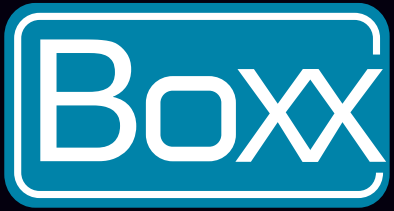


MERIDIAN

User Guide 2.5

October 2012





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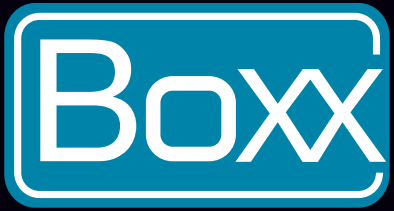
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BEFORE USING THE MERIDIAN SYSTEM

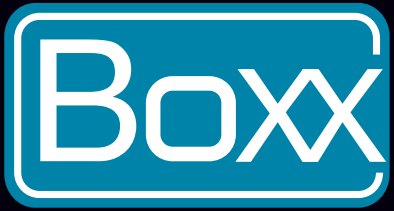
Before using the Meridian system for the first time, please check the following to ensure the unit hasn't been damaged during shipping.

1. Visually inspect outer casing, plugs, screen and cables to ensure there is no damage.
2. Slowly rotate the unit to ensure all components are in place and nothing is loose inside the casing.
3. Turn on the units and check if all buttons are working fine.

If you require assistance or are concerned about the working condition of the Meridian system, please email our Service team support@boxx.tv or call +44(0)845 643 2874.

Please visit our YouTube page, which has various instructions videos, tips and tricks when setting up a Meridian system.

<http://www.youtube.com/user/MrScottboxxtv>



SAFETY INSTRUCTIONS

When region is set to US on the system, it complies with Part 15, of the FCC Rules, which declares:

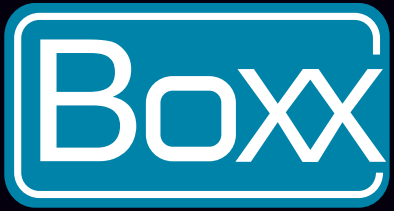
Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

The Meriden system has been engineered to ensure a safe working environment for the operator at all times. With safety in mind, we have tested and will continue retesting the Meridian system to ensure we provide the safest system on the market.

Follow these safety precautions when using the Meridian system:

- Keep all ventilation holes clear and unblocked. Ensure that proper ventilation is provided at all times when in use.
- **Do NOT** insert objects of any kind into the ventilation holes as this may result in damage to the unit
- **Do NOT** use when wet and provide adequate cover when using in the rain.
- **Do NOT** use liquid cleaners or aerosol cleaners on the unit. Use a damp cloth for cleaning.
- **Do NOT** disassemble this product.

If service or repair is required, contact our Service team by e-mail at support@boxx.tv or call +44(0)845 643 2874.



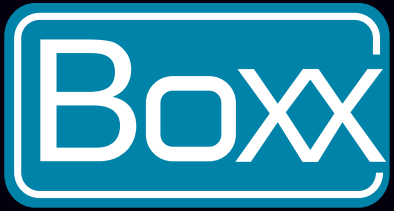
USING THE SYSTEM

The Meridian system has been designed so that it is as compact and light as possible for the operator to use. The casing of the Meridian system is durable and constructed to last, but care should be taken to avoid damaging the sensitive circuit board inside. Do not attempt to open or service the unit yourself.

The internal circuit and antennas are highly tuned and tampering with them will damage the unit.

Keeping as much as possible in 'line of sight' between the cameraman and the receiver will also increase your range.

The Meridian unique transmission system is specifically designed to transmit broadcast quality video through walls and floors from a moving camera. However, all microwave transmission systems will have their range dramatically reduced when attempting to transmit through objects such as concrete, steel, glass, water and the human body.



QUICK SET UP FOR STANDARD OPERATION

Transmitter setup

1. If using a transmitter with a battery plate, place the transmitter on the back of the camera. Clip the camera battery on the back of the transmitter. This will power both the camera and transmitter.

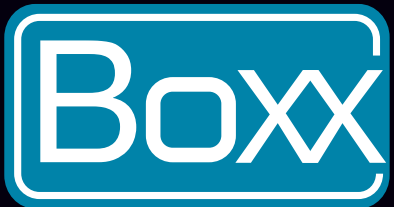
If using a transmitter without a battery plate use the power cable provided.

2. Connect the video from the camera to the transmitter. Note there are different inputs for HDSDI/SDI, composite and component video.
4. If using SDI or HDSDI video the SDI embedded audio will be sent over the link.
3. If using composite or component video, select what audio cable you are going to use.

Usual cables for Meridian transmitter

CBL104 – 3.5mm headphone output.

On the keypad press the 'E' button. This will display the input page. Select test pattern if it is not already selected.



QUICK SET UP FOR STANDARD OPERATION

Receiver setup

1. If using a receiver with a portable battery plate, place the receiver on the back of the monitor. Clip the battery on the back of the receiver. This will power both the receiver and monitor.
2. Connect the video-out from the receiver to the monitor. Note, there are different outputs for HDSDI/SDI, composite and component video.
3. If using SDI or HDSDI video-out, the SDI embedded audio can be used for monitoring.
4. If using composite or component video, select what audio cable you are going to use.

Usual Meridian receiver cables

CBL111: 5 pin XLR to 4 pin Hirose

CBL114: 2 x 3 pin XLR to 5 pin mini XLR

PS1205: 12V 5A power supply unit

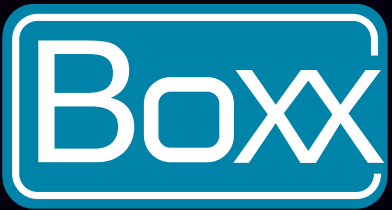
The Mini 5pin XLR will plug into the receiver. The other end will plug into monitor.

You can also monitor the audio via the two headphone sockets on the receiver. We recommend using a headphone with an in-line audio volume control.

Turn the monitor on and select the correct input.

5. Turn on the camera.
6. On the transmitter, press the ***** button. This will display the input page. Select which video input you are using, (SDI, component or composite). After about 5 seconds, the picture from the camera will be displayed on the monitor.

If loss is displayed in the screen, the transmitter is not detecting a video source. Check the BNC cable and that you have the right output on the camera plugged into the correct input. Once the transmitter detects a video input OK will be displayed.



QUICK SET UP FOR STANDARD OPERATION

OB / Receiver's Setup

- Positioning the receiver
- Antenna line-up
- Powering up the unit & menus
- Outputs (Signal)
- Signal strength meters
- Downconverting

Easiest way to learn, how to operate Boxx HD video transmission system, is to watch our instruction videos on www.bbox.tv or on our Facebook page. You will find a number of practical videos, where Meridian system is being used in different environment.

1. Positioning the Receiver

In general, you want to position the receiver, as high as possible, to create a line of sight environment to the transmitter, with any microwave system. Obstacles like trees, crowds, moving vehicles, will all limit the reliability of the signal strength.

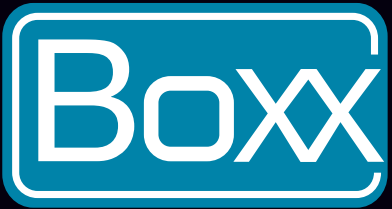
2. Antenna Line Up

As you can see in the photo below, 5 receiver's antennas has been setup where directions and polarisations* are all different, the idea behind the Meridian technology is, that you want each antenna to receive a different signal. Pointing the antennas on the same direction, will reduce performance of the signal.



3. Powering Up & Menu Settings

The Meridian receivers work on a voltage between 10-18V DC, using 4 Pin XLR cable.

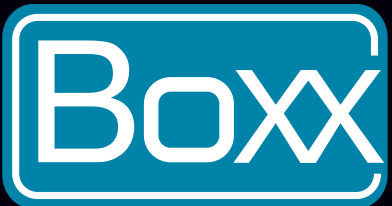


QUICK SET UP FOR STANDARD OPERATION

Once unit is powered up, you will see the LCD screen light up, and after approx. 10 seconds, you will be able to navigate the Menu. Home screen will show you the frequency you are currently working on and antenna signal strength level.

Before configuring your Receiver, you need to analyze the area to see if there is no one running a transmitter on your selected frequency. You simply need to power up the receiver (Transmitter needs to be turned off) and you should see antenna bars empty and not active, if there is any antenna bars movement, try changing the frequency till you find an empty channel.



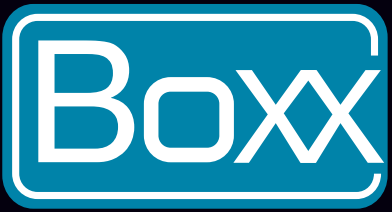


QUICK SET UP FOR STANDARD OPERATION

5. Signal Strenght Meters

Once the transmitter is turned on, and screen is showing "Video Present", 5 bars will show you the signal strenght of each antenna, this method can be used to indicate if one of the antennas is broken or not performing as well as it should, you will see that one of the bars is dramatically lower then the rest. Generally they should be no more than 10dB from each other. If you suspect a faulty antenna try placing the Receiver next to the Transmitter to see if signal bars increasing,





QUICK SET UP FOR STANDARD OPERATION

Transmitter Setup

Note: Please refer to the Receiver setup, prior to configuring the Transmitter

- Mounting on the camera
- Antennas mounting
- Powering up the unit
- Inputs (Signal)
- Menu settings

1. Mounting on camera

Transmitter can be mounted using V-Lok or Anton Bauer battery plates, or you can also have a no plate transmitter, which you can power up using 4 Pin Hirose cable.

2. Antennas mounting

For standard operation, only 4 antennas (ANT104) are needed on the Transmitter.

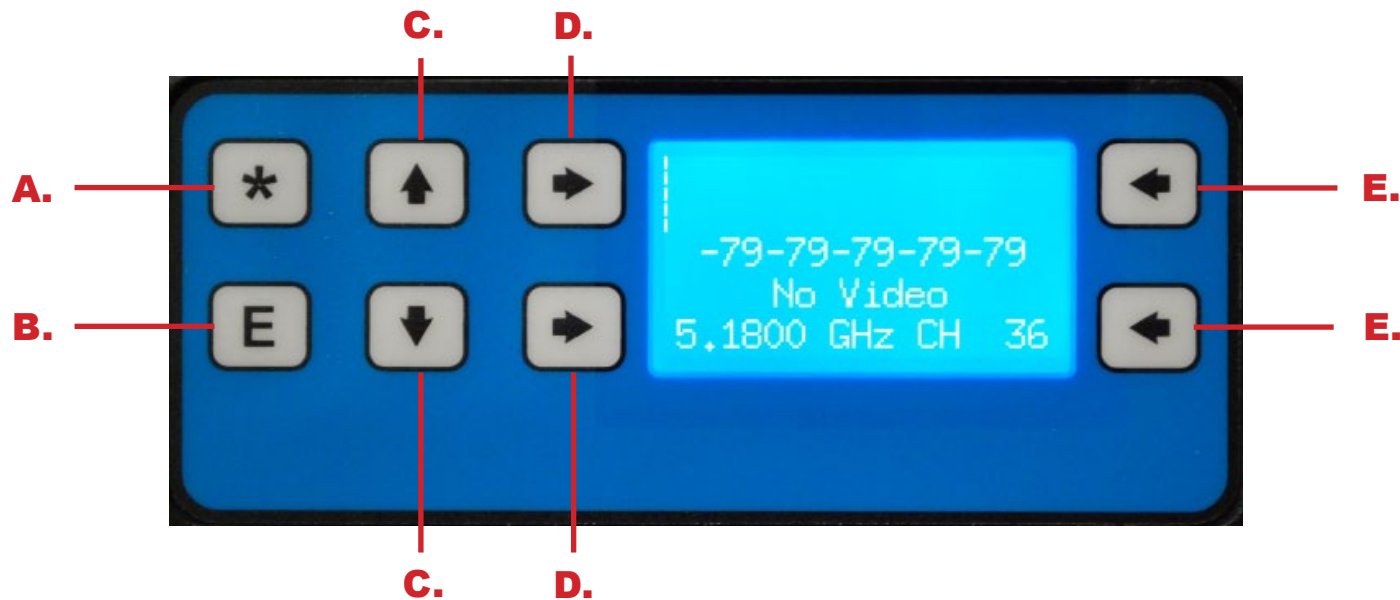
3. Inputs (signal and audio)

Please use the BNC cables to connect camera to the transmitter, if using SD-SDI or HD-SDI signal, the audio from camera will be embedded, when using Composite or Component input, you need to plug the audio cable into your transmitter.

4. Menu settings

You turn on or off the Transmitter by holding * button on the keypad. Press “**E**” to enter the menu, and select the input you want to use. The transmitter also has a test pattern signal which is at 720p. After selecting the input method, you can press * button to go back to the main screen, where you can select frequency, by pressing **Up** and **Down** buttons on the right side of the screen.

TOUCHPAD CONTROLS



- A. Press and hold to power the unit off and on. Press once to return to the "Home Page".
- B. Press to enter displayed menus and sub-menus.
- C. Press to scroll through the menu pages.
- D. Press to select the options displayed on the screen.
- E. Press to select the options displayed on the screen. Allows for channel selection, up and down, on the "Home Page".

RECEIVER MENU



Receiver Home Page

- A. **Signal Bar:** Shows the signal strength of the signal being received.
- B. **Video Signal Indicator:** Indicates if the receiver is receiving video. If the receiver is receiving a signal "Video Present" will be displayed. If no signal is being received "No Video" will be displayed.

Note: Both the transmitter and the receiver MUST be on the same setting or they will not work.

Note: Use the arrows to the right of the LCD screen to manually change the channels.

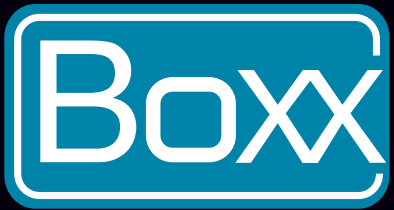


Headphone Level

Use the arrows to the side of the LCD screen to control the left and right audio channels.

We recommend using headphone with a in-line volume controls for easy adjustment of volume. Some recommended headphones are:

- Sony MDR-V250V
- Panasonic RP-HT227
- Philips SHP2500/37
- Sony MDRNC11



RECEIVER MENU

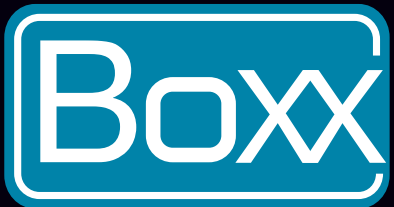


Channel Frequency

Use the arrows to select either Auto Scan or a manual channel.

Note: If you are on the same channels as the transmitter and you are not receiving a picture, check you are on the same country domain as the transmitter.

Note: For the fastest reconnection time use a manual channel. Selecting Auto channel, will delay the connection time.



RECEIVER MENU



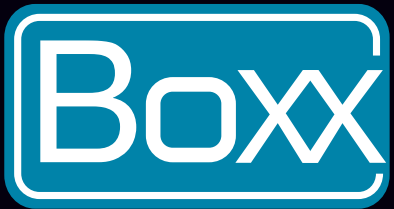
HD Down Converter

At the same time as outputting the HD signal, any HD format will be down converted to composite. Use the arrow keys to select either PAL or NTSC.

Note: Different frame rates will convert better to either PAL or NTSC. If the down conversion looks jumpy or missing frames, try the other standard.

59.98i: Down convert to NTSC
50i: Down convert to PAL
23.98p: Down convert to PAL
24p: Down convert to PAL
25p: Down convert to PAL

You can plug a Modulus or 2.4Ghz analogue transmitter into the Meridian receiver. This allows you to rebroadcast the signal from the camera to inexpensive analogue receivers. As the Modulus is not moving in space you will find the picture quality very stable.



RECEIVER MENU



Region

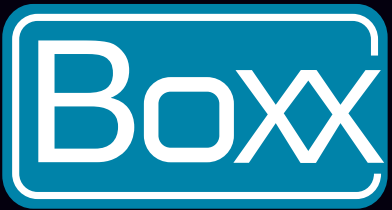
You must select same region on both the Transmitter and Receiver, or the system will not work.

There are 3 preset frequency tables and one custom table. The preset regions are:

- Europe
- USA
- Custom
- Custom 2

Use the arrows to select the country you are operating the unit in.

Note: By selecting the wrong country code you may be in breach of local regulations.



RECEIVER MENU



Menu Level

The menus allow the user to control the features of the system. All the system's functions are held in one of three different folders:

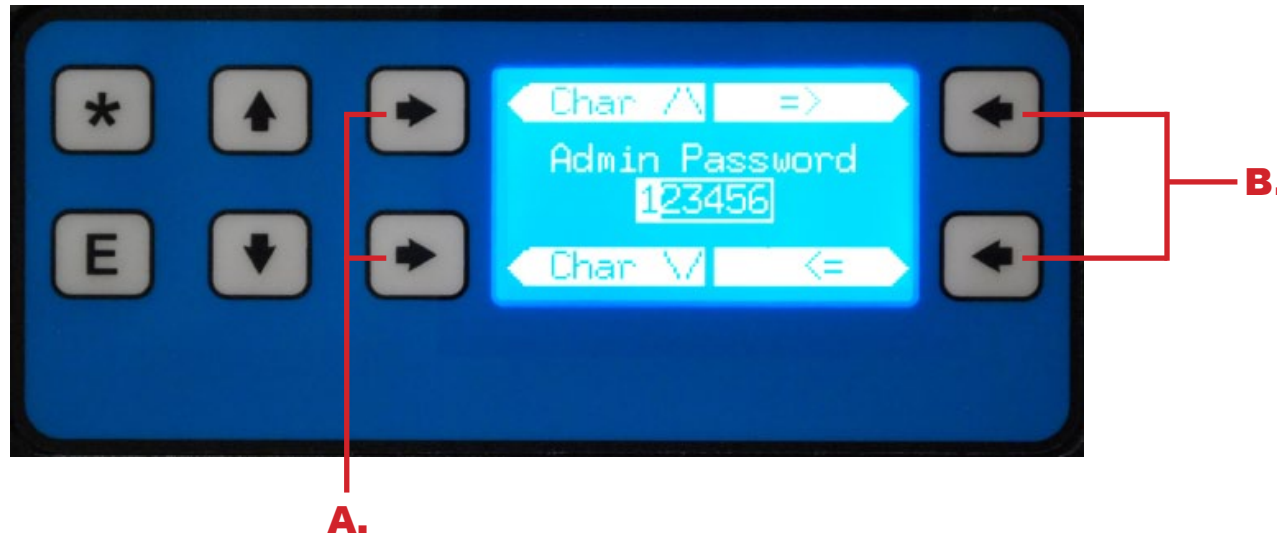
User folder: For menu functions that are used regularly; designed to be the users main operating folder. This folder is NOT password protected.

Admin folder: For functions that rarely changed, and need minimal to no adjustment on a regular basis. This menu is password protected, allowing the main user to lock down functions. The default password for this menu is:

123456

Note: It is possible to move any of the functions from the "Admin" folder to the "User" folder eliminating the need for passwords. How to do this will be covered later in the manual.

RECEIVER MENU



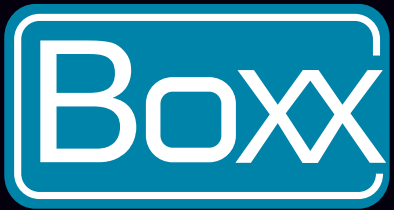
Entering Passwords

The “Admin” folder is password protected. To access the “Admin” folder enter the default password.

A. Use the arrows to the left of the LCD screen to scroll through the characters.

B. Use the arrows to the right of the LCD screen to move the cursor right or left.

Press “E” once the password has been entered.



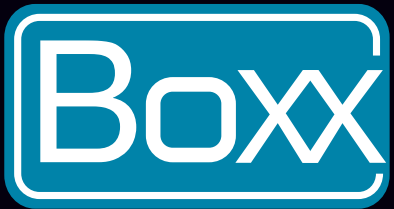
RECEIVER MENU



Customising the “Admin” Password

Once the default password has been entered, and within the “Admin” folder, the password can be changed to one that is client specific. On the “Admin Password” page, use the arrows to the left of the LCD screen to select new digits, and the arrows to right of the LCD screen to move the cursor. Once the new password has been chosen exit out of the page.

Note: If you forget the password the unit will have to be returned to us to be reset. If you change the password we suggest you write it down here



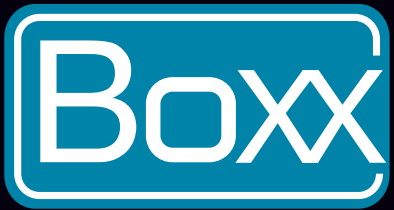
RECEIVER MENU



Custom and Custom 2 Table Name

Additional channels and power levels have been set up in the "Custom Frequency" table for use in other countries that have not been pre-set.

It is advised to check with local regulations before using any of the custom table settings, as some settings may be a breach regulations.



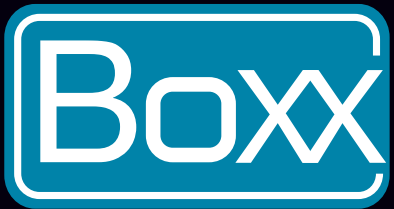
RECEIVER MENU



Unit Name

This setting is only active when in the Unicast mode (encrypted one to one transmission). It is used to identify the units that are being matched together. (ie. Roof top, monitor 4, camera RX 4).

Use the arrows to the left of the LCD screen to change the characters. The arrows on the right of the LCD are used to move the cursor to the right and left.



RECEIVER MENU



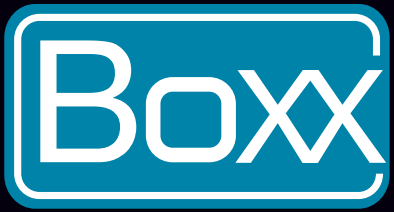
Permissions

Any menu page can be moved into one of the two folders; allowing the pages used everyday to be put in the "User" folder, and the menu pages that are used less frequently, or ones that don't need to be changed regularly into the "Admin" folder.

Every page in the "Admin" folder can be moved to the "User" folder to limit the need of a password.

To change a menu page permission:

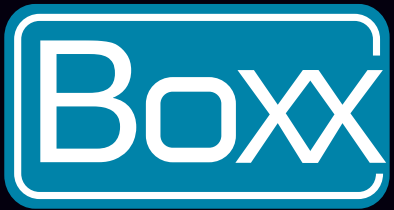
On the "Permissions" page use the arrows to the left of the LCD to scroll through the receiver menu pages, and the arrows on the right of the LCD to choose the folder the menu is to be kept. (either "User" or "Admin")



RECEIVER ANTENNA CONFIGURATION

When setting up the Meridian receiver antennas, make sure to adjust the antennas so that they are all facing different directions, utilising a combination of different polarisations. This antenna set-up allows the Meridian receiver to combine different signals from reflections off walls and other structures, creating a stronger overall signal and increasing the reliability. Having all the antennas facing the same direction will decrease its performance. Please note different polarisation of the antennas.





TRANSMITTER MENU



Transmitter Home Page

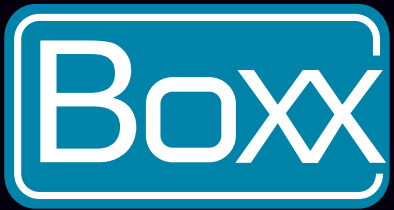
A. Input Select: Indicates what input is being transmitted. (SDI, Composite/Component test pattern)

B. Transmission Mode: Indicates whether the system is in “Broadcast” or “Unicast” mode.

Note:

C. Frequency Channel: Indicates the channel on which the transmission is being transmitted.

Note: Use the arrows to the right of the LCD screen to manually change the channels. For the fastest connection, always use manual channel selection.



TRANSMITTER MENU



Input Select

Allows you to select the type of input is being used.

- SDI/HD-SDI
- Composite
- Component
- Pattern

Note: Pattern will generate an internal 720p test signal with tone.

TRANSMITTER MENU

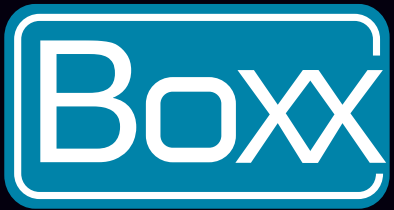


Transmitter Channel Frequency

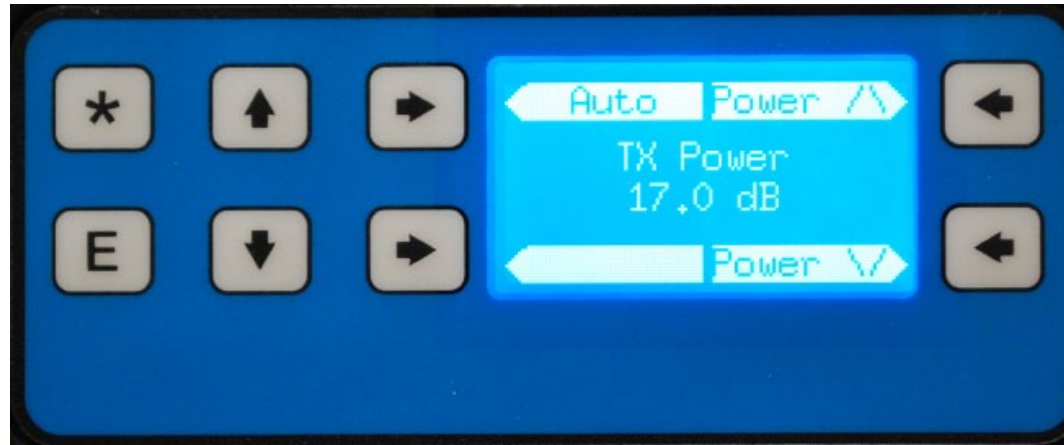
Use the arrows to select either Auto or a manual channel.

Note: If you are on the same channels as the transmitter and you are not receiving a picture, check you are on the same country domain as the transmitter.

The Channel Frequency can also be manually selected by using the arrows to the right of the LCD screen on the "Home Page".



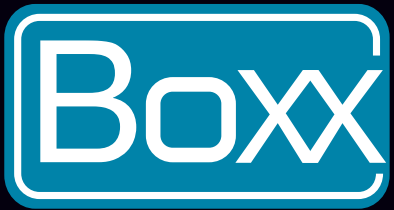
TRANSMITTER MENU



Transmitter Power Level

Use the arrows to the right of the LCD screen to adjust the transmitting power level, or select "Auto".

Note: This function will only work when using the "Custom Frequency" table and has no effect when using "USA", "Europe" or "Japan" settings.



TRANSMITTER MENU



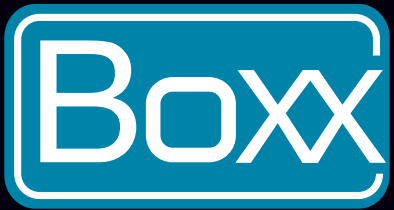
Region

There are 3 preset frequency tables and two custom tables. The preset regions are:

- Europe
- USA
- Japan

Use the arrows to select the country you are operating the unit in.

Note: By selecting the wrong country code you may be in breach of local regulations.



TRANSMITTER MENU



Menu Level

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Admin folder: For functions that rarely changed, and need minimal to no adjustment on a regular basis. This menu IS password protected, allowing the main user to lock down functions. The default password for this menu is:

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Note: It is possible to move any of the functions from the "Admin" folder to the "User" folder eliminating the need for pass-

TRANSMITTER MENU



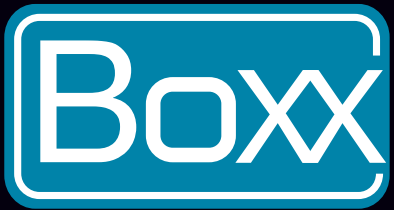
Entering Passwords

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A. Use the arrows to the left of the LCD screen to scroll through the characters.

B. Use the arrows to the right of the LCD screen to move the cursor right or left.

Press “E” once the password has been entered.



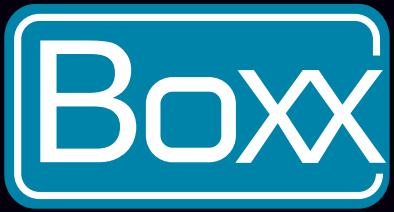
TRANSMITTER MENU



Customising the "Admin" Password

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Note: If you forget the password the unit will have to be returned to us to be reset. If you change the password we suggest you write it down here

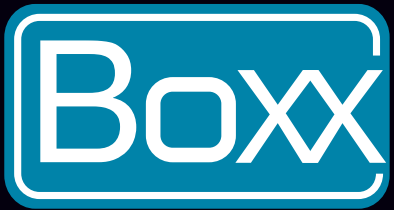


TRANSMITTER MENU



Analogue Audio Level

Use this setting to adjust the analogue audio input level. +3dB adds level and +6dB add twice as much again.



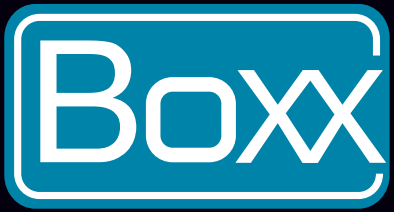
TRANSMITTER MENU



SDI Audio Channels

The transmitter transmits 2 channels of audio you can select any of the 16 channels to be transmitted.

Note: 01 and 02 are the most common channels to use.

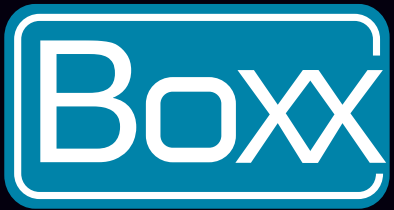


TRANSMITTER MENU



Component Gain

The Gain and Offset can be adjusted for the component input level.



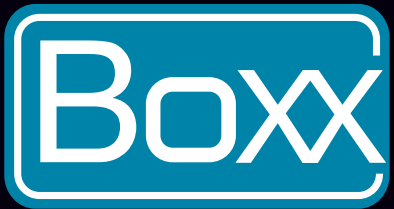
TRANSMITTER MENU



Unit Name

This setting is only active when in the Unicast mode (encrypted one to one transmission). It is used to identify the units that are being matched together. (ie. roof top, monitor 4, camera RX 4).

Use the arrows to the left of the LCD screen to change the characters. The arrows on the right of the LCD are used to move the cursor to the right and left.



TRANSMITTER MENU



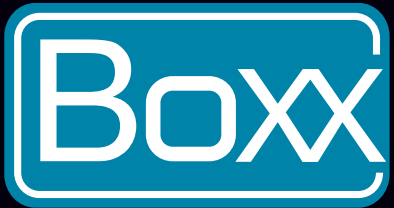
Permissions

Any menu page can be moved into one of the two folders; allowing the pages used everyday to be put in the "User" folder, and the menu pages that are used less frequently, or ones that don't need to be changed regularly into the "Admin" folder.

Every page in the "Admin" folder can be moved to the "User" folder to limit the need of a password.

To change a menu page permission:

1. Go to the "Admin" folder, and enter the password.
2. On the "Permissions" page use the arrows to the left of the LCD to scroll through the receiver menu pages, and the arrows on the right of the LCD to choose the folder the menu is to be kept. (either "User" or "Admin")



WARRANTY

The system is sold with a limited warranty of 12 months (Warranty term) by Boxx TV Ltd (Manufacturer). Specific advice, repairs and replacement options are available to the original purchaser in the event the Meridian system fails to conform to this warranty.

The Manufacturer shall not be responsible for product damages caused by natural disasters, fire, static discharge, misuse, abuse, neglect, improper handling, unauthorized repair, alteration or accident.

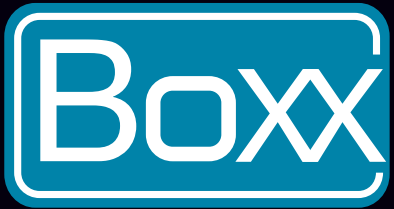
The Manufacturer shall not be liable for any special, incidental or consequential damages, even if informed of the possibility thereof in advance. You must inform your place of purchase within 28 days of detecting a defect in material or workmanship not conforming to the specifications (see Specifications section of this guide) of the Meridian system.

During the Warranty term, the Manufacturer will, at its discretion and without extra charge, as your exclusive remedy, repair or replace the products that do not comply with this warranty; or failing this, will reimburse the purchase price of the system. This amount will be based on length of ownership and may be reduced in accordance with general accounting principles.

How to use your warranty

You must present receipt of purchase or any other proof of purchase bearing the date of purchase and the product serial number. The Manufacturer reserves the right to refuse free-of-charge warranty service if the requested documentation cannot be presented or if the information is incomplete or incompatible with the Reseller's records. Repair, at the

Manufacturer's option, includes replacement of boards or parts with new or functionally equivalent reconditioned parts or boards. The Manufacturer does not warrant the installation, maintenance or service of the system, parts or accessories.



WARRANTY

What is not covered by the warranty?

The warranty is not valid in the following instances;

- Defects due to damage, from misuse, tampering, neglect or lack of care and in case of alterations or repair carried out by unauthorised persons.
- Defects or damage caused by misuse, connection to incompatible sources, accident or neglect.
- Defect or damage was caused by improper or unauthorised testing, operation, maintenance, installation, adjustment or any alteration or modification of any kind.
- The unit has been disassembled or repaired by persons other than the Manufacturer
- Defect or damage has been caused by moisture, liquid or food spills.
- All casing and other externally exposed parts that have been scratched or damaged due to normal customer wear and tear.
- Periodic maintenance and replacement of parts due to normal wear and tear.
- The system has been packed and transported using standard packing materials.

The Manufacturer recommends non-static materials such as non-static bubble wrap is used at all times.

Out of warranty repairs

If you request the Manufacturer repair the product at any time after the Warranty term, or where the warranty does not apply due to the nature of the defect, the Manufacturer may at its discretion carry out such repairs. This will be subject to you paying the Manufacturer fees for such repairs that will be agreed prior to commencement of repairs. The Manufacturer may also refer you to an authorised third party to carry out repairs.

The above is correct at time of printing October 2012