

RTL8812AU-CG Module

User Guide

V0.02

Warning

This device complies with part 15 of the FCC Rules. Operation is subject to the condition that this device does not cause harmful interference (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

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

To maintain compliance with FCC's RF Exposure guidelines, This equipment should be installed and operated with minimum distance between 20cm the radiator your body: Use only the supplied antenna.

This device is intended only for OEM integrators under the following conditions:

- 1) The antenna must be installed such that 20 cm is maintained between the antenna and users, and
- 2) This device and its antenna(s) must not be co-located with any other transmitters except in accordance with FCC multi-transmitter product procedures. Referring to the multi-transmitter policy, multiple-transmitter(s) and module(s) can be operated simultaneously without C2P.
- 3) For all products market in US, OEM has to limit the operation channels in CH1 to CH11 for 2.4G band by supplied firmware programming tool. OEM shall not supply any tool or info to the end-user regarding to Regulatory Domain change.

USERS MANUAL OF THE END PRODUCT:

In the users manual of the end product, the end user has to be informed to keep at least 20cm separation with the antenna while this end product is installed and operated. The end user has to be informed that the FCC radio-frequency exposure guidelines for an uncontrolled environment can be satisfied. The end user has to also be informed that any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this equipment. If the size of the end product is smaller than 8x10cm, then additional FCC part 15.19 statement is required to be available in the users manual: This device complies with Part 15 of FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference and (2) this device must accept any interference received, including interference that may cause undesired operation.

LABEL OF THE END PRODUCT:

The final end product must be labeled in a visible area with the following " Contains LNQRTL8812AUCG ". If the size of the end product is larger than 8x10cm, then the following FCC part 15.19 statement has to also be available on the label: This device complies with Part 15 of FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference and (2) this device must accept any interference received, including interference that may cause undesired operation.

Operations in the 5.15-5.25GHz band are restricted to indoor usage only.

IEEE 802.11b or 802.11g operation of this product in the U.S.A. is firmware-limited to channels 1 through 11.

Industry Canada Statement

This device complies with RSS-210 of the Industry Canada Rules. Operation is subject to the following two conditions:

- 1) this device may not cause interference and
- 2) this device must accept any interference, including interference that may cause undesired operation of the device

French translation:

Ce dispositif est conforme à la norme CNR-210 d'Industrie Canada applicable aux appareils radio exempts de licence. Son fonctionnement est sujet aux deux conditions suivantes:

- (1) le dispositif ne doit pas produire de brouillage préjudiciable, et
- (2) ce dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.

(The user manual of transmitter devices equipped with detachable antennas shall contain the following information in a conspicuous location:)

This device has been designed to operate with an antenna having a maximum gain of 5 dBi. Antenna having a higher gain is strictly prohibited per regulations of Industry Canada. The required antenna impedance is 50 ohms.

CAN ICES-3 (B)/NMB-3(B)

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

French translation:

(Le manuel d'utilisation de dispositifs émetteurs équipés d'antennes amovibles doit contenir les informations suivantes dans un endroit bien en vue:)

Ce dispositif a été conçu pour fonctionner avec une antenne ayant un gain maximum de 5 dBi. Une antenne à gain plus élevé est strictement interdite par les règlements d'Industrie Canada. L'impédance d'antenne requise est de 50 ohms.

Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.

IMPORTANT NOTE:

IC Radiation Exposure Statement:

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

French translation:

NOTE IMPORTANTE: (Pour l'utilisation de dispositifs mobiles)

Déclaration d'exposition aux radiations:

Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre la source de rayonnement et votre corps.

Caution:

(i) the device for operation in the band 5150-5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems;

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

French translation:**Avertissement:**

Le guide d'utilisation des dispositifs pour réseaux locaux doit inclure des instructions précises sur les restrictions susmentionnées, notamment

(i) les dispositifs fonctionnant dans la bande 5 150-5 250 MHz sont réservés uniquement pour une utilisation à l'intérieur afin de réduire les risques de brouillage préjudiciable aux systèmes de satellites mobiles utilisant les mêmes canaux;

(ii) le gain maximal d'antenne permis (pour les dispositifs utilisant la bande 5 725-5 825 MHz) doit se conformer à la limite de p.i.r.e. spécifiée pour l'exploitation point à point et non point à point, selon le cas.

This device is intended only for OEM integrators under the following conditions:

This device is intended only for OEM integrators under the following conditions:

- 1) The antenna must be installed such that 20 cm is maintained between the antenna and users, and
- 2) This device and its antenna(s) must not be co-located with any other transmitters except in accordance with IC multi-transmitter product procedures. Referring to the multi-transmitter policy, multiple-transmitter(s) and module(s) can be operated simultaneously without reassessment permissive change.
- 3) For all products market in Canada, OEM has to limit the operation channels in CH1 to

CH11 for 2.4G band by supplied firmware programming tool. OEM shall not supply any tool or info to the end-user regarding to Regulatory Domain change.

As long as 3 conditions above are met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed.

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

French translation:

Cet appareil est conçu uniquement pour les intégrateurs OEM dans les conditions suivantes: (Pour utilisation de dispositif module)

- 1) L'antenne doit être installée de telle sorte qu'une distance de 20 cm est respectée entre l'antenne et les utilisateurs, et
- 2) Cet appareil et son antenne (s) ne doit pas être co-localisés ou fonctionnement en association avec une autre antenne ou transmetteur.
- 3) Pour tous les produits vendus au Canada, OEM doit limiter les fréquences de fonctionnement CH1 à CH11 pour bandes de fréquences 2.4G grâce aux outils de microprogrammation fournis. OEM ne doit pas fournir d'outil ou d'informations à l'utilisateur final en ce qui concerne le changement de réglementation de domaine.

Tant que les 3 conditions ci-dessus sont remplies, des essais supplémentaires sur l'émetteur ne seront pas nécessaires. Toutefois, l'intégrateur OEM est toujours responsable des essais sur son produit final pour toutes exigences de conformité supplémentaires requis pour ce module installé.

Le dispositif pourrait automatiquement cesser d'émettre en cas d'absence d'informations à transmettre, ou une défaillance opérationnelle. Notez que ce n'est pas l'intention d'interdire la transmission des informations de contrôle ou de signalisation ou l'utilisation de codes répétitifs lorsque requis par la technologie.

IMPORTANT NOTE: In the event that these conditions can not be met (for example certain laptop configurations or co-location with another transmitter), then the IC authorization is no longer considered valid and the IC ID can not be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate IC authorization.

French translation:

NOTE IMPORTANTE:

Dans le cas où ces conditions ne peuvent être satisfaites (par exemple pour certaines configurations d'ordinateur portable ou de certaines co-localisation avec un autre émetteur), l'autorisation du Canada n'est plus considéré comme valide et l'ID IC ne peut pas être utilisé sur le produit final. Dans ces circonstances, l'intégrateur OEM sera chargé de réévaluer le produit final (y compris l'émetteur) et l'obtention d'une autorisation distincte au Canada.

End Product Labeling

This transmitter module is authorized only for use in device where the antenna may be installed such that 20 cm may be maintained between the antenna and users. The final end product must be labeled in a visible area with the following: "Contains IC: 2496A-RTL8812AUCG".

French translation:

Plaque signalétique du produit final Ce module émetteur est autorisé uniquement pour une utilisation dans un dispositif où l'antenne peut être installée de telle sorte qu'une distance de 20cm peut être maintenue entre l'antenne et les utilisateurs. Le produit final doit être étiqueté dans un endroit visible avec l'inscription suivante: "Contient des IC: 2496A-RTL8812AUCG".

Manual Information To the End User

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user's manual of the end product which integrates this module. The end user manual shall include all required regulatory information/warning as show in this manual.

French translation:

Manuel d'information à l'utilisateur final L'intégrateur OEM doit être conscient de ne pas fournir des informations à l'utilisateur final quant à la façon d'installer ou de supprimer ce module RF dans le manuel de l'utilisateur du produit final qui intègre ce module. Le manuel de l'utilisateur final doit inclure toutes les informations réglementaires requises et avertissements comme indiqué dans ce manuel.

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Part I. Getting Started

RTL8812AU-CG module is a Miracast sink device, with Bluetooth Low Energy (BTLE) for easy connection. It can be installed to any device that requires a Miracast module for wireless display.

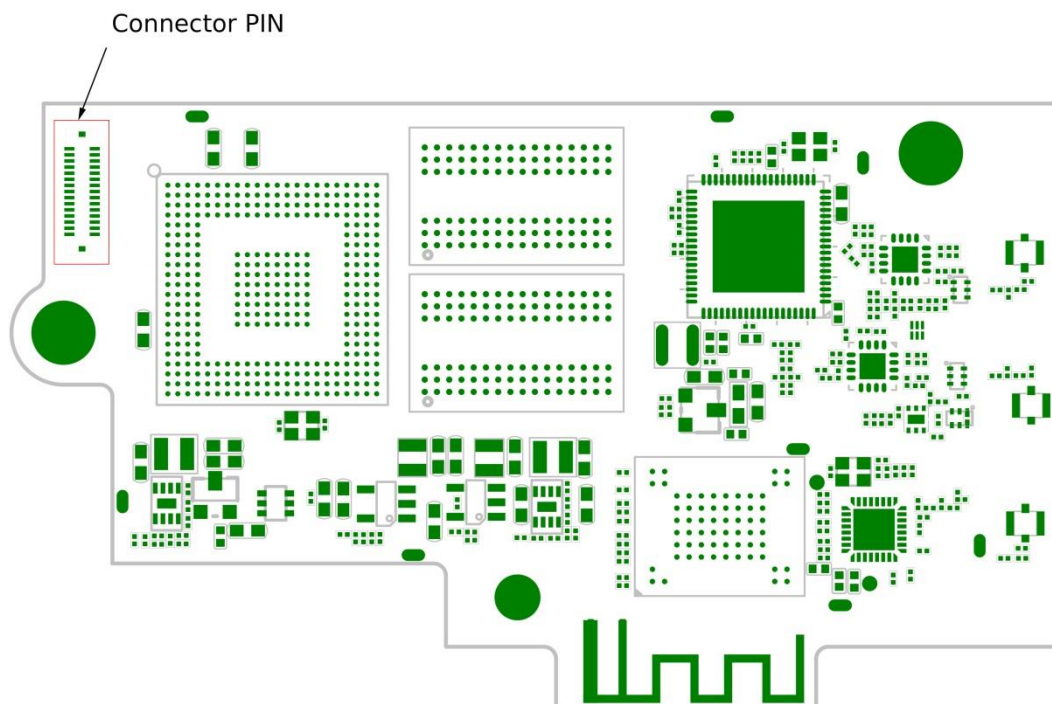
The module uses a PIN-to-PIN connector to communicate with and obtain power supply from the host device.

1.1. Meeting RTL8812AU-CG

This manual is applicable to the following catalog #s:

- RTL8812AU-CG

1.1.1. RTL8812AU-CG



- **Connector PIN**, for communicating with and obtaining power supply from the host device

1.2. System Requirements

System requirements for the module are shown below:

1.2.1. Module Installation

To install the module, the host device should provide a compatible PIN-to-PIN connector and an HD display.

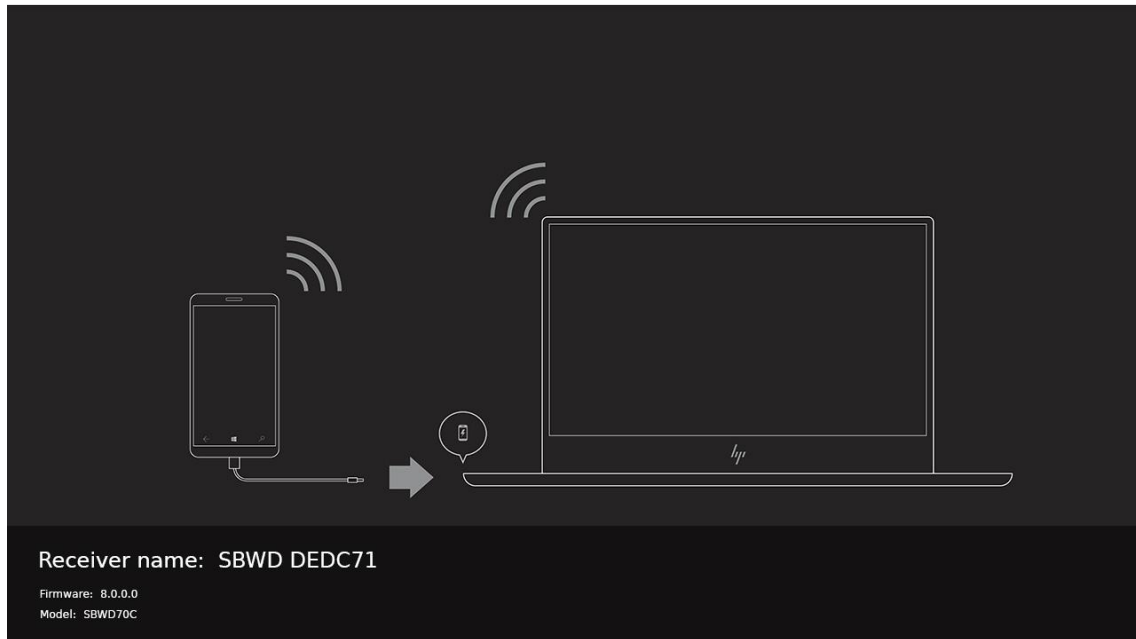
1.2.2. Compatible Devices

RTL8812AU-CG is compatible with the following devices:

- Wi-Fi Certified Miracast™ smartphones, tablets and notebook with Windows 10/8.1

Part II. Installing the Dock

1. Connect RTL8812AU-CG module to the host device through the PIN-to-PIN connector.
2. Power on the host device.
3. Verify that the screen below is displayed on the host device's display.



The RTL8812AU-CG module is ready for use.

Part III. Connecting for the First Time

This chapter explains how to connect RTL8812AU-CG for the first time to the source device.

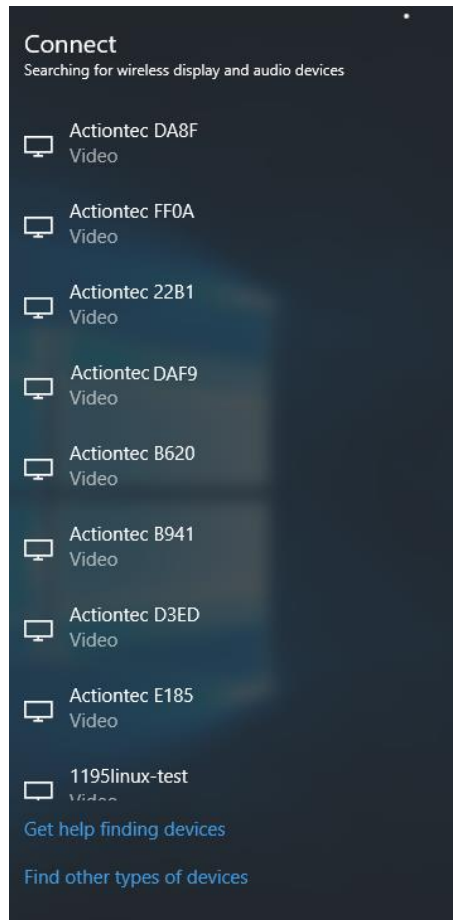
3.1. Connecting using Miracast on Windows 10

Miracast is a peer-to-peer wireless screen display standard created by the Wi-Fi Alliance. It allows a portable device like a laptop or smartphone to wirelessly send up to 1080p HD video and 5.1 surround sound to a compatible display, like an HDTV.

A Miracast compatible Ultrabook™, PC or Tablet device captures the audio and graphics data and encodes it as H264 video stream for transport. This information is then sent by the device via Wi-Fi through a Wi-Fi Direct connection to a receiver connected to the display device. The receiver then decodes the video signal and passes it to the TV display (or other display device).

This section explains how to connect a device running Windows 10 to RTL8812AU-CG.

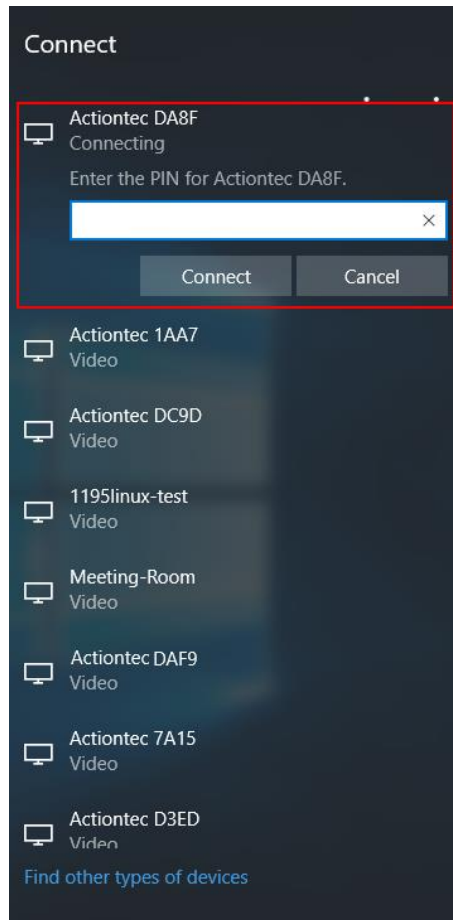
1. Click the **Notification** icon on the task bar or press the shortcut keys, Windows logo  + **A**, to open the **Action Center**, and then select **Connect** to open the wireless display receiver list.



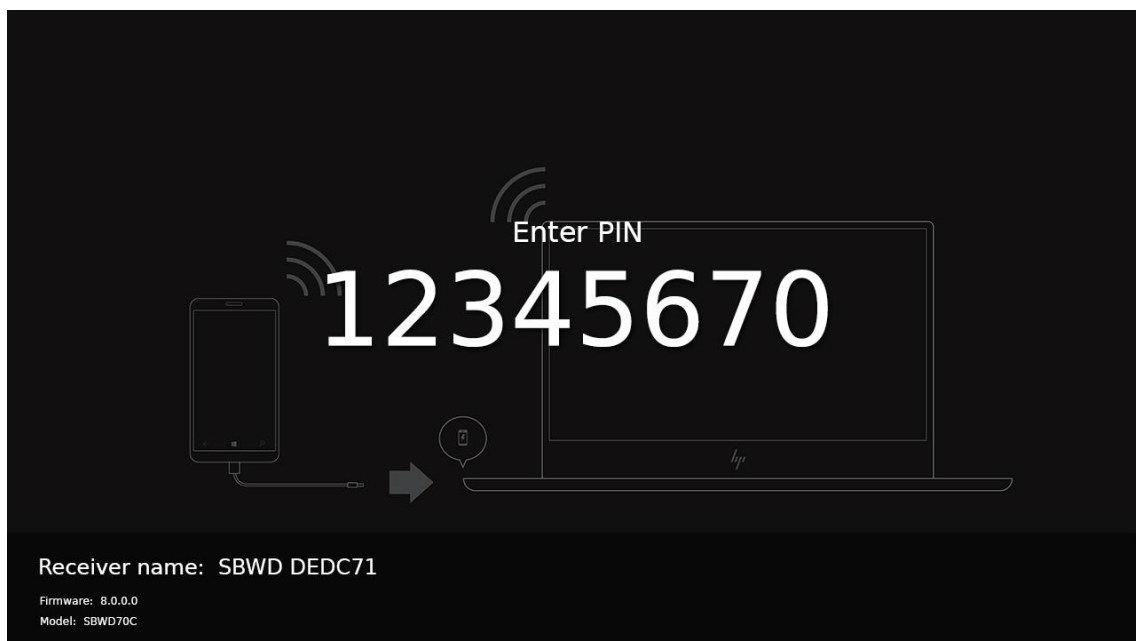
Note: There are other ways to open the wireless display receiver list:

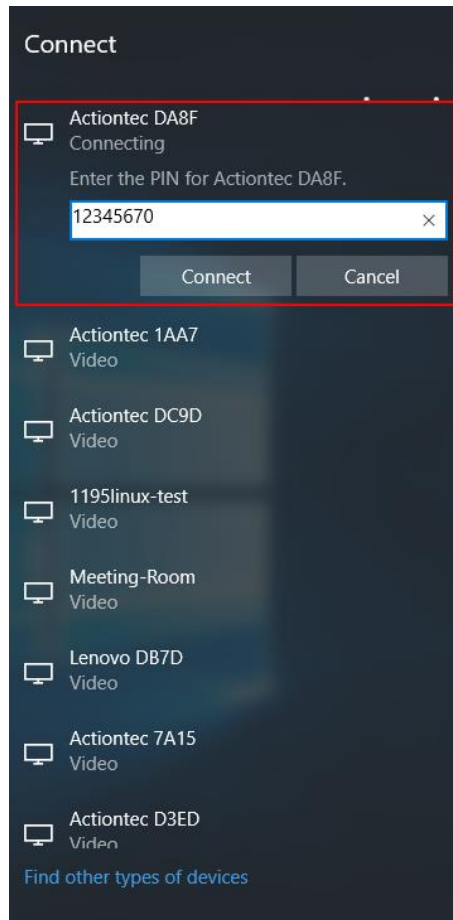
- Click the Start button, and then select **Settings > Devices > Connected devices > Add a device** to open the wireless display receiver list.
- Press the shortcut keys, Windows logo  + **K**, on your keyboard to display the wireless display receiver list.
- Press the shortcut keys, Windows logo  + **P**, to open the **Project** menu, and then select **Connect to a wireless display** to open the wireless display receiver list.

2. Select your receiver from the device list.

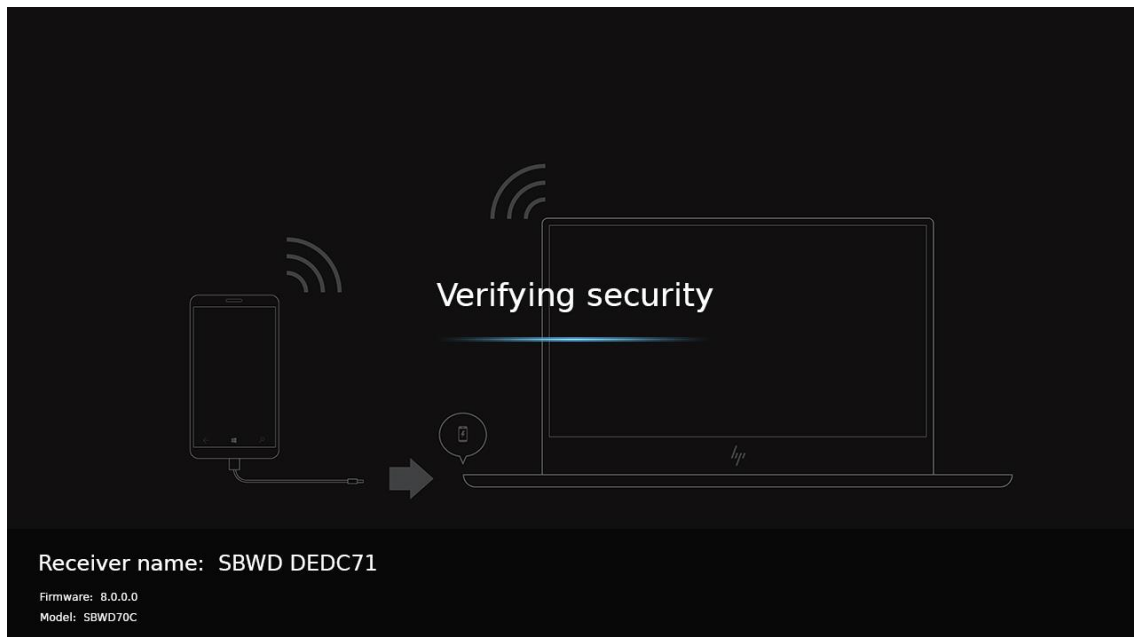


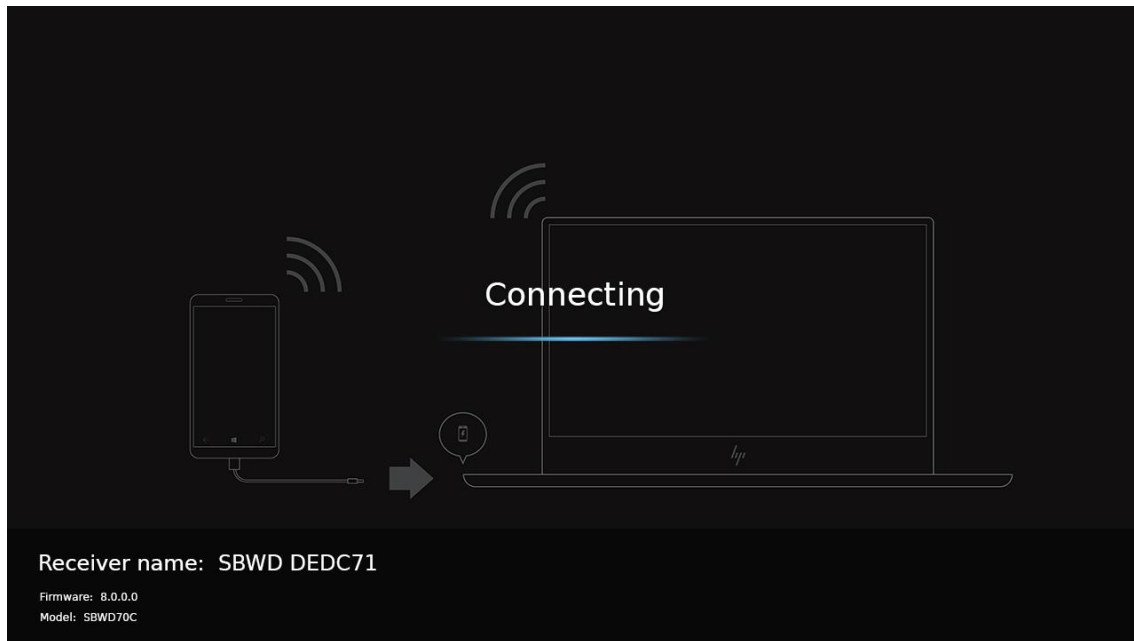
3. Follow any instructions on the display device. You may be required to enter a PIN code. If a PIN is displayed on the connected display device, you should type this PIN in the PIN entry box and click **Connect** to continue.





4. The display device displays messages to show the status of the connection.





5. The device has connected to the dock. And the device's screen is displayed on the HDTV.

Note: Connection method on Windows 8.1 devices is similar. The path is **Charm** menu > **Devices** > **Project** > **Add a wireless display**.

3.2. Connecting using Miracast on Android

This section explains how to connect a Miracast™-enabled Android device, such as a smartphone, a tablet, or a game console, to the Receiver. For the best performance, the Miracast™ device should be running the latest software.

1. On a Miracast™-enabled Android device, locate and open the **Wireless Display** application (check for the application under “**Settings**”).

Note: The name of the Wireless Display Application depends on the device type and model. Refer to the device's user manual for more details.

2. The Wireless Display Application scans for available devices. Select your wireless display device from the device list. You may be required to enter a PIN code, which is displayed on the display device's screen.
3. Wait for the device to pair with the Receiver. When it does, the device's screen will be displayed on the HDTV.

3.3. Connecting using BTLE

Proximity connect is a feature in Windows that enables auto reconnect to ScreenBeam Wireless Dock when in close range. The Wireless Dock needs to be manually connected the first time. Then a setting is offered to the user for auto reconnect. If the user checks it, the device's beacon information will be saved and proximity connect will be enabled for that

device in the future. The next time the user walks into close range of the ScreenBeam Wireless Dock, BTLE beacons will be used to trigger the auto reconnect to the wireless device.

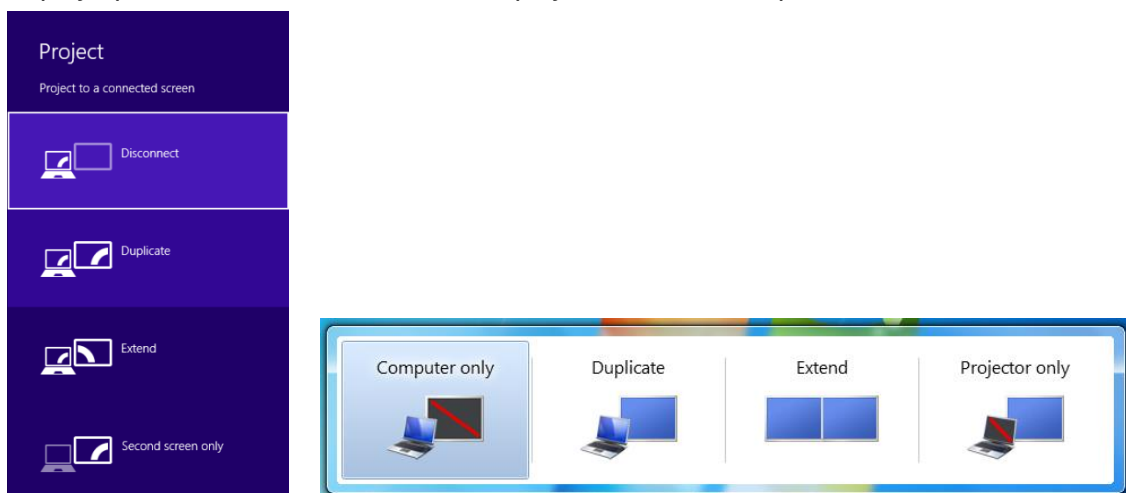
Part IV. Display and Control Options

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

4.1. Display Mode

The Receiver supports three display modes when connected with a compatible wireless display application (Intel WiDi or Windows 8.1 Project, for example).

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



- **Duplicate**

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

- **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.