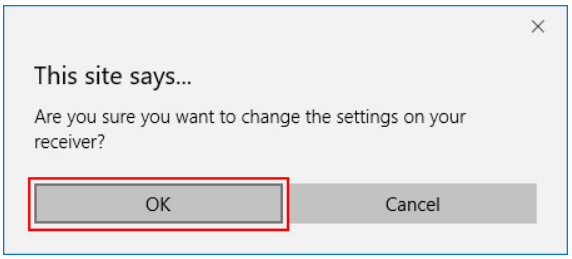


2. Set the **Hide Ready Info** feature to **Enable** or **Disable**.

- Enable: The **Wireless Display Ready to Connect** information will not show.
- Disable: The **Wireless Display Ready to Connect** information will show.



3. Click the **Apply** button, and then click **OK** on the pop-up message box to confirm.



4. The **Wireless Display Ready to Connect** information will not be displayed after this feature is enabled (Ready info is hidden).

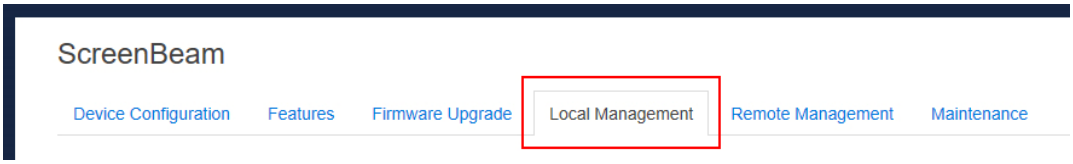
5.3.6 Local Management Settings

This section introduces local management related settings, such as local management interface access, local management communication port, network information display, receiver's SSID.

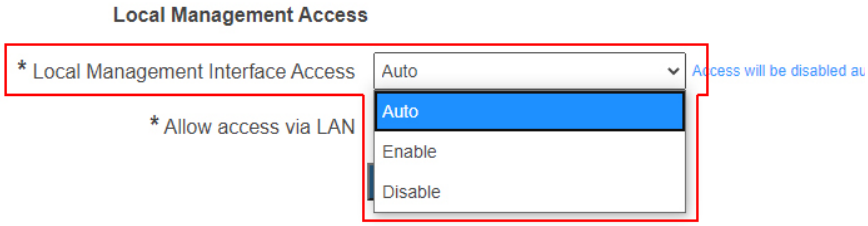
5.3.6.1 Setting up Local Management Interface Access

The receiver's Local Management Interface (LMI) is used to manage the receiver locally.
To set up the receiver's LMI access, follow this procedure:

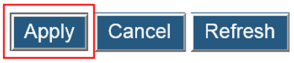
1. Go to the **Local Management** tab page by clicking the **Local Management** tab.

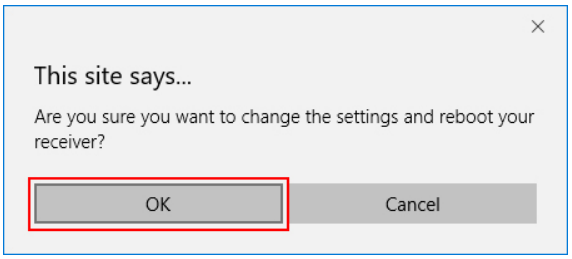


2. Go to the **Local Management Access** section, and select an option from the **Local Management Interface Access** box. There are three options available: **Auto**, **Enable**, and **Disable**.
   - **Auto**: The accessibility to the receiver's LMI depends on the availability of the CMS connection. When the receiver is connected to CMS, access to the receiver's LMI is disabled automatically, and the receiver's SSID is not displayed in NGO mode; otherwise, access is enabled.
   - **Enable**: Access to the receiver's LMI is enabled no matter the receiver is connected to CMS or not.
   - **Disable**: Access to the receiver's LMI is not allowed, and the receiver's SSID is not displayed in NGO mode.



3. Click the **Apply** button, and then click **OK** on the pop-up message box to confirm.



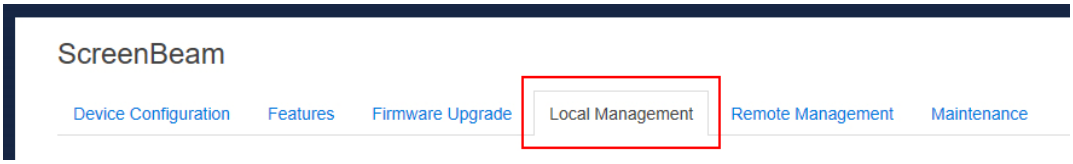


4. The receiver reboots, and new setting takes effect after the reboot.

5.3.6.2 Setting up Allow Access via LAN

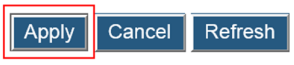
Users are allowed to access the receiver's LMI via a LAN connection.
To set up the **Allow access via LAN** feature, follow this procedure:

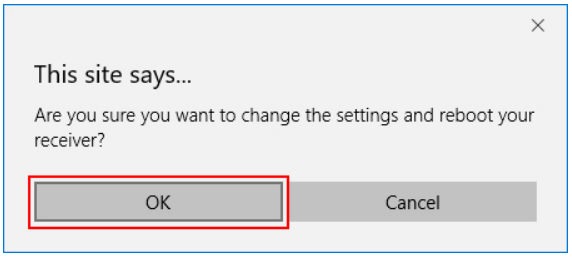
1. Go to the **Local Management** tab page by clicking the **Local Management** tab.



2. Go to the **Local Management Access** section, and select an option from the **Allow access via LAN** drop-down box.
   - **Enable**: Users are allowed to access the receiver's LMI via a LAN connection. By default, this feature is enabled.
   - **Disable**: Users are not allowed to access the receiver's LMI via any LAN connection.

3. Click the **Apply** button, and then click **OK** on the pop-up message box to confirm.





4. The receiver reboots, and new setting takes effect after the reboot.

5.3.6.3 Modifying the Receiver's Local Wi-Fi Settings

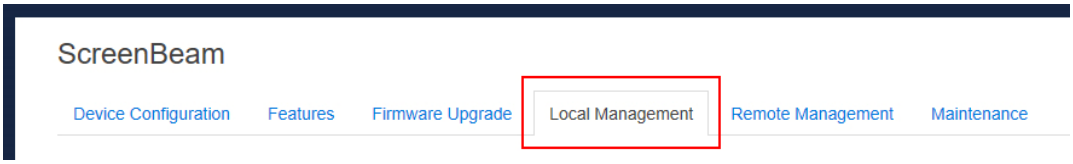
ScreenBeam 960's local Wi-Fi is used to manage the receiver only.

Note: The receiver's local Wi-Fi settings are available when the receiver is in NGO mode.

Users are allowed to set up the receiver's wireless network name (SSID) and password.

To modify the receiver's local Wi-Fi settings, follow this procedure:

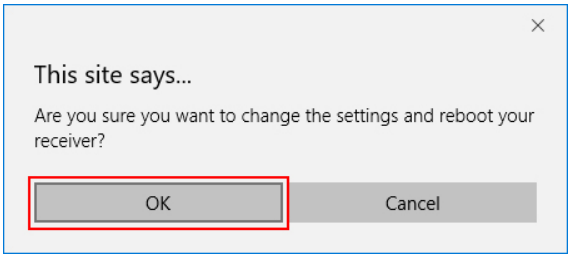
1. Go to the **Local Management** tab page by clicking the **Local Management** tab.



2. Go to the **Local Management Access** section, and type a new name in the **Wireless Network Name (SSID)** box and a new password in the **Wireless Network Password** box.

   Note: The password will display in plain text when **Show Password** is enabled.

3. Click the **Apply** button, and then click **OK** on the pop-up message box to confirm.



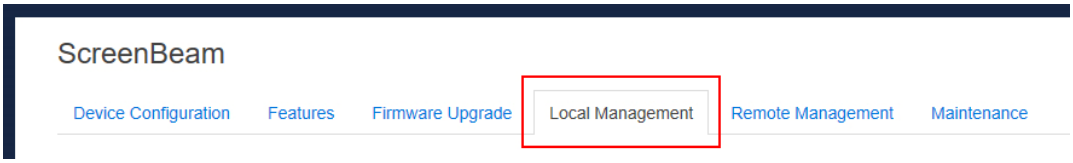
4. The receiver reboots, and the local Wi-Fi's new settings take effect after the reboot.

5.3.6.4 Setting up Broadcast Network Name

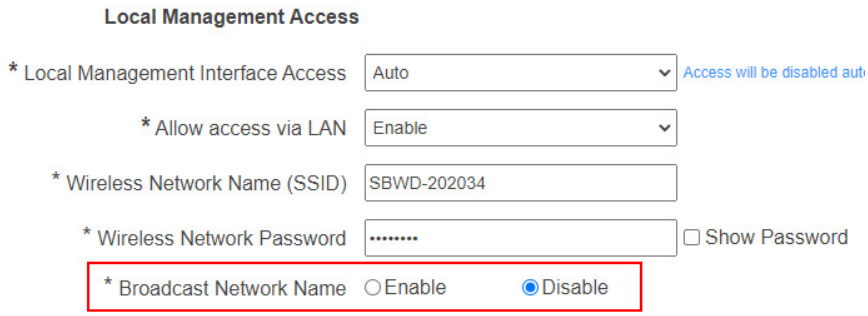
Note: This feature is available when the receiver is in NGO mode.

To set up Broadcast Network Name, follow this procedure:

1. Go to the **Local Management** tab page by clicking the **Local Management** tab.

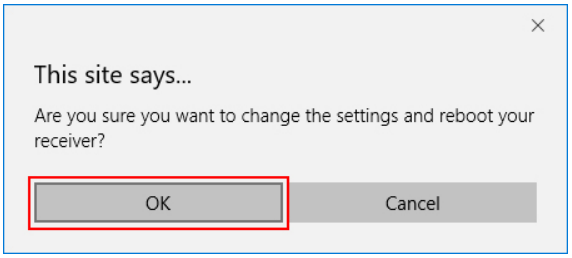


2. Go to the **Local Management Access** section, and set the **Broadcast Network Name** feature to **Enable**/**Disable**.



Note: By default, the receiver's network name (SSID) is not broadcasted. In this situation you can connect to the SSID manually. Refer to Section **5.2.3.1 When SSID Broadcast is Disabled** for detail.

3. Click the **Apply** button, and then click **OK** on the pop-up message box to confirm.

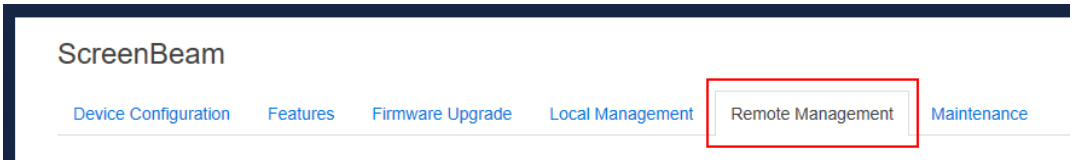


4. The receiver reboots, and new setting takes effect after the reboot.

5.3.6.5 Specifying a Local Management Communication Port for the Receiver

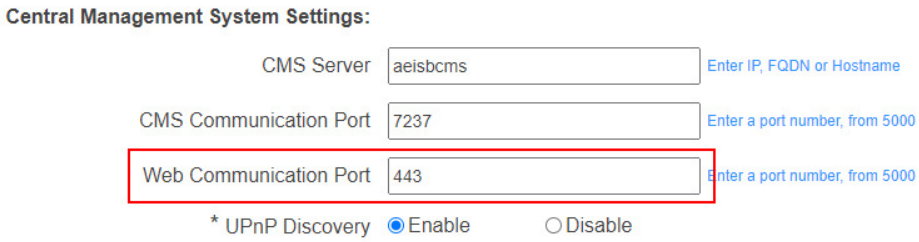
To specify a local management communication port for the receiver, follow this procedure:

1. Go to the **Remote Management** tab page by clicking the **Remote Management** tab.

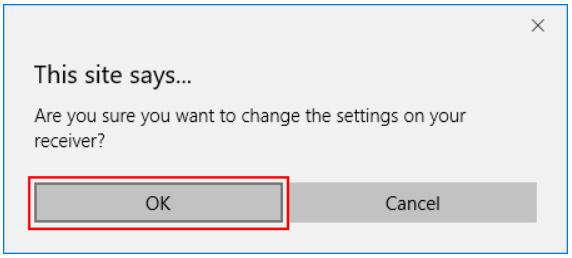


2. Go to the **Central Management System Setting** section, and define a port for **Web Communication Port**.

- **Web Communication Port**: It is the communication port for the receiver's Local Management Interface.



3. Click the **Apply** button, and then click **OK** on the pop-up message box to confirm.

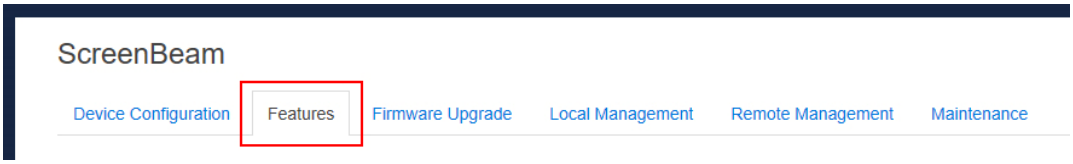


5.3.6.6 Setting up USB Auto Configuration

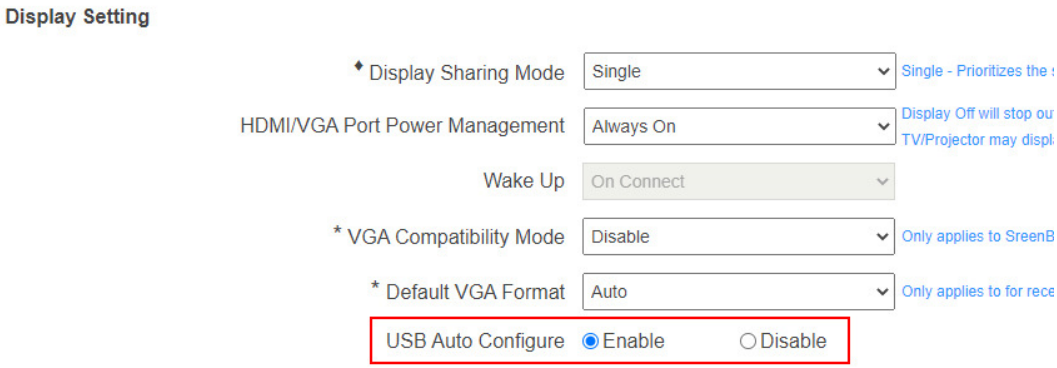
The receiver provides one USB port, which can be used to configure the receiver with a USB flash drive. Refer to the CMS user manual for detail on how to configure a receiver using a USB flash drive.

To set up the receiver's USB configuration, follow this procedure:

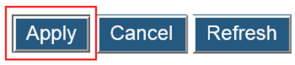
1. Go to the **Features** tab page by clicking the **Features** tab.

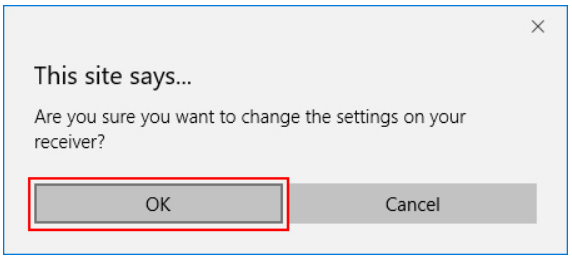


2. Go to the **Display Setting** section, and set the **USB Auto Configure** feature to **Enable** or **Disable**.
   - **Enable**: It is allowed to configure receiver with a USB flash drive.
   - **Disable**: It is not allowed to configure receiver with a USB flash drive.



3. Click the **Apply** button, and then click **OK** on the pop-up message box to confirm.





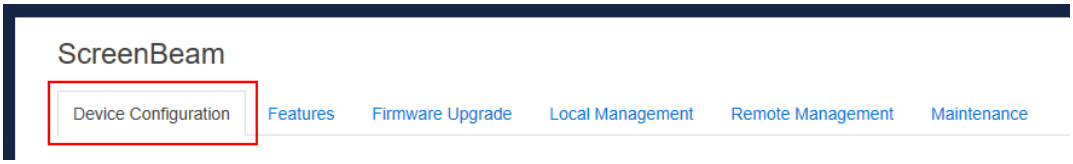
5.3.7 Remote Management Settings

This section introduces the receiver's remote management related settings, such as the receiver's host name, IP address, DNS server, CMS server, and UPnP discovery.

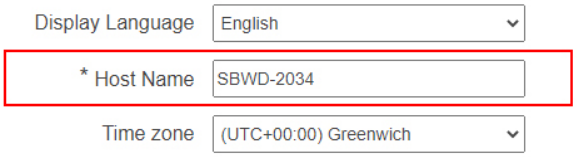
5.3.7.1 Modifying the Receiver's Host Name

The host name is used to identify the receiver in a network.
To modify your receiver's host name, follow this procedure:

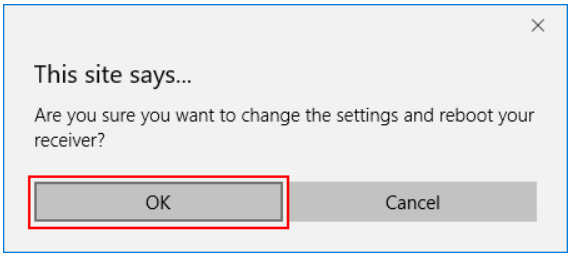
1. Go to the **Device Configuration** tab page by clicking the **Device Configuration** tab.



2. Go to the **Host name** line, and type a new host name in the **Host name** box.



3. Click the **Apply** button, and then click **OK** on the pop-up message box to confirm.

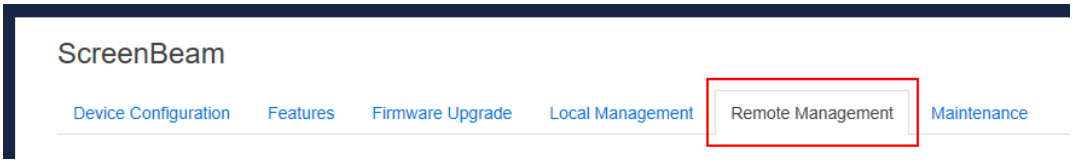


Note: The receiver's new host name takes effect after the reboot.

5.3.7.2 Setting up the Receiver's IP Address

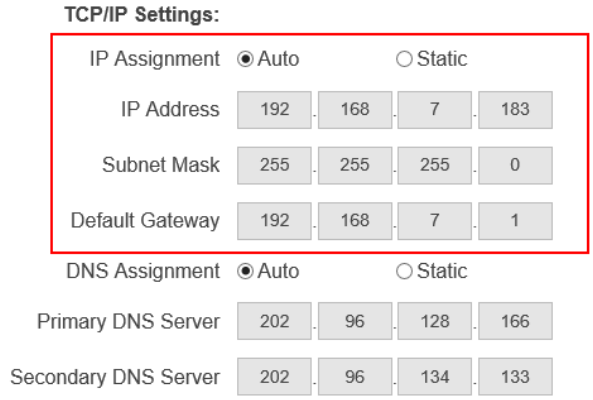
To set up the receiver's IP address, follow this procedure:

1. Go to the **Remote Management** tab page by clicking the **Remote Management** tab.

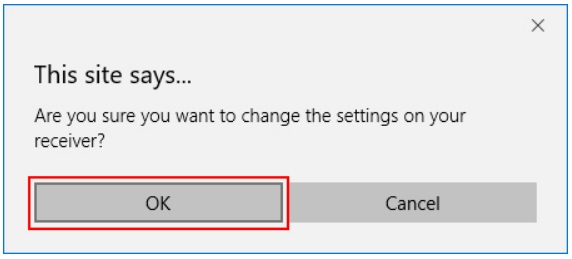


2. Go to the **TCP/IP Setting** section, and set the **IP Assignment** to **Auto** or **Static**.

- **Auto**: The receiver will be assigned an IP address by the DHCP server.
- **Static**: Users are allowed to define the IP address, subnet mask, and default gateway for the receiver. If **Static** is selected, it is required to define a DNS server as well.



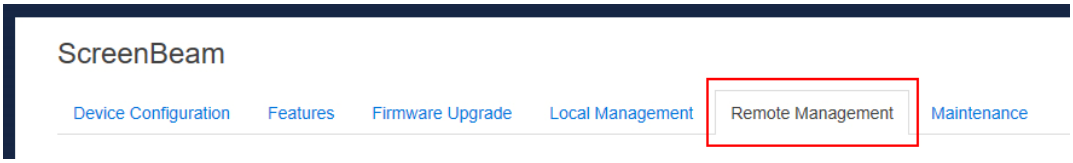
3. Click the **Apply** button, and then click **OK** on the pop-up message box to confirm.



5.3.7.3 Specifying a DNS Server for the Receiver

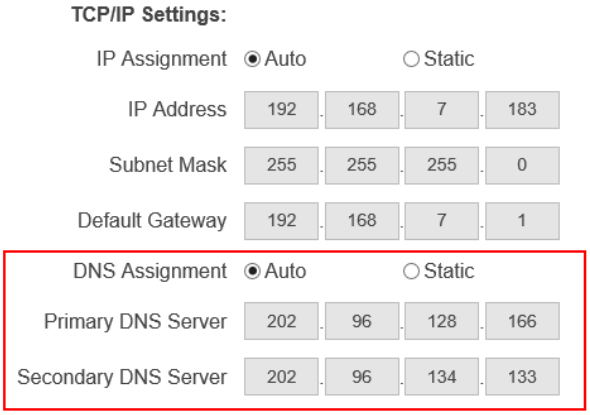
To specify a DNS server for the receiver, follow this procedure:

1. Go to the **Remote Management** tab page by clicking the **Remote Management** tab.

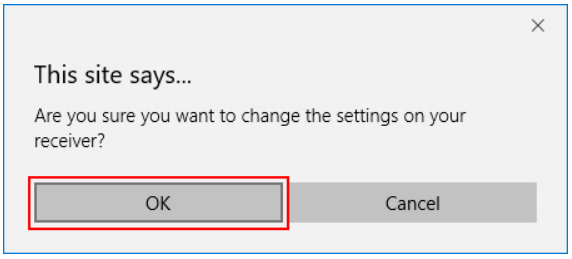


2. Go to the **TCP/IP Setting** section, and set the **DNS Assignment** to **Auto** or **Static**.

- **Auto**: The receiver will be assigned a DNS server automatically.
- **Static**: Users are allowed to define a DNS server for the receiver. When t **Static** is selected, it is required to define a DNS server.



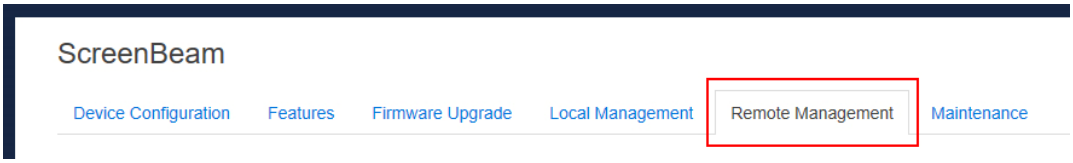
3. Click the **Apply** button, and then click **OK** on the pop-up message box to confirm.



5.3.7.4 Specifying ScreenBeam CMS for the Receiver

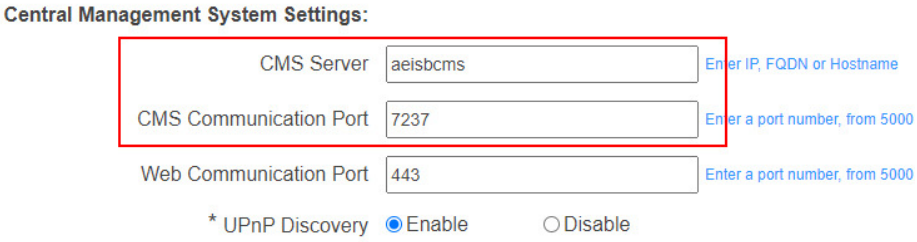
To specify a CMS for the receiver, follow this procedure:

1. Go to the **Remote Management** tab page by clicking the **Remote Management** tab.

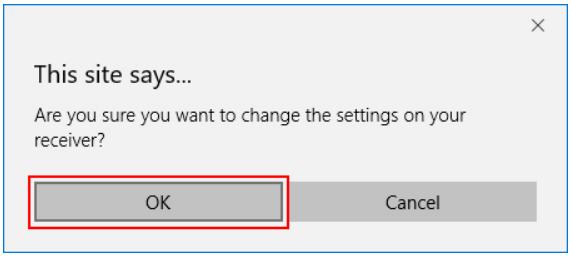


2. Go to the **Central Management System Setting** section, and define the **CMS Server** and the **CMS Communication Port**.

- **CMS Server**: It is the IP address or the FQDN/hostname/domain name/alias name (if a DNS server and a DHCP server are properly configured) of the server that hosts the ScreenBeam CMS. It supports a domain with six labels at most.
  Note: It is recommended to use DNS configuration for CMS Server .
- **CMS Communication Port**: It is the communication port of the ScreenBeam CMS.



3. Click the **Apply** button, and then click **OK** on the pop-up message box to confirm.

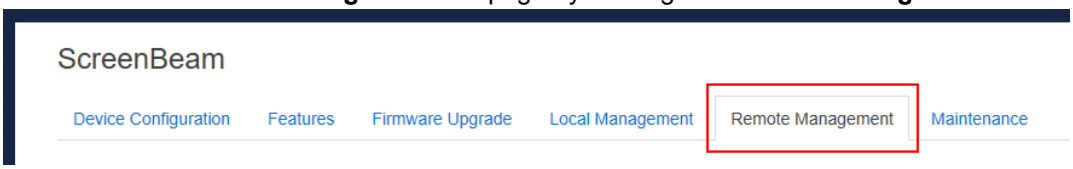


5.3.7.5 Setting up UPnP Discovery

The UPnP discovery feature is used to discover ScreenBeam 960 on the network. ScreenBeam 960 can connect to CMS automatically with the UPnP Discovery method. Refer to the CMS user manual for details on how to connect a receiver to CMS using the UPnP Discovery method.

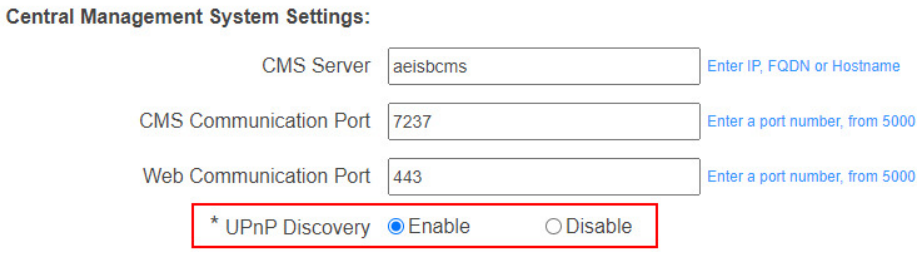
To set up UPnP Discovery for the receiver, follow this procedure:

1. Go to the **Remote Management** tab page by clicking the **Remote Management** tab.

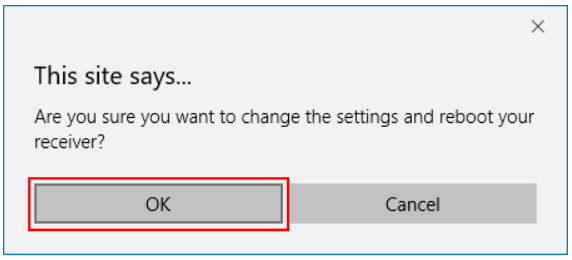


2. Go to the **Central Management System Setting** section, and set **UPnP Discovery** to **Enable** or **Disable**.

- **Enable**: The receiver is allowed to discover on the network using the UPnP protocol.
- **Disable**: The receiver is not allowed to discover on the network using the UPnP protocol.



3. Click the **Apply** button, and then click **OK** on the pop-up message box to confirm.



4. The receiver reboots, and new setting takes effect after the reboot.

5.4 Updating Firmware for the Receiver

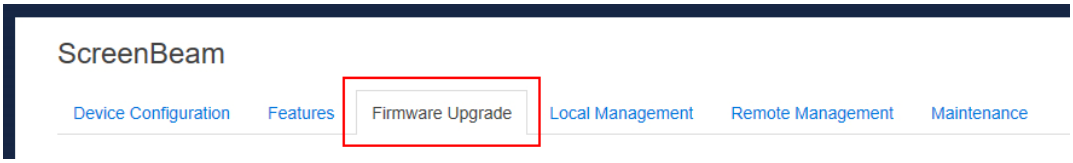
Users are allowed to update the receiver's firmware wirelessly through the LMI or locally using a USB flash drive.

5.4.1 Updating Firmware Wirelessly

Users can wirelessly upgrade firmware for the receiver through the Local Management Interface.

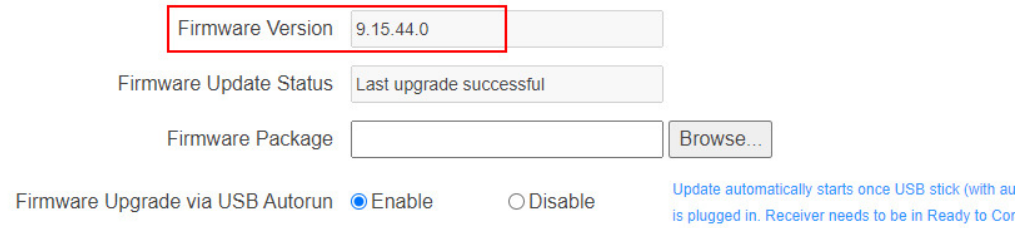
To upgrade your receiver using the receiver's LMI, follow this procedure:

1. Download the latest firmware from ScreenBeam's website: https://support.screenbeam.com.
2. Log into ScreenBeam 960's Local Management Interface, and go to the **Firmware Upgrade** tab page by clicking the **Firmware Upgrade** tab.
   Note: Refer to Section **5.2 Using Local Management on ScreenBeam** for details on how to use the receiver's Local Management Interface.

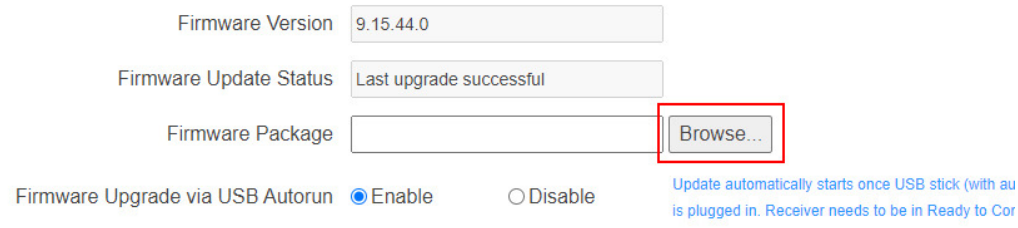


On the **Firmware Upgrade** tab page, you can check the current firmware version in the **Firmware Version** section.

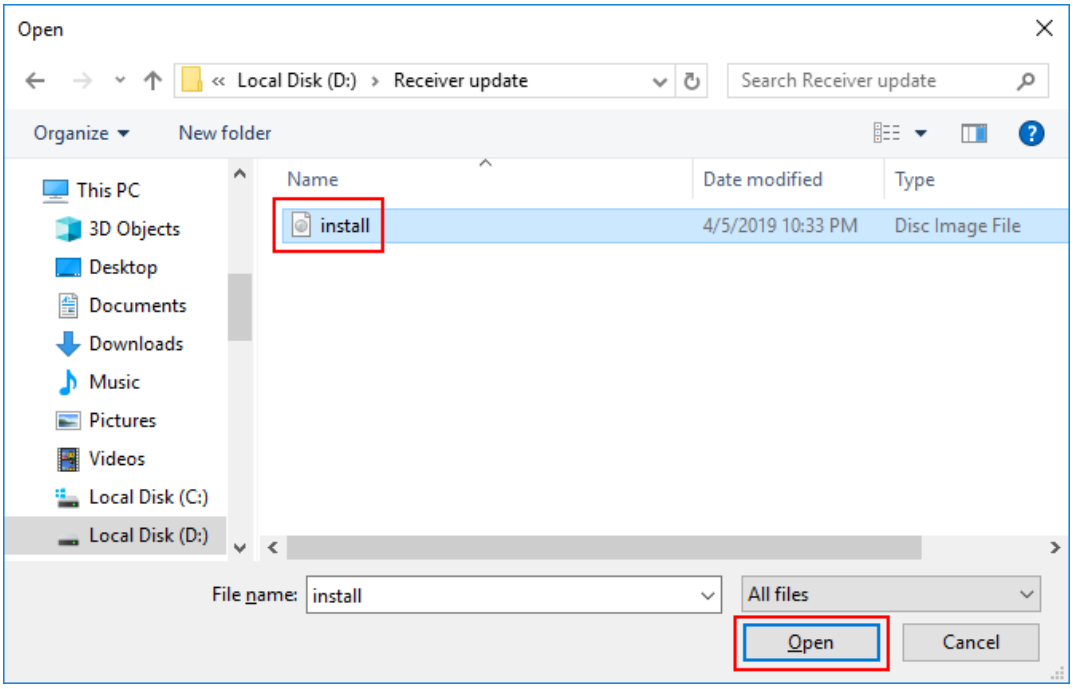
Note: You can update the receiver's firmware to a higher version only.



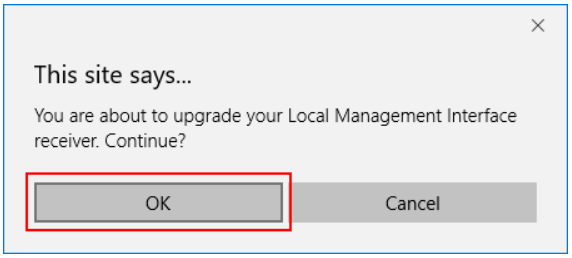
3. Click the **Browse** button next to the **Firmware Package** box to display the **Open** dialog box.



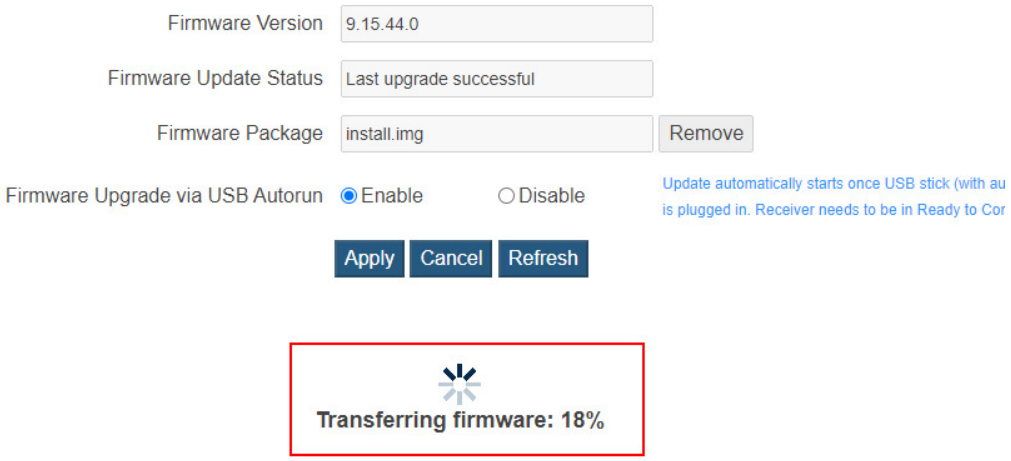
4. Navigate to the extracted firmware file folder. Select the firmware file ("**install.img**") and click the "**Open**" button to continue.



5. Click the **Apply** button, and then click **OK** on the pop-up message box to continue.



6. The web server starts transferring the firmware file to the receiver.



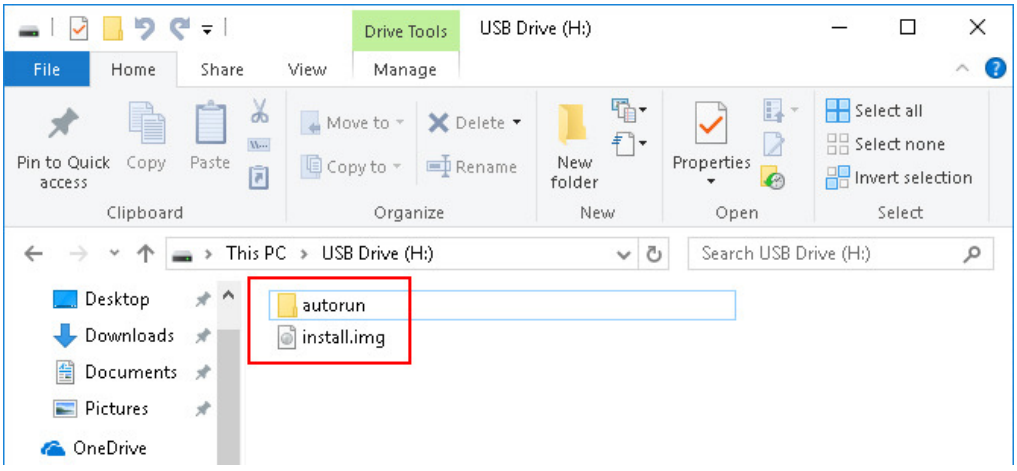
7. The receiver reboots and upgrades itself after the file is uploaded successfully. Firmware upgrade status is displayed on the connected display.
8. When the receiver returns to the **Wireless Display Ready to Connect** Screen, your receiver has been upgraded.

Warning! Do NOT power off your receiver during the upgrade process. The upgrade will take some time. Please be patient.

5.4.2 Updating Firmware Locally

To update the receiver's firmware with a USB flash drive, follow this procedure:

1. Download the latest firmware from ScreenBeam's website: https://support.screenbeam.com.
2. Extract the downloaded file and copy the "**install.img**" file and the "**autorun**" file folder to the root directory of a USB flash drive.

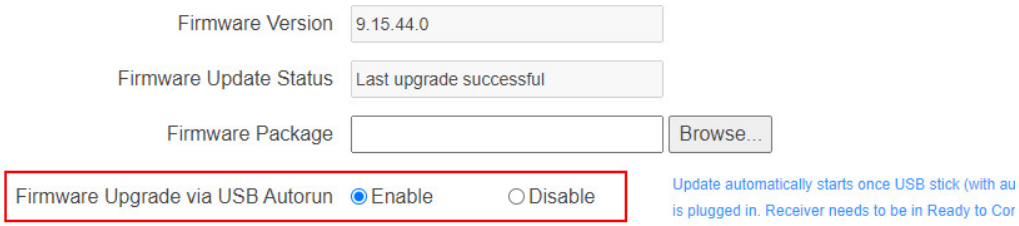


Note:

- Do not use a portable hard drive. You should use a FAT/FAT32 formatted USB flash drive only.

- Do not make any change to the extracted files.

3. Make sure the "**Wireless Display Ready To connect**" screen appears on your TV.
   Note: You must disconnect your device (laptop, ultrabook, smartphone or tablet) from the receiver before upgrading your receiver.
4. Ensure that the **Firmware Upgrade via USB Autorun** feature is set to **Enable** on **LMI** > **Firmware Upgrade**.



5. Plug the USB flash drive into the USB port on the receiver.
6. The receiver starts to update its firmware automatically. Firmware upgrade status messages appear on your TV.
   Warning! Do not power off the receiver or remove the USB flash drive while the upgrade is in progress. Otherwise, firmware upgrade fails.
7. The receiver reboots after firmware update completes.
8. You may now remove the USB flash drive when you see the "**Wireless Display Ready to connect**" screen again.

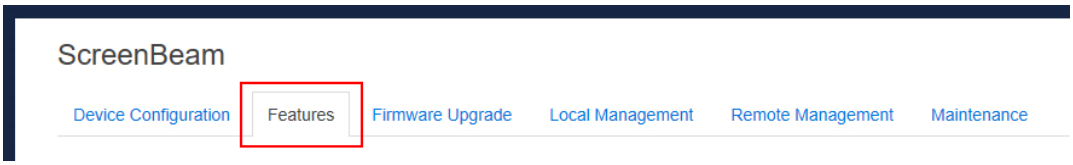
5.5 Receiver Maintenance

5.5.1 Setting up Receiver Auto Reboot

After a long period of continuous running, the receiver may not react as responsively as it should be. We can restart the device to restore its responsiveness.

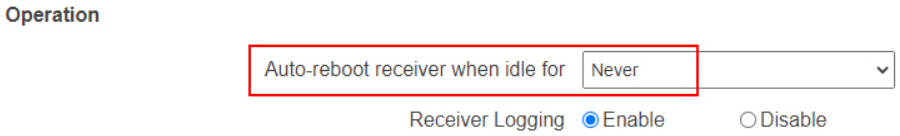
To set the receiver to reboot automatically, follow this procedure:

1. Go to the **Features** tab page by clicking the **Features** tab.

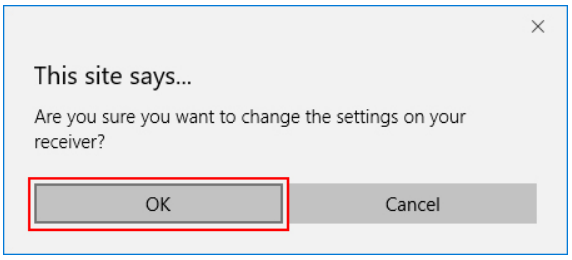


2. Go to the **Operation** section, and select an option from the **Auto-reboot receiver when idle for** box.

- **Never** indicates that the receiver will not restart automatically. This is the default setting.
- **xx hour(s)** indicates that the receiver will restart automatically after the receiver is idle for xx hour(s).



3. Click the **Apply** button, and then click **OK** on the pop-up message box to confirm.

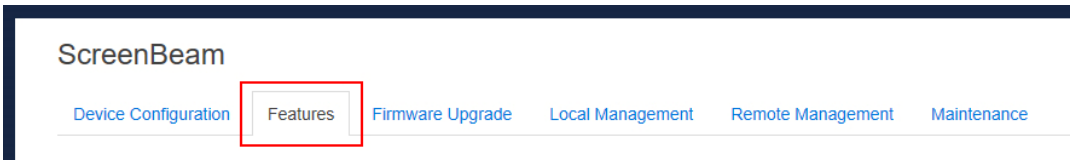


5.5.2 Setting up Receiver Logging

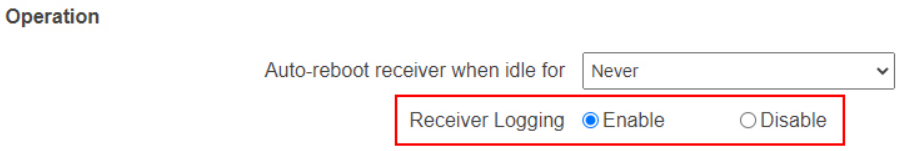
ScreenBeam receiver can save events in logs, and these logs can be retrieved by the receiver's LMI or ScreenBeam CMS. Refer to the ScreenBeam CMS user guide for detail.

To set up the receiver's logging, follow this procedure:

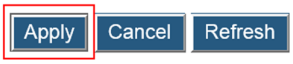
1. Log into the receiver's LMI, and go to the **Features** tab page.

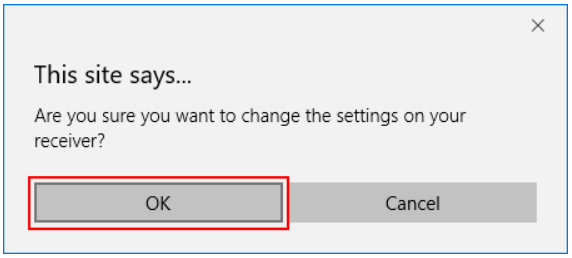


2. Go to the **Operation** section, and set **Receiver Logging** to **Enable** or **Disable**.
   - **Enable**: The receiver will record logs when there are events happen.
   - **Disable**: The receiver will NOT record any events.



3. Click the **Apply** button, and then click **OK** on the pop-up message box to confirm.

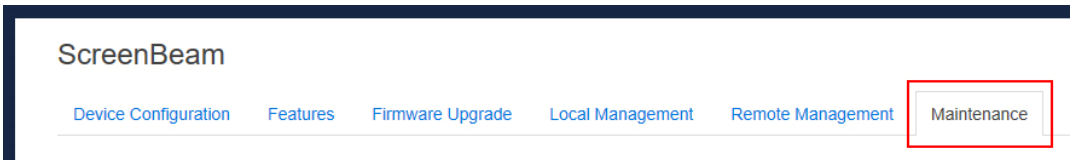




5.5.3 Exporting Receiver Log with LMI

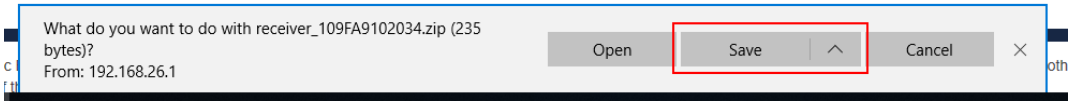
To export logs from the receiver, follow this procedure:

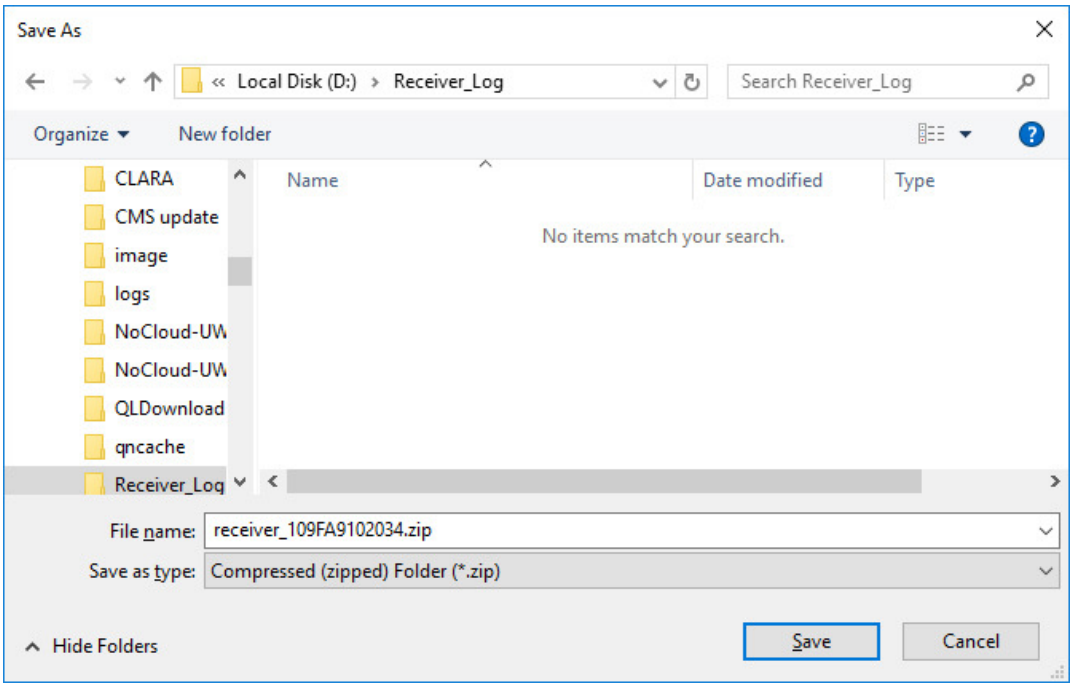
1. Ensure receiver logging is enabled. Refer to Section **5.5.2 Setting up Receiver Logging** for details.
2. Log into the receiver's LMI, and go to the **Maintenance** tab page.



3. Go to the **Export Logs** section, and click the **Export** button next to **Export Receiver Logs**.

4. The file download dialog box appears. Click **Save** or **Save as** to save the receiver log.





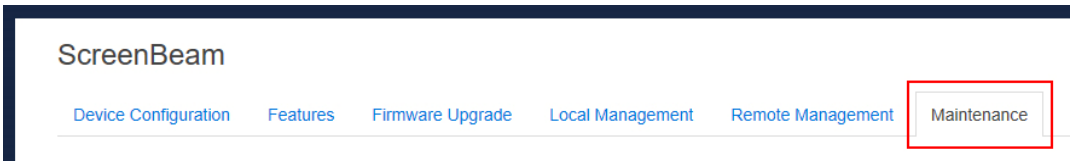
5.5.4 Rebooting the Receiver

To reboot your receiver, remove the power adapter from the power outlet, wait 5 seconds and then plug it in.

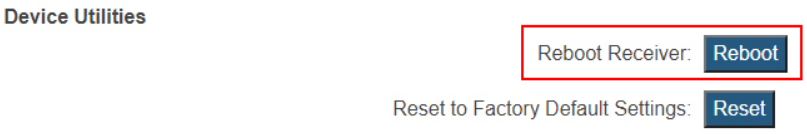
If you can't access the receiver locally, you can reboot the receiver through the receiver's LMI.

To reboot the receiver with LMI, follow this procedure:

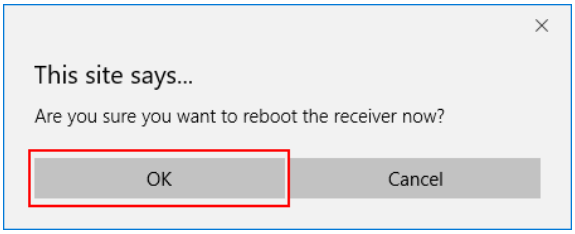
1. Log into the receiver's LMI, and go to the **Maintenance** tab page.



2. Click the **Yes** button next to "**Reboot Receiver**".



3. Click **OK** on the pop-up message box to confirm.



5.5.5 Resetting the Receiver to Default

To reset the receiver to default settings, follow this procedure:

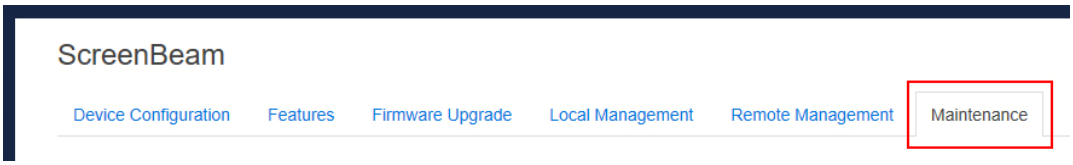
1. Power on the receiver, and wait until the "**Wireless Display Ready to Connect**" screen appears.
2. Hold down the receiver's "**Reset**" button with a pin.
3. When the "**Resetting to factory defaults**" screen appears on the HDTV, release the "**Reset**" button.

The receiver reboots, and it will be running with its default settings.

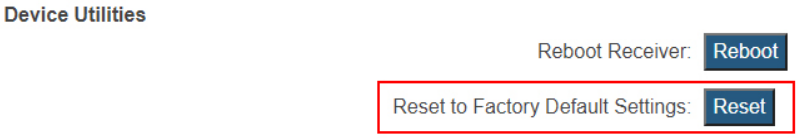
Note: All settings will be reset to defaults.

If you can't access the receiver locally, you can reset the receiver through the receiver's LMI. Follow the procedure below:

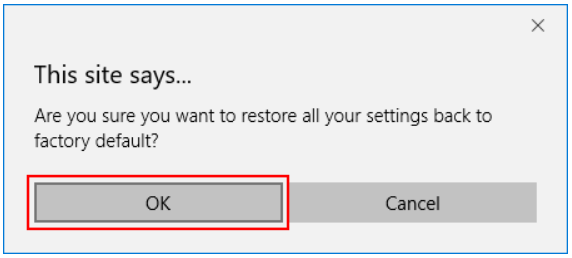
1. Log into the receiver's LMI, and go to the **Maintenance** tab page.



2. Click the **Yes** button next to "**Reset Settings to Factory**".



3. Click **OK** on the pop-up message box to confirm.



4. The receiver reboots, and the receiver is reset to factory defaults after the reboot.

When you reset your receiver through the LMI, the following settings will be retained:

● CMS Server IP address ● CMS communication port ● Receiver IP setting (DHCP or Static IP) ● Receiver IP address ● Receiver Subnet Mask ● Receiver Gateway ● Receiver DNS setting (Dynamic or Static)	● Primary DNS ● Secondary DNS ● Host Name ● Wireless connection settings ● Timezone ● Daylight save time

Appendix I Troubleshooting and FAQs

This chapter describes some problems you may encounter using ScreenBeam 960, and possible solutions to those problems. Also included are frequently asked questions (FAQs), and answers to those questions.

Troubleshooting

I tried to access the URL (https://192.168.51.1), but failed. Why?
Connect to the receiver's SSID, and then access the URL again. This is available in NGO mode only.

I'm not seeing anything on my HDTV screen after powering on the Receiver.
Check the cable connections and make sure the TV Input setting is the same as the HDMI port to which the Receiver is connected.

After upgrading from Windows 8 to Windows 8.1, I can no longer connect to ScreenBeam 960 receiver or I'm having problems with my connection.
Make sure you've installed the latest updates with the **Windows Update** application.

I'm seeing artifacts and experiencing a choppy, juddering video stream.
In noisy Wi-Fi environments, audio and video freezes may be observed while playing video content, and longer than expected latency may occur when streaming. To ensure you have an optimal Wi-Fi environment:

- Disconnect and reconnect the Receiver.
- If the source device is connected to a wireless router, restart the router, or change the wireless channel on your wireless router/AP. Refer to the wireless router's user manual for more information.
- Set the receiver to work in AGO mode and select a clean channel.

I'm seeing choppiness and brief pauses while watching Internet video on my Miracast™ device.
Wireless interference may cause Internet video playback to be choppy. If this occurs, try the following:

- Disconnect the device from the Receiver. Make sure the Internet connection is good and that the video playing on the phone is smooth.
- Clear the YouTube cache and try playing the video again.

I'm seeing choppiness and brief pauses while watching local video on my Miracast™ device.

Wireless interference may cause the video playback to be choppy. If this occurs, try the following:

- Make sure you are in the same room as the Receiver is.
- Set the media player to use the H/W decoder, if available.
- Reboot the Miracast™ device and Receiver and connect again.
- Avoid moving the Miracast™ device around too much.
- Change the wireless channel on your wireless router/access point, or on your receiver.

My Windows 8.1 displays to the TV but the four edges are cut off (overscan).

This is expected with some system's supported display resolution. You can adjust Windows screen resolution settings to fit the PC's screen on your TV display.

I encounter connection failure with ScreenBeam 960 and my device can't connect to it any more.

- Reboot the ScreenBeam 960 and try connection again. Or, reboot your device (laptop/Ultrabook/tablet/smartphone) and try connection again.
- Reboot both the ScreenBeam 960 and your device and try connection again.
- If you are using a Windows 8.1 operating system, go to **Change PC settings** > **PC and Devices** > **Devices** > **Projectors**, remove the profile of the ScreenBeam 960 from your device (PC/laptop/Ultrabook), and try connection again.
- If you are using a Windows 10 operating system, go to **Settings** > **Devices** > **Connected Devices** > **Projectors**, remove the profile of the ScreenBeam 960 from your device (PC/laptop/Ultrabook), and try connection again.

I can't connect to the Receiver with ScreenBeam Configuration Utility on my device. The Utility can't find the Receiver.

ScreenBeam 960 is not compatible with ScreenBeam Configuration Utility. To configure or upgrade the receiver, you should use the receiver's Local Management Interface or ScreenBeam Central Management System.

When I connect the source device to a wireless network (router/AP), why ScreenBeam 960 disconnects automatically?

The source device's communication channel has changed when you connect your device to a wireless network (router/AP) in the situation that the source device is connected to ScreenBeam 960. As a result, ScreenBeam 960 disconnects from the source device.

The solution is that you should connect your device to the wireless network before connecting it to ScreenBeam 960. In this way, ScreenBeam 960 works on the same channel with the source device and the wireless network, and no connection interruption will occur.

FAQs

Can I view protected content if ScreenBeam 960 receiver is connected a display through the VGA port?

No. The VGA port does not support playback of protected content such as blue-ray.

Can my device connect to ScreenBeam 960?

To connect to ScreenBeam 960, your device must be Wi-Fi Miracast-capable.

For a system to support wireless display, it should have most if not all Intel chipsets (Processor, Graphic Card, and Wireless chipset).

- **Processor**. One of the following processors is required:
  - 2nd generation Intel Core i3/i5/i7 Mobile Processor
  - 3rd Generation Intel Core i3/i5/i7 Mobile and Desktop Processor
  - 4th Generation Intel Core i3/i5/i7 Mobile and Desktop Processor
  - Intel Pentium N3510 Processor
  - Intel Celeron N2805 Processor
  - Intel Celeron N2810 Processor
  - Intel Celeron N2910 Processor
  - Intel Atom Z3740 Processor
  - Intel Atom Z3740D Processor
  - Intel Atom Z3770 Processor
  - Intel Atom Z3770D Processor
- **Graphics**. One of the following graphics solutions is required:
  - Intel Iris Pro Graphics 5200
  - Intel Iris Graphics 5100
  - Intel HD Graphics 5000
  - Intel HD Graphics 4600
  - Intel HD Graphics 4400
  - Intel HD Graphics 4200
  - Intel HD Graphics 4000
  - Intel HD Graphics 3000 (mobile)
  - Intel HD Graphics 2500
  - Intel HD Graphics 2000 (mobile)
- **Wireless Adapter**. One of the following wireless adapters is required:
  - Intel Centrino Wireless-N 1000, 1030, 2200, or 2230
  - Intel Centrino Wireless-N 2200 for Desktop
  - Intel Centrino Advanced-N 6200, 6205, 6230, or 6235
  - Intel Centrino Advanced-N 6205 for Desktop
  - Intel Centrino Wireless-N + WiMAX 6150
  - Intel Centrino Advanced-N + WiMAX 6250
  - Intel Centrino Ultimate-N 6300
  - Intel Dual Band Wireless-N 7260

- Intel Dual Band Wireless-AC 7260
- Intel Dual Band Wireless-AC 7260 for Desktop
- Intel Dual Band Wireless-AC 3160
- Intel Wireless-N 7260
- Broadcom BCM43228
- Broadcom BCM43241
- Broadcom BCM4352

- **Operating System**. One of the following operating systems is required:
  - Microsoft Windows 7/8 (with ScreenBeam USB Transmitter and ScreenBeam wireless display software)
  - Microsoft Windows 8.1
  - Microsoft Windows 10
  - macOS X 10.10 (and later)
  - iOS 9 (and later)
- System requirements for Wi-Fi Miracast™
  - Android 4.2
  - Windows 8.1/10

How can I tell if my device supports Wi-Fi Miracast?

Look for one of the following Miracast applications on your device. Only some application names are listed below. Different manufacturers may have different names for the Miracast apps on their products. But, they should indicate similar meaning.

- Wireless display
- Wireless mirroring
- Screen mirroring
- AllShareCast (Samsung devices only)
- Cast screen

Visit ScreenBeam 960 compatibility page for the recommended Miracast devices.

Do I need to install drivers/apps to use the ScreenBeam 960 Receiver?

- For **Windows 7/8**, you need to install ScreenBeam USB Transmitter and ScreenBeam wireless display software.
- For **Windows 8.1/10**, you only need to install the latest Windows updates.
- For **Android 4.2** or higher, no app is required.
  Note: Your device must be Wi-Fi Miracast™-capable.

How can I improve my video/audio performance?

You can try the following methods to improve the ScreenBeam 960's video/audio performance:

- Place your device closer to the Receiver.
- Connect your device to a wireless network that is using a cleaner wireless channel or change the wireless channel on the current wireless network, and then connect the device to the Receiver.
- Turn off the Wi-Fi devices that are not in use currently.

What wireless signal range can I expect with the Receiver?

The Receiver is designed to be used in the same room with the source device. For best performance, the source device should be placed within 20 meters to the Receiver.

How can I upgrade the Receiver's firmware?

You can upgrade the receiver's firmware by using the Local Management Interface, a USB flash drive, or ScreenBeam Central Management System.

How do I configure the receiver's general settings, such as changing language, rename the receiver, enable/disable screen saver, and idling time for screen saver?

You can configure the receiver's general settings by using the Local Management Interface or ScreenBeam Central Management System.

How can I adjust the display to fit properly to my TV screen?

You can adjust the display by using the receiver's Local Management Interface or ScreenBeam Central Management System.

- Log into the receiver's Local Management Interface, and adjust screen size in the **Display Setting** section on the **Features** page.
- In the ScreenBeam Central Management System, double click the receiver to open the receiver configuration page, and then adjust the TV screen size in the **Features** section.

How to set the ScreenBeam video output to fit a display with aspect ratio other than 16:9?

- ScreenBeam receiver's HDMI output supports 16:9 resolutions only. So if we connect ScreenBeam directly to a display device via HDMI, it's no way to get an aspect ratio other than 16:9.
- To output an aspect ratio other than 16:9, we need to use an HDMI-to-VGA adapter (model number YZ-050) or the receiver' VGA output. The HDMI-to-VGA adapter supports the following resolutions: 640*480, 800*600, 1024*768, 1280*720, 1280*768, 1280*800, 1280*960, 1360*768, 1366*768, and 1920*1080, and the receiver' VGA output supports the following resolutions: 640*480, 800*600, 1024*768, 1280*800, 1366*768, 1280*1024.
- The display device must provide EDID information. Otherwise, ScreenBeam outputs the 1280*720 resolution only when using the HDMI-to-VGA adapter (YZ-050), or outputs the 1024*768 resolution when using the receiver' VGA output.
- The VGA cable must support I2S (has 3+6, or 3+9 lines).
- Set the resolution to the desired one on the source device. Make sure the resolution is supported by the source device, the adapter, and the display device. Otherwise, the display is stretched or has black edges.
- If you are using the HDMI-to-VGA adapter (YZ-050), log into the receiver's local management console, go to Features > Display Setting > VGA Compatibility Mode, and properly set up the VGA Compatibility Mode feature.
- If you are using the receiver' VGA output, log into the receiver's local management

console, go to Features > Display Setting > Default VGA Format, and properly set up the Default VGA Format feature.

Can I extend my Windows desktop to the HDTV or Projector from my Miracast device?

Yes. After the connection to ScreenBeam 960 receiver is established, by default you should see the laptop screen mirrored to the HDTV or Projector.

To extend your Windows desktop to an HDTV or a Projector, press the Windows key and P key together, and select the "**Duplicate**", "**Extend**" or "**Second screen only**" mode.

What is Wi-Fi Miracast™?

Wi-Fi Certified Miracast™ is a groundbreaking solution for seamlessly displaying video between devices, without cables or a network connection. Users can view pictures from a smartphone on a big screen television, share a laptop screen with the conference room projector in real-time, and watch live programs from a home cable box on a tablet. Miracast™ connections are formed using Wi-Fi Certified Wi-Fi Direct™, so access to a Wi-Fi® network is not needed–the ability to connect is inside Miracast™-certified devices.

What is Wi-Fi Direct and can I connect to the Receiver using Wi-Fi Direct?

Wi-Fi Direct is a peer-to-peer technology that Miracast™ connections are formed in. Even though some newer Android 4.0 and Windows 8.1 devices may detect the Receiver in the Wi-Fi Direct devices scan list, they will not be able to connect to the Receiver. The device must support Miracast™ to connect with the Receiver.

Can I connect to the Wi-Fi router and the Receiver simultaneously with my compatible laptop?

Yes. Connect the laptop to an available Wi-Fi router first, and then connect to the Receiver. You can then view online content and beam it to the HDTV.

Can I connect to the Wi-Fi router and the Receiver simultaneously with my Miracast™ device?

Some Miracast™ devices cannot connect to both the Wi-Fi router and the Receiver at the same time. Refer to the device manufacturer's or carrier's user manual for more information.

Can I connect several Miracast devices to the Receiver simultaneously?

No. You can connect one device to the Receiver at a time.

Can I connect to multiple ScreenBeam 960 Receivers simultaneously?

No. You can only connect to one ScreenBeam 960 at a time.

My TV/Projector does not have an HDMI Input. Can I still use ScreenBeam 960?

Yes. A VGA port is available for compatibility with legacy display devices.

Can Microsoft Surface Pro tablet support wireless display?

Originally, Microsoft Surface Pro does not support wireless display. However, it can support wireless display after you upgrade its operating system to Windows 8.1. The latest Microsoft Surface 2 and Surface Pro 2 with Windows 8.1 can support wireless display.

Can I use the ScreenBeam 960 to access online content directly?

No. ScreenBeam 960 does not directly connect to the Internet. You must use a source device (laptop/Ultrabook/tablet/smartphone) to wirelessly stream the online content to your Receiver.

Can ScreenBeam 960 support touch display?

Yes. ScreenBeam 960 supports UIBC. The source device must install a Window 10 system and meet the following hardware requirements:

- 4th Gen Intel Core (Haswell or better) processor
- AMD A4-5000 (Kabini or better) processor

Can I push media to the Receiver using DLNA?

No. The Receiver is not a DLNA media receiver.

Does the Receiver work with the Apple iPhone, iPad, or iPod?

Yes. ScreenBeam 960 supports Apple devices with native screen mirroring.

How to set my receiver to use the 5G frequency?

Generally, the 5G band can provide clearer channels, and the receiver works in this band can produce better performance.

In NGO mode, you must prepare a 5G router first. Then, connect your device to the 5G router first, and then connect your device to your receiver. Then your receiver will work in the 5G band.

In AGO mode, go to LMI > Features > P2P Wireless Setting, and select a 5G channel.

How to identify if my device can connect to ScreenBeam 960?

ScreenBeam 960 supports WiFi Certified Miracast devices and Apple devices with native screen mirroring.

To check if your device is Miracast enabled, check if the WiFi Certified Miracast logo is printed on the package of your device or directly on your device, or, if the wireless display app is available on your device. If yes, your device can connect to ScreenBeam 960.

"Allow input from a keyboard or mouse connected to this display" is displayed even no USB device is connected to the ScreenBeam receiver. Would it have any impact on the Miracast connection if the option is checked while no USB device is present?

No. This is a standard behavior of Windows 10.

My laptop screen is not displayed, only a black screen is shown, when I connect my laptop to a big screen through my ScreenBeam receiver's pass through VGA ports.
We have been reported that some Dell laptop computers could have this problem. You can press Windows + P keys to project the PC's screen when this happens.

Appendix II Notices

Warranty

This product has a one-year Limited Hardware Warranty and 90-day free software updates from the date of purchase.

- **Local Law**

This Limited Warranty Statement gives the customer specific legal rights. The customer may also have other rights which vary from state to state in the United States, from province to province in Canada, and from country to country elsewhere in the world.
To the extent that this Limited Warranty Statement is inconsistent with local law, this Statement shall be deemed modified to be consistent with such local law. Under such local law, certain disclaimers and limitations of this Warranty Statement may not apply to the customer.
Go to https://www.screenbeam.com/warranty-commercial for more information.

GPL Info

For GNU General Public License (GPL) related information, go to https://opensource.screenbeam.com.

EU CE Declaration of Conformity

To obtain the complete Declaration of Conformity form in softcopy, go to the Actiontec Electronics Declarations of Conformity EU/EEA website at https://support.screenbeam.com.
The symbol below is placed in accordance with the European Union Directive 2002/96 on the Waste Electrical and Electronic Equipment (the WEEE Directive). If disposed of within the European Union, this product should be treated and recycled in accordance with the laws of your jurisdiction implementing the WEEE Directive.

Technical Support

Go to https://support.screenbeam.com for product support, updates, and more information including:

- Documentation
- Firmware updates
- Troubleshooting
- Registration
- FAQs