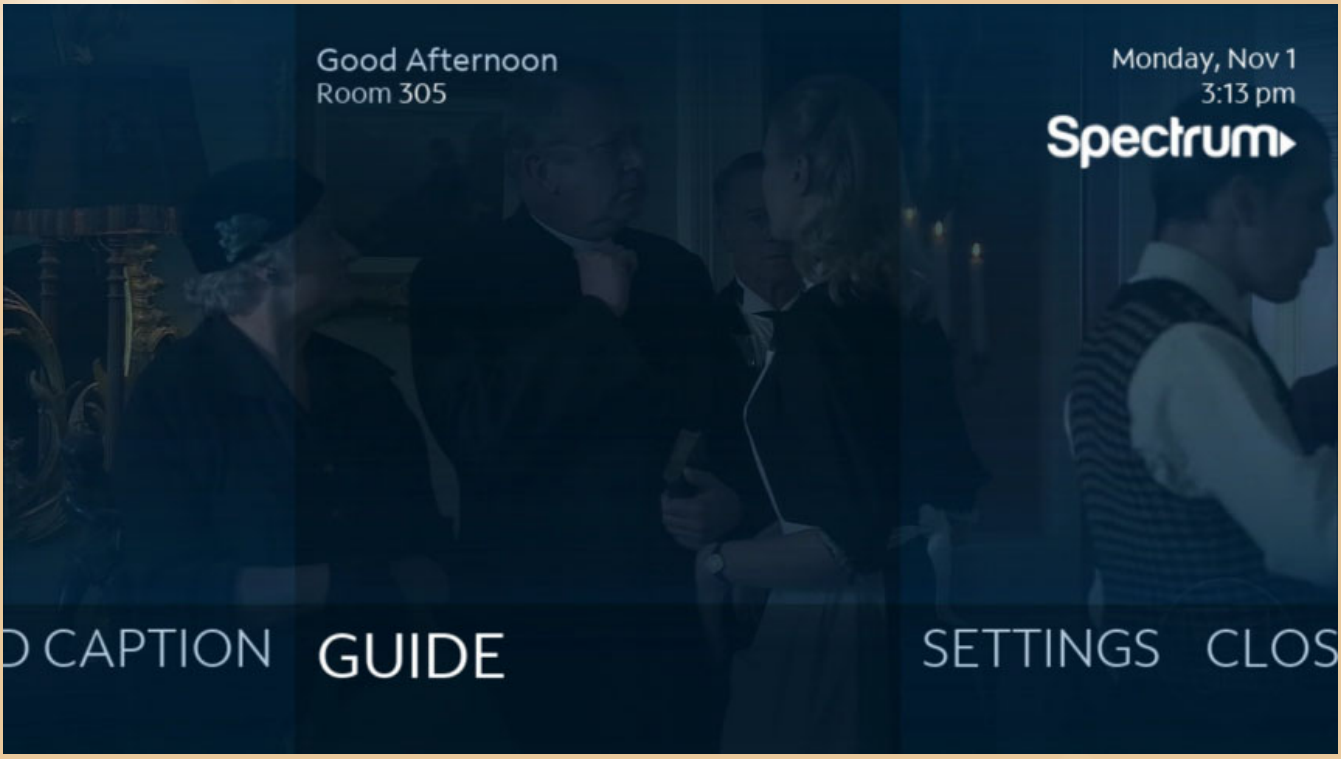

vuTyme™ Installation & User Guide

Important: These installation instructions require that a professional installation technician conduct the install and configuration of this product.

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Description	Date/Version
Initial release.	Version R01_9_6_2023

Contents

CHAPTER 1: ADB-2682WF SBB INSTALLATION & USE

Use the following procedures to complete an on-site installation of the vuTyme-enabled ADB-2682WF set-back box (SBB).

Important: This SBB is a power-over-ethernet (POE) device with two Ethernet ports and a WiFi interface. It is important to pay attention to what connection use cases are possible when the power-supply (PSU) is used versus the SBB powered over Ethernet (POE). The WiFi connection use cases are also impacted. See p. 3.

1.1 ADB-2682WF OVERVIEW

See below for SBB renderings and specifications.

General:

Item	Description
Hardware platform / SoC	Mediatek MTK5251A (C2U); quad core ARM / 17000DMIPS
RAM Memory	2 GB DDR4 system memory
Flash Memory	16GB eMMC *) *) eMMC used for both the SBB firmware and as a storage for DVR-Lite™. DVR-Lite™ uses 13GB (out of the total 16GB).
Network Connectivity (Wired)	2x Ethernet 10/100 Mbps *) 2 x PoE (1xPoE source + 1xPoE sink) *) 1x 10Base-T/100Base-TX (PoE sink port) 1x 10Base-Te/100Base-TX (PoE source port) IPv6 is supported
Network Connectivity (WiFi)	Wi-Fi client 802.11ax tri-band 2.4GHz/5GHz/6GHz switchable, WPA2-PSK and WPA3-SAE are supported
Security CA/DRM	PlayReady SL 3000 HDCP 2.3 for HDMI 2.0b NOTE: Irdeto FKPS is not supported with the selected C2U Processor
Software	ADB vuTyme Client
Environmental	Operating Temperature Range from 5 to 45°C
Anti-tamper	Sticker (label/seal)

Decoder:

Item	Description
Video Output	SD: 576i HD: 576p60, 720p60, 1080i60, 1080p60 4K: 2160p60
Video Decoders	MPEG-2: MP@ML, MP@HL H.264 (AVC) p.10: MP@L4.1, HP@L4.2 H.265 (HEVC) MP-10@L5.1 AV1: MP-10@L5.1 HDR:HDR10, HLG

Audio Decoders	MPEG-1 layer 1, 2, 3 (MP3) MPEG-2 Layer 2 Dolby Digital and Dolby Digital Plus AAC-LC, HE AAC

Interfaces:

Item	Description
Indicators	1x bicolor (red / green) LED - indicator of the power state; blinking on reception of IR code (see p. 9 for more info.)
Infra-Red	IR 38kHz
Wi-Fi	802.11ax tri-band (2.4/5GHz/6GHz) switchable
Bluetooth	5.0
HDMI OUT	1x HDMI type A connector, version 2.0b with HDCP 2.3
IR Jack	1x Mini-Jack 3.5” for IR Extender
Ethernet	2x RJ-45 (with LED indicator) for Fast Ethernet (10/100 Mbps) 2 x PoE (1xPoE source + 1xPoE sink) Type1 802.3af / Class 3 Source (PSE – Power Source Equipment) 15.4W Sink (PD – Powered Device) 12.95W See Section on PoE Use Cases below **Note**: *Either PoE Sink or PoE Source can be active at a time (no support for the scenario when both PoE Source and PoE Sink are working at the same time)*
Power	12V DC Power Jack
USB	1x USB 2.0
Reset Button	This button triggers no actions in the current version of this SBB.

1.2 INTERFACE CONNECTIONS: OPERATIONAL RULES

See below for a general explanation of how the SBB operates in POE or non-POE environment. There are some restrictions depending up how the interfaces are used and if POE or regular PSU power is used.

1. **Ethernet Ports:**

   - ❑ By default, the Ethernet Sink port is enabled and WiFi client is disabled. The Sink port is always the primary Ethernet interface to the property network for vuTyme service. However, the Wifi client interface can also be used for vuTyme service. If the WiFi client interface is enabled, the Sink port is disabled.
   - ❑ The second Ethernet port (Source) cannot be used for the direct connection to the property network. To enable the second Ethernet port (Source), you must use vuTyme Manager.
   - ❑ Both Ethernet ports support 100Mbps bandwidth.
   - ❑ To power the SBB over Ethernet, an Ethernet cable must be connected from the SBB to a Type1 802.3af / Class 3 POE Ethernet switch on the property.

2. **WiFi:**

   - ❑ The Wifi module contains a separate WiFi client and WiFi Access Point (AP). The WiFi Client and WiFi Access Point interfaces can never work simultaneously.
   - ❑ WiFi Access point configuration can be done in vuTyme Manager. AP configuration can also be done on the SBB via diagnostic screens.
   - ❑ WiFi Client mode can be enabled using the following:
     - ❑ vuTyme Manager.
     - ❑ On the SBB using internal Setup options (see “Box Support Menus & Diag Screens” on page 15).
     - ❑ Via a USB stick. USB stick is most often used when technicians install the SBBs over property WiFi to get a connection to the vuTyme server. See “SBB Wi-Fi Config” on page 8.
   - ❑ If the SBB is powered through Ethernet Sink port, the WiFi client interface is disabled. It is considered unneeded since vuTyme client traffic is done via Ethernet. If the SBB is powered from a

PSU and the WiFi client is configured and enabled, the Ethernet Sink port is disabled (for the same reason above).

3. **Power Supply:**

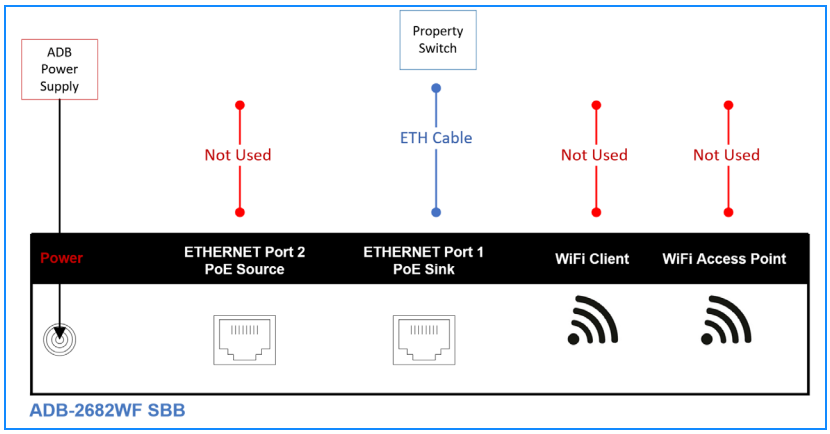
   - ❑ The ADB-2682WF can be powered from a PSU (external 12V power supply). This most common option is needed in order to power another device thru the POE Source Ethernet port (such a SIP telephone or another SBB).
   - ❑ If the SBB is powered using the POE Sink port, devices connected to the POE Source port are not powered. They can be powered using their own power supplies, however.
   - ❑ You can have both a power supply connected and the Sink port connected to a POE switch. However, power will not be provided to the Source port until enabled via the vuTyme Manager.

1.3 CONNECTION USE CASES

The ADB-2682WF supports the following use cases. Find the use case that fits your current installation for more information on making the proper connections during the installation.

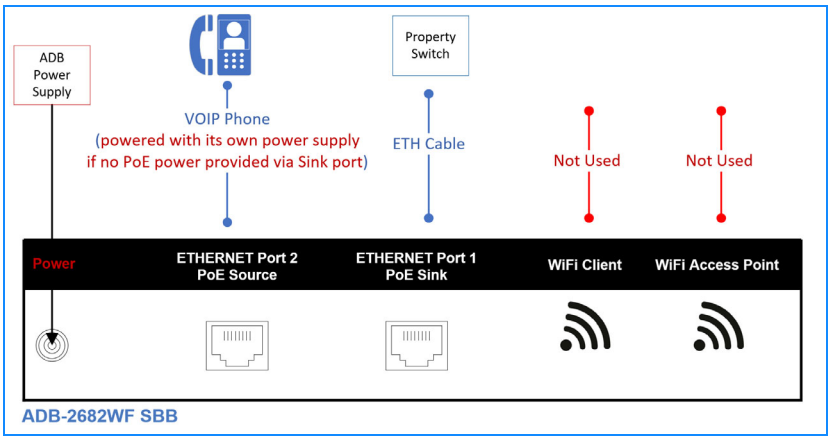
1.3.1 STANDARD-BASIC CONNECTION - ETHERNET

Note: SBB does not require power supply if Sink port is connected to a Type1 802.3af / Class 3 POE Ethernet switch on the property.



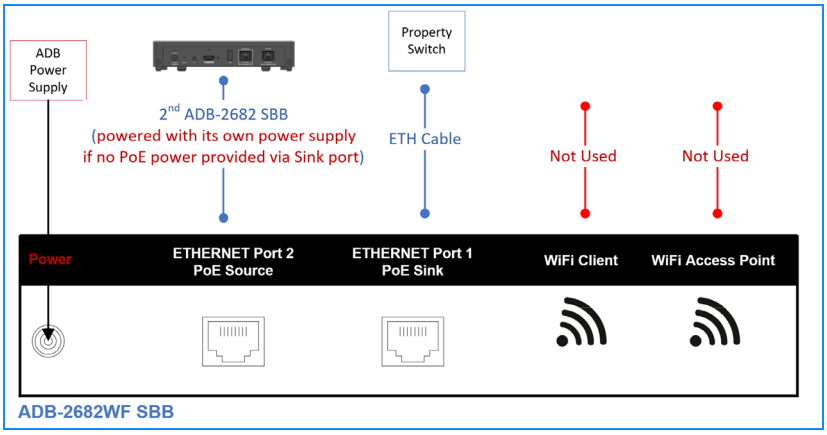
1.3.2 VOIP/SIP PHONE

Note: If no SBB power supply is used, and the Sink port is connected to a Type1 802.3af / Class 3 POE switch for power, the VOIP/SIP phone must be powered with its power supply. If the SBB power supply is used, the phone is powered over Ethernet.



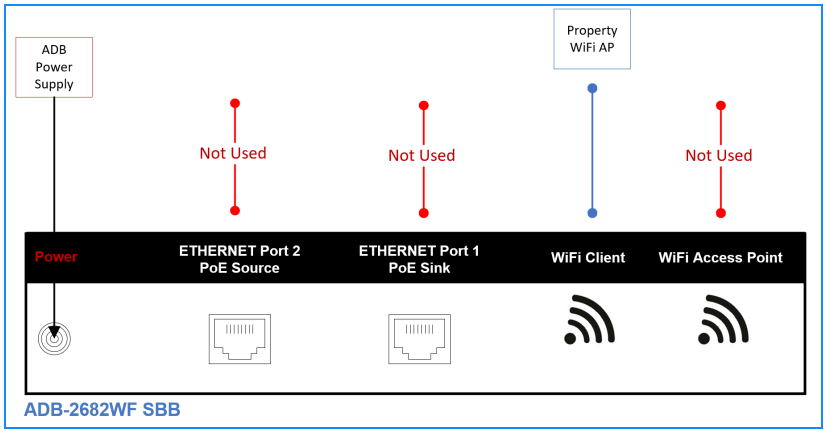
1.3.3 2ND SBB CONNECTED OVER ETHERNET

Note: If no SBB power supply is used, and the Sink port is connected to a Type1 802.3af / Class 3 POE switch for power, the 2nd SBB must be powered with its power supply. If the SBB power supply is used, the 2nd SBB is powered over Ethernet.



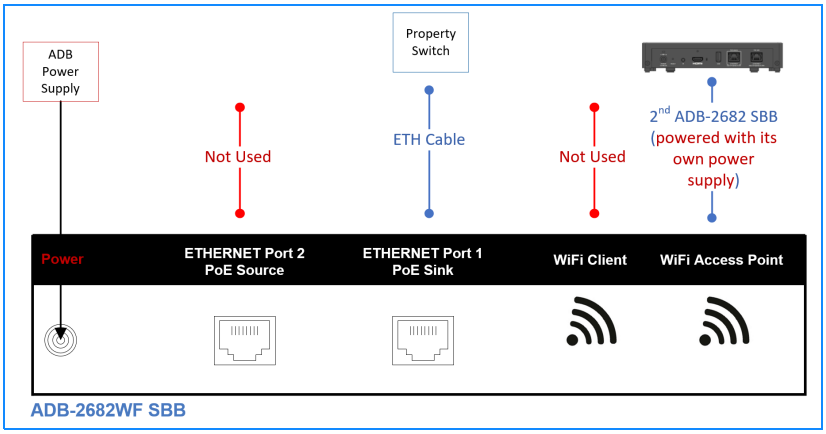
1.3.4 STANDARD BASIC CONNECTION - WIFI

Note: The POE Sink port is disabled if connecting the SBB as a vuTyme client via WiFi.



1.3.5 2ND SBB CONNECTED OVER WIFI

The SBB power supply is not required to power the WiFi AP. WiFi AP power can be supplied via the Sink port as long as it is connected to a Type1 802.3af / Class 3 POE switch.



1.4 GENERAL SAFETY INFORMATION

Review the following safety instructions for handling and operating the SBB. For complete safety information, consult the safety guide included in the SBB product packaging.

- ❑ The SBB is designed for use **only** with the supplied external power supply adapter. Do not use any other power supply.
- ❑ The order of connecting the power supply is as follows:
  - ❑ Connect the 12V lead to the SBB first.
  - ❑ Insert the main plug into the power outlet.
- ❑ To disconnect the SBB from power, remove the external power supply adapter from the power outlet (not by removing the 12V lead from the SBB).
- ❑ Disconnect the power supply from the power outlet before you disconnect any equipment from the rear panel of the SBB.
- ❑ Allow some free space above and around the SBB to ensure a free flow of air around it. Don't block the ventilation holes of the SBB. Don't place the SBB on top of any unit that emits heat (for example, a video recorder).

1.5 PREREQUISITES

Complete the following tasks before installing SBBs.

1. The SBBs must be staged and provisioned in the operator's warehouse according to their own procedures.
2. SBBs must have be added to the billing account/sub-accounts. **Note**: Some Service Providers may not require this step.
3. **Confirm the Property Network**: The property IP network infrastructure must be able to support vuTyme application traffic and video. Refer to following document from ADB for complete network setup, bandwidth estimation, and checklists:

   - ❑ **vuTyme_Product_Family_IP_Network_Requirements**
     This document can be requested from the video service operator or ADB vuTyme support.
   - ❑ The maximum identified network utilization for the ADB-2682WF SBB is to support playing a 4K IP video stream itself as well as bridging a 4K IP video stream to another SBB. See below for general bandwidth usage:

Consumer	Bandwidth
vuTyme General Application Traffic	Per SBB: A minimum bandwidth of 256Kbps is required to boot SBBs in under 10 minutes. With more bandwidth, SBBs can boot in less time (e.g. 512Kbps boots in under 5 minutes).
UHD	TCP-based 4K video stream (MPEG-DASH): 15Mbps UDP-based 4K video stream (IPTV Multicast): 25 Mbps
Live TV (HD, 1080)	9 Mbps
Live TV (SD, 720)	5 Mbps
SIP telephone:	2 Mbps
VOD	6.5 Mbps (average for MPEG-Dash) VOD data rates vary by compression and stream type.

1.5.1 BUILD OUT THE PROPERTY IN VUTYME MANAGER

The property where the SBBs will be installed must be built out in the vuTyme Manager and made Active before the install. Property setup includes creating the property, enabling features, setting up channel lineups, creating at least one property **Area**, configuring broadcast and box settings, UI setup, and more. **Additional Notes**:

- ❑ Once the property is built, a Premises ID is created. This must be communicated to the install technicians.
- ❑ Broadcast Settings and Box Settings in vuTyme Manager are made for SBBs to accommodate the specific type of signal delivery and wiring at the property, including WiFi. It is highly recommended that the Broadcast Settings and Box Settings be made/confirmed prior to physical installation at the property.
- ❑ In some cases, the video delivery and wiring infrastructure may differ across sections of the property. In such cases, it is recommended that separate Areas be created during the property creation process. This allows the operator to assign different broadcast and box settings in vuTyme and make other settings to manage the differences in wiring and video delivery.

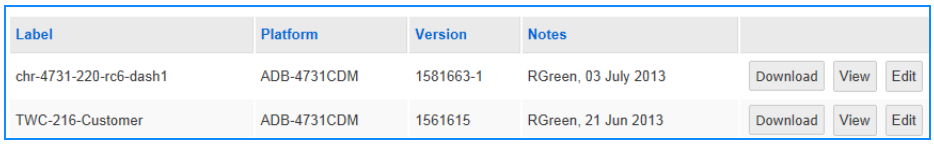
1.5.2 LOAD CORRECT VUTYME FIRMWARE TO BOXES

SBBs can be upgraded to the desired firmware before deployment automatically, or a USB stick can be used to download the software on-site or in a pre-install environment. Lastly, SBBs could be installed and then upgraded remotely after they are registered to a property room.

- ❑ The most current approved firmware must be set as the default in vuTyme Manager (Platforms Tab>>specific SBB platform>>default image).
- ❑ Factory fresh SBBs that have been preloaded into the vuTyme inventory are connected via Ethernet or Wi-Fi and powered on. Then, automatic downloads will occur in the following cases: if SBBs have factory firmware, if SBBs have older firmware than that set as the default, if all SBBs are currently not assigned to a property.

1.5.3 DOWNLOAD FIRMWARE TO A USB STICK & UPGRADE BOX

1. To download a firmware image to place on a USB stick in order to upgrade boxes, do the following:
2. Login to the vuTyme Manager.
3. Click **Home** in vuTyme. Click **Firmware Library**.



Label	Platform	Version	Notes			
chr-4731-220-rc6-dash1	ADB-4731CDM	1581663-1	RGreen, 03 July 2013	Download	View	Edit
TWC-216-Customer	ADB-4731CDM	1561615	RGreen, 21 Jun 2013	Download	View	Edit

4. It is important to know what is the currently approved firmware for deployment. Find the desired firmware in the list and click the **Download** button. You will be prompted to save the firmware to your local computer.
5. Once saved, that image can then be placed on a USB stick to upgrade boxes using the USB port. USB sticks must be formatted FAT32. **Notes**: Place only the firmware image on the USB stick. Nothing else can be on it.
6. Once a USB stick is prepared, insert it into the USB port on a box and follow the on-screen prompts to complete the firmware download.

1.5.4 SBB WI-FI CONFIG

If the SBB will use the WiFi client to connect to the property network (see p. 5), use the following steps to prepare for an installation. This connection will be used to support vuTyme application traffic, VOD, and CDN/OTT streaming.

Important: WPA2-PSK and **WPA3-SAE** are supported on the ADB-2682 platform.

1. Work with the property to determine what Wi-Fi SSID to use for SBBs. In some cases, there may be different SSIDs used across the property.
2. Make sure WiFi levels throughout the property are correct. See below:
   - ❑ Maximum RSSI (received signal strength indicator) for correct operation of internet based services: -65dBm to -20dBm for 2.4GHz channels and -65dBm and -30dBm for 5GHz.
   - ❑ -30 dBm = Excellent - Max achievable signal strength. Device is most likely only a few feet from the AP.
   - ❑ >= -65 dBm = Very Good - Minimum signal strength for most business applications.
   - ❑ -70 dBm = Okay - Minimum signal strength required for decent packet delivery.
   - ❑ -80 dBm = Not Good - Packet delivery may be unreliable.
   - ❑ -90 dBm = Unusable.
   - ❑ Use the link below for how to use a WiFi Analyzer application to check signal levels on-site.
   - ❑ https://www.techadvisor.com/article/743462/how-to-check-wifi-signal-strength.html#:~:text=How%20to%20check%20Wi%2DFi%20signal%20strength%20on%20iPhone,Scanner%20to%20enable%20this%20feature_
3. Obtain an empty USB stick to use during the installation which will be used to auto-configure the SBB Wi-Fi client in order for the SBB to make a vuTyme connection and register. This stick must be configured with one partition as ext4 or fat32.
4. Use a raw text editor and create a new file called **config.ini**.
5. Add the following lines to the file. Be sure to substitute in the correct values for the property Wi-Fi SSID and password.

```
[net]
interface=wlan0
ssid=property_Wifi_SSID
password=property_WiFi_SSID_password
encryption=WPA2-PSK
```

Important: For **encryption**, the following values are supported: **WPA2-PSK** and **WPA3-SAE.**

6. Save the **config.ini** file to the USB stick when complete. Keep this USB stick with you to use during the installation. Using the stick is described in the install instructions on the following pages.
7. See the references below for more information:

   ❑ To see all the USB stick options for controlling the network interfaces on the SBB, see p. 14.

1.6 SBB INSTALLATION - CONNECT THE SBB

The following provides summarized steps to install the SBB running the vuTyme client.

Note: Depending upon your local installation situation, you may want to mount the SBB first before making connections. If so, refer to p. 12 and then return to this section.

Note: Technicians should make sure they have Ethernet cable couplers and/or extra lengths of Ethernet cables in case the supplied Ethernet cable is too short (1 meter).

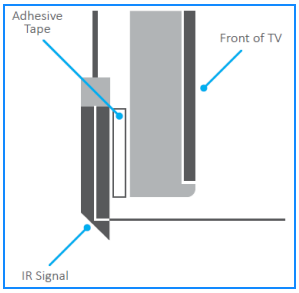
1. The SBB has multiple connection options. Refer to “Connection Use Cases” on page 5 to confirm what connection option you will use. Use the diagram provided as a general connections diagram.
2. Connect the supplied Ethernet cable from the SBB’s Sink port to the Ethernet port in the room. If you will use power-over-ethernet (POE), the cable must be connected to a port from a Type1 802.3af / Class 3 POE switch.
3. If Wifi is to be used for the for vuTyme application traffic, VOD service, and/or CDN/OTT video, insert the prepared USB stick (as described on “SBB Wi-Fi Config” on page 8) into the USB slot on the back of the device.
4. Connect the IR dongle into the IR port on the SBB (next to HDMI port). This provides line-of-sight RCU control of the SBB (as the SBB will be mounted behind the TV).
   At some point during the install, the prism end of the IR dongle must be affixed to the TV. This may be done now or after install and mounting of the SBB. See below for instructions:

   ❑ Use the supplied two-sided tape to affix the IR prism dongle to the TV, typically to the bottom-back of the screen. If possible, mount toward the center of the TV screen. Make sure the area on the TV is clean and dry. You may want to wait until the SBB is mounted before affixing the IR prism to the TV.

   ❑ The IR prism should be mounted facing downward so the 45 degree angle is facing toward the back of TV and the wire is coming out towards the top. Route the wire so there isn’t any pressure pulling on the bonded prism dongle.

   ❑ Between 1/8” and 1/4” of the prism should protrude below the TV and have clear line-of-sight access to the room.

   ❑ See to left for an example.



5. Connect the HDMI cable from the SBB to the TVs preferred HDMI port (e.g. HDMI 1). Have the TV powered on and set to the TV’s preferred HDMI port (e.g. HDMI 1).
6. If a pillow speaker interface is to be used (e.g. ProTv solutions), connect that interface to the USB port.
7. Optionally, connect a Strain Relief Clip to the SBB and ensure the power cord and/or Ethernet cable is clipped into it.
8. Connect the power in this order: (1) If using the SBB PSU, connect the cord from the power supply brick to the back of the SBB, (2) connect the power supply cord from the brick to the power outlet. **Note**: Reverse the order when disconnecting the SBB from power.

1.6.1 SBB BOOT

1. As the SBB boots, observe the boot screen to make sure there are no issues (e.g. network). Refer to “Box Support Menus & Diag Screens” on page 15 for more information.

   If the box is not booting, the serial number of the box is displayed on the boot screen for further investigation. Note also the LED behavior:

   ❑ LED will remain steady GREEN while the box boots but turns off once attached to a property.

   ❑ GREEN blinks for RCU signal reception of IR codes from the Embedded IR Sensor:

      ❑ Doesn't blink if something is connected to External IR port (IR Extender Sensor or PSI dongle) and IR codes are received thru the External IR port.

      ❑ Doesn't blink if key input is received thru USB port.

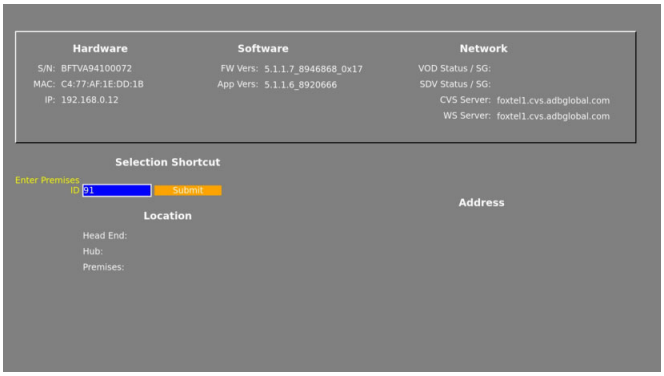
- ❑ Ethernet Status LED (on Ethernet ports):
  - ❑ LED indicators are enabled when SBB starts booting.
  - ❑ LED indicators are disabled when SBB successfully finished booting and high-level software (vuTyme Client application) has started.
- ❑ RED displays quickly for initial boot, then off.
- ❑ **Note**: If the LED remains on **after** being attached to a property, that indicates an issue with the SBB. Constant Red typically indicates a true hardware issue that may require an RMA and replacement of the device.
- ❑ **Important**: If multiple boxes are being booted at the same time (e.g. after a power outage), some boxes may not get the UI/App download or other configuration information from the vuTyme server if the network speed is too low. Instead, an algorithm on the SBB pauses, and at random intervals, has SBBs attempt another reboot. This is an intentional “boot-retry” design that allows boxes to come online when network speeds are too low.

2. If the Wi-Fi USB stick is being used, as described further above, the Settings screen is displayed.
   - ❑ Verify that the SBB is successfully connected to the desired property Wi-Fi by navigating to the "Wi-Fi" section. If you accidently close the setup screen, you can re-invoke it by pressing the **#314** (see p. 15 for more information and options).
   - ❑ Remove the USB Flash drive from the SBB’s USB port. Exit the Box Settings menu (via EXIT key on the RCU). This will cause the SBB to reboot and then the vuTyme application should start normally.
3. Once properly booted and connected to the network (with internet access), the SBB displays the in-room installation screens as explained on the following pages.

1.6.2 REGISTER THE SBB TO THE PROPERTY & ROOM

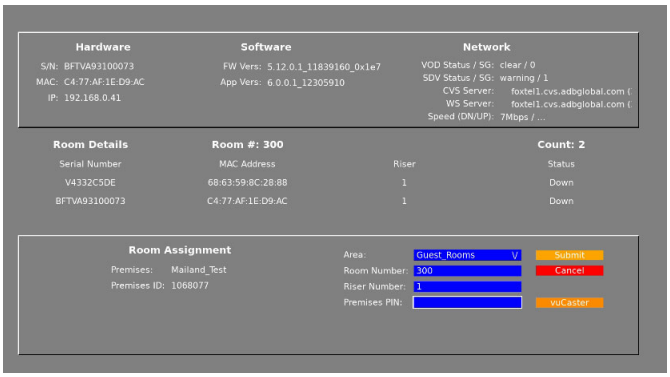
Continue with the following steps to finish the installation. **Note**: If the in-room install screens do not display, but the box boots, this may be a networking issue with local DNS and/or the information the SBB has that points to the vuTyme server. If unable to resolve, contact your internal support for further investigation.

Install Screen 1



- ❑ Enter the Premises ID in the screen. Use the arrow keys to highlight Submit, then press Select/OK. If you enter the incorrect number, use the left arrow keys to delete the previously entered numbers.
- ❑ Use the arrow keys to select the Assign to Room button and press Select/OK.
- ❑ Note that the screen displays a variety of telemetry at the top that may be useful in ensuring the installation will succeed.
- ❑ Page 2 shows additional telemetry including an internet connectivity speed test (upper-right).

Install Screen 2



- ❑ Select an Area for the box. Areas oftentimes have different channel lineups (e.g. Guest Rooms vs. Common Areas) or may be designated as Digital Signage areas. Press Select/OK to open the list of areas and use the arrow buttons to select the desired area. Press Select/OK again.
- ❑ Enter the room number. For non-room locations (such as TVs in common areas) use your own numbering conventions or consider using the following scheme: 7000 and up - common spaces, 8000 and up - property bar/restaurant, 9000 and up - stand alone bar. **Important**: Room numbers must be unique **across areas**. For example, you cannot have a room 500 in a Guest Rooms area and a room 500 in a Common Space area. The install screens will alert you if you try to use the same room number in different areas.
- ❑ Enter the riser number (3-digit numeric). Often this field is unused so enter any number as you see fit.
- ❑ Enter the PIN and then select **Submit** (almost always 1234). The PIN is found on the Premises Info screen in the vuTyme Manager portal.

1.6.3 REGISTRATION COMPLETION

Continue with the following steps to complete SBB registration.

1. The boot screen progresses as follows:
   - ❑ 1 dot means the booter has been launched.
   - ❑ 2 dots mean that drivers plus middleware have been launched.
   - ❑ 3 dots mean that the client UI has been launched.

2. Allow a few moments for the vuTyme client to display, as shown below:

3. For some but not all service providers, an Installation “hit” must sent to the SBB to authorize programming.
4. Signal levels can be monitored for all or parts of the property using vuTyme Manager.
5. If there appears to be SBB performance issues and WiFi is used for SBB network access, WiFi signal level requirements are provided in step 2 on p. 8.
6. A broadband/internet speed test can be performed on the SBB. Refer to “Box Support Menus & Diag Screens” on page 15.
7. Program the remote control for the TV. Specific instructions are not provided in this document.

   - ❑ If the box is having compatibility issues with the TV, contact a vuTyme Manager user at the Service Provider to possibly set some overrides (resolution, audio, HDCP).
   - ❑ Check the Video. Verify the delivery of expected channels (premiums, in the clear, and SDV). Check VOD (free on-demand).
   - ❑ Test DVR Lite if offered to the property (e.g. pause live TV).
   - ❑ Be sure the TV volume is appropriate. If no volume is present, check the remote to be sure that the volume is not muted.
   - ❑ Dress cables cleanly.

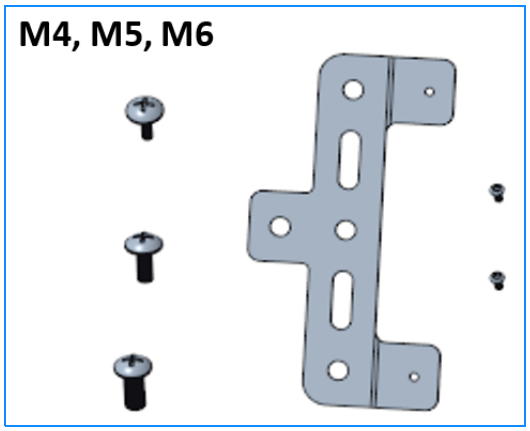
1.7 CONNECT OTHER DEVICES TO SBB

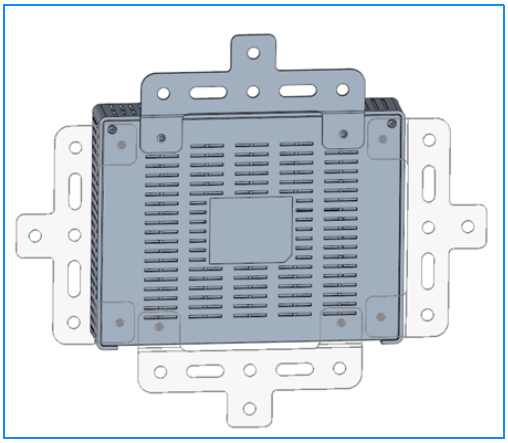
TBD

CHAPTER 2: MOUNT THE SBB

The SBB mounts to the TV as follows.

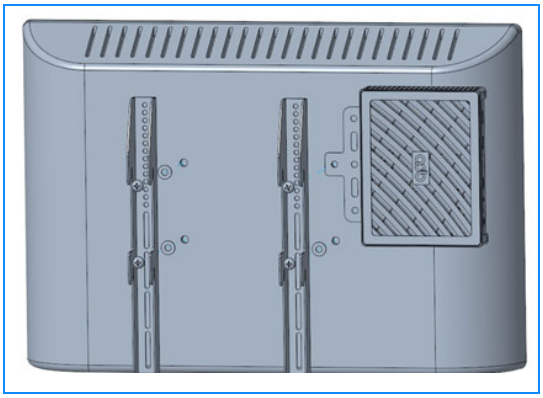
1. Make sure you have appropriate screw drivers: a screw driver P1 (diameter 3) for small screws and a screw driver P0 (diameter 4.5) for spacer screws.
2. The SBB comes with 2 smaller screws for attaching the bracket to the SBB. It also contains 3 screws of different sizes depending on the mounting hole size on the back of the TV. The washers are used only when mounting the SBB with a TV wall mount.
3. Wall mounted SBBs are discussed further in the instructions.





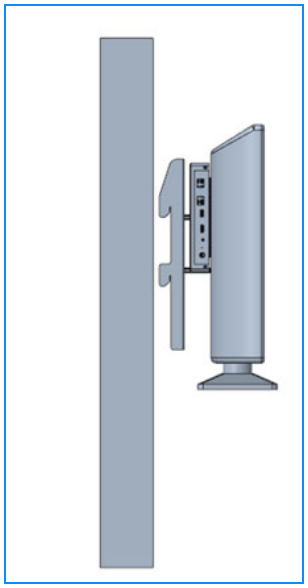
1. Mount the SBB bracket using the two screws provided.
2. The bracket can be mounted to the SBB in all the ways shown.

3. It is common to install the bracket so the SBB's connections' side (HDMI, Power, etc.) faces to the bottom.



4. Use the provided screw or the mounting kit screw.
5. Insert the screw through the mounting rail, then through the outside-center hole of the SBB bracket into one of the 4 holes on the back of the TV.
6. Do not use the washer for that screw.

7. In some cases, you may need spacers to ensure there is enough clearance between the TV, SBB, and wall mount.
8. Such spacers and long screws are not included in the SBB package.
9. They can be ordered as spare parts from ADB. Charter's SAP ordering system provides the following spare part numbers for these kits:
   - ❑ K18-ADB-KIT1Z (spacers)
   - ❑ K18-ADB-KIT2Z (screws)



2.1 USING A USB STICK TO CONTROL SBB NETWORK INTERFACE

See below for various USB stick options to tell SBBs what network interface to use and how (WiFi / Ethernet, with DHCP or Static IP). The network interface is used by SBBs to communicate with the vuTyme server, receive VOD content, and access CDN IP live TV content (if used and configured).

See below for the basic instructions for preparing and using the USB stick and go to the **USB Options** below for the configuration choices.

1. Obtain an empty USB stick. This stick must be configured with one partition as ext4 or fat32.
2. Use a raw text editor and create a new file called **config.ini**.
3. Add the lines from one of the option groups in the USB Options section below to the file. Be sure to substitute in the correct values for the italicized items in the examples below.
4. Save the **config.ini** file to the USB stick when complete. Keep this USB stick to use for other SBBs if needed.
5. Power off the SBB that will use the USB stick. Insert the USB stick to the USB port on the back of the SBB.
6. Power on the SBB and allow it to boot. The Box Settings screen should display. Validate that your interface settings are present in this screen.
7. If the Box Settings does not display, you can re-invoke it by pressing the **#314** rapidly on the RCU.
8. Remove the USB Flash drive from the SBB's USB port. Exit the Box Settings menu (via EXIT key on the RCU). This will cause the SBB to reboot and then the vuTyme application should start normally.

2.1.1 USB OPTIONS

The following options to control the network interfaces via a USB stick are provided.

Important: WPA2-PSK and **WPA3-SAE** are supported on the ADB-2682 SBB platforms.

1. WiFi with DHCP IP

[net]

interface=wlan0

ssid=*wifissidname*

password=*passwordwpa2*

encryption=*WPA2-PSK*

2. WiFi with static IP

[net]

interface=wlan0

ssid=*wifissidname*

password=*passwordwpa2*

encryption=*WPA2-PSK*

ip=*192.168.235.122*

netmask=*255.255.255.0*

gateway=*192.168.235.254*

dns=*192.168.1.4*

3. Ethernet with DHCP IP

[net]

interface=eth0

4. Ethernet with static IP

[net]

interface=eth0

ip=*192.168.235.122*

netmask=*255.255.255.0*

gateway=*192.168.235.254*

dns=*192.168.1.4*

2.2 BOX SUPPORT MENUS & DIAG SCREENS

This section explains all the “hidden” screens that are available to troubleshoot or configure the SBB if needed. See the table below for all options. Each option is explained in their own subsections as referenced.

Screen / Action	RCU Key Code	General Explanation
SBB Reboot	red C button 7328 (i.e. red C button REBT)	This option makes it easier for an on-site SBB reboot when the SBBs cannot connect to the vuTyme server or for other reasons.
Diag Screens	<EXIT><EXIT> 3424 <EXIT> Note: You may have to press Menu (main menu) to execute this RCU sequence. See for examples.	Box FW, SNs, GUI Version Ethernet & IP Information WiFi Information (if used) Tuning Information/Signal Levels for All Resident Tuners DRM status

Screen / Action	RCU Key Code	General Explanation
Setup Screens	red C button and 314 See for examples.	**Note**: These screens should rarely, if ever, be used. Things that can be done with these screens include: Factory Reset, Resolution, CEC Control, Manually Specify How the SBB Contacts the vuTyme Server, DRM info.
Maintenance Screen	Press Menu to display the Main Menu. <EXIT><EXIT>767<INFO><EXIT> Option: press **<RED><RED>767<INFO><EXIT>** See for examples.	View box telemetry View the firmware and UI version on the SBB Move an SBB to another room View the state of VOD server connectivity Remove the box from the property Setup vuCaster and Wi-Fi access point.
Frequency /IP Scans		
Overlay Diagnostics	RED-RED 000 EXIT	Displays information on the current channel tuned along with a variety of other client/SBB diagnostics (similar to below).
		
Remote Box Monitoring, Management, Diagnostics	Done from the vuTyme Manager. Refer to “Monitoring, Management, Reporting, & Troubleshooting” on page 274.	vuTyme Manager provides many comprehensive tools to monitor and manage your deployed SBBs. Refer to the vuTyme Operations Guide for complete information.

2.3 STANDARDS AND COMPLIANCE

The ADB2682WF SBB conforms to the following standards:

The terms HDMI, HDMI High-Definition Multimedia Interface, HDMI trade dress and the HDMI logo are trademarks or registered trademarks of HDMI Licensing Administrator, Inc.

Manufactured under license from Dolby Laboratories. Dolby, Dolby Audio and the double-D symbol are registered trademarks of Dolby Laboratories Licensing Corporation.

Safety Information

Product has been manufactured to meet American and international electrical and safety standards, but you must take care to operate it safely.

It is important that you read these safety instructions. If you have any doubts about the installation, operation or safety of Product please consult your service provider.

Alterations or any other changes to the product are not allowed without the permission of the manufacturer.

⚠ WARNING

Contact with electrical connections can be lethal or can cause a severe electric shock. To avoid this risk:

- Never remove the top cover from Product. There are no user-serviceable parts inside it.
- Never attempt to open the external power supply adapter, as there are high-voltage live parts inside. There are no user-serviceable parts inside it.
- Make sure all electrical connections are properly made.
- Do not connect any equipment to the power point until you have properly connected all the other leads.
- Disconnect the external power supply adapter from the power point before you disconnect any equipment from the rear panel of Product.
- Never push anything into holes, slots or other openings in the case.
- Do not expose batteries to excessive heat such as sunshine, fire or the like.

The model number, serial number and electrical rating of Product are given on the housing.

⚠ CAUTION

- ✓ Product shall be used and installed indoor with a maximum ambient temperature of 45° C (113° F).
- ✓ Allow some free space above and around Product to ensure a free flow of air around it.
- ✗ Don't block the ventilation holes of Product.
- ✗ Don't place Product in an unventilated cabinet.
- ✗ Don't stack Product with other items of audio/video equipment in a crowded space. Don't place Product on top of a unit that emits heat (for example, a video recorder).
- ✗ Don't use or store Product in hot, cold, damp or dusty places.
- ✗ Never operate Product on soft furnishings or carpets.
- ✗ Don't put anything on Product which might drip or spill into it. Never stand objects filled with liquids, such as vases, on top of Product.
- ✗ Never place naked flame sources, such as lighted candles, on top of, or adjacent to, Product.
- ✗ Do not pick up or otherwise move Product while it is connected to the power supply. If you want to move Product, first disconnect it and then wait at least 30 seconds before continuing.

CONNECTING TO THE POWER SUPPLY

You must not plug Product into the mains supply until you have connected Product to the other equipment in your system.

Product is designed for use only with the supplied external power supply adapter. On the external power supply adapter there is a label that specifies the correct mains power supply input for it. Do not connect the external power supply adapter to any other power supply.

After connecting all other equipment, connect the 12V lead to Product first and then insert the mains plug into the power outlet.

The only way to disconnect Product from the power supply is to remove the external power supply adapter from the power point (i.e. not by removing the 12 V lead from Product). Therefore you must install Product near to the power point, which should be easily accessible.

If you are in any doubt about the external power supply adapter or its connection, consult a licensed, qualified electrician.

FEDERAL COMMUNICATIONS COMMISSION INTERFERENCE STATEMENT

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.

RF EXPOSURE WARNING

This equipment must be installed and operated in accordance with provided instructions and the antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter. End-users and installers must be provided with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.

CAUTIONS:

- Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the equipment.
- The availability of some specific channels and / or operational frequency bands are country dependent and are firmware programmed at factory to match the intended destination. The firmware setting is not accessible by the end user. This device is Master equipment, the transmission is disabled in the 5600-5650MHz band.
- FCC regulations restrict the operation of this device to indoor use only.
- The operation of this device is prohibited on oil platforms, cars, trains, boats, and aircraft, except that operation of this device is permitted in large aircraft while flying above 10,000 feet in the 5.925-6.425 GHz band.
- Operation of transmitters in the 5.925-7.125 GHz band is prohibited for control of or communications with unmanned aircraft systems.
- This device is slave equipment, the device is not radar detection and not ad-hoc operation in the DFS band.

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