Dejero

LIVE+ GoBox
User Guide

July 2015
D-UG112-003

www.dejero.com

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Symbols and Conventions

This document uses the following symbols and conventions:

	Note: Shares important related information, reminders, recommendations, and suggestions
	Caution: Means that the action you take could cause harm to your equipment/device, cause you to lose data, or void your warranty.
	Warning: Describes an action that could cause you physical harm. Follow the guidelines in this document or the device itself when handling electrical equipment.

Contents

Warranty and Liability

Reasonable care has been taken in preparing the information in this document. However, this document may contain omissions, technical inaccuracies, or typographical errors. Dejero Labs Inc. does not accept responsibility of any kind for customers' losses due to the use of this document. Product specifications are subject to change without notice.

Due to the nature of wireless communication, transmission and reception of data can never be guaranteed. While Dejero strives to provide high-quality video transmission without significant delays, environmental and cellular network conditions beyond Dejero's control may result in data delay, corruption, or loss.

Dejero accepts no responsibility for and is not liable for any loss or damage, including, but not limited to, revenue or personal injury, resulting from delays in, errors in, or failure to transmit or receive data using the Dejero LIVE+ Platform.

Warranty on the Dejero LIVE+ GoBox is voided if the case is opened. For details, see Handling and Operating Conditions below.

Safety Warnings and Hazards

Read this section in its entirety before operating the LIVE+ GoBox.

Class A device

This is a Class A product intended to be used in a commercial, industrial or business environment. In a domestic environment this product may cause radio interference, in which case the user may be required to take adequate measures.

Federal Communications Commission statement

LIVE+ GoBox complies with Part 15 of the FCC rules for a Class A device.

Industry Canada statement

LIVE+ GoBox complies with Industry Canada ICES-003 Class A specifications.

RF Exposure Notice

THIS DEVICE MEETS THE GOVERNMENT'S REQUIREMENTS FOR EXPOSURE TO RADIO WAVES.

LIVE+ GoBox is a radio transmitter and receiver. It is designed and manufactured not to exceed the emission limits for exposure to radiofrequency (RF) energy set by the Federal Communications Commission of the U.S. Government and Industry Canada.

Explosive Atmosphere

The LIVE+ GoBox should be powered off in an area with a potentially explosive atmosphere; such as fuelling areas, fuel or chemical transfer or storage areas, below deck on boats, or in areas where the air contains chemicals or particles; such as grain, dust or metal powders. It is rare, but there is potential for PC-like devices, such as the LIVE+ GoBox to generate sparks, which could trigger an explosion. Do not store the LIVE+ GoBox in the compartment of a vehicle that contains flammable gas, liquid, or explosives.

Blasting or Construction Sites

The Dejero LIVE+ GoBox should be powered off in areas where blasting is in progress, where explosives may be present, or near any other equipment that is susceptible to radio interference.

Hospitals

The Dejero LIVE+ GoBox should be powered off near medical equipment or life support systems, or near any other equipment that is susceptible to radio interference. Hospitals or other medical facilities often ask visitors, patients, and staff to switch off all electronic devices in some areas. Please make sure that you follow any local rules and regulations.

Aircraft

The Dejero LIVE+ GoBox should be powered off and not operated in any aircraft, whether in flight or on the ground; systems onboard the aircraft could be affected by radio interference.

Driving

The driver or operator of any vehicle should not operate the Dejero LIVE+ GoBox while in control of a vehicle. Doing so will detract from the driver or operator's control and operation of that vehicle.

Medical Implant Devices

It is possible that the radio modems in the LIVE+ GoBox may interfere with some types of medical devices (such as cardiac pacemakers or implant defibrillators), when operated close to the device. You should seek advice from your doctor before operating the LIVE+ GoBox. For personal health and safety, persons concerned about exposure should maintain a minimum distance of 200 mm (8") from the LIVE+ GoBox while it is powered on.

Hearing Devices

People with hearing aids or cochlear implants may experience interfering noises when using mobile devices, or when one is nearby. The level of interference depends on the type of aid or implant, the type of mobile device, and the distance between the two. Increasing the distance between the LIVE+ GoBox and the hearing device may reduce interference.

The equipment is serviceable by authorized Dejero personnel only.
Disconnect all power sources before servicing the unit.
The socket-outlet shall be installed near the equipment and shall be easily accessible.

CAUTION – motherboard battery
RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE.
DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.

Handling and Operating Conditions

Read this section in its entirety before operating the LIVE+ GoBox.

Handle Device with Care

While the LIVE+ GoBox case is durable, it is possible to damage or knock loose the electronics inside if the device is dropped or thrown. Please handle with care. Damage sustained as the result of mishandling the LIVE+ GoBox renders the warranty null and void.

Do Not Open the Case or Store Anything Inside

The LIVE+ GoBox case should remain sealed at all times to protect the sensitive electronics inside and ensure the safety of the operator. Opening the case renders the warranty null and void.

Do Not Disassemble the Product

Only authorized Dejero personnel can open, modify, or repair the LIVE+ GoBox unit. Unless authorized by Dejero personnel, any attempt by the user to open, disassemble, or repair the device renders the warranty null and void.

Keep Air Vents Clear

If the air vents are blocked, the LIVE+ GoBox may overheat and shut down. These vents are located on either end of the device. (The intake is protected by the flat metal panel on the left side.) Please keep these areas clear and unobstructed to ensure adequate airflow.

Keep Device as Cool as Possible

For optimal performance, keep the LIVE+ GoBox in well-ventilated areas, away from heat sources and direct exposure to sunlight. Do not operate the GoBox in temperatures outside of the ambient range (0° C to +40° C / 32° F to 105° F).

Keep Device Dry

The LIVE+ GoBox case is designed to be weather-resistant, but not weatherproof. Keep it covered during inclement conditions. Do not expose to liquid, moisture, or excessive humidity.

The Dejero LIVE+ Platform
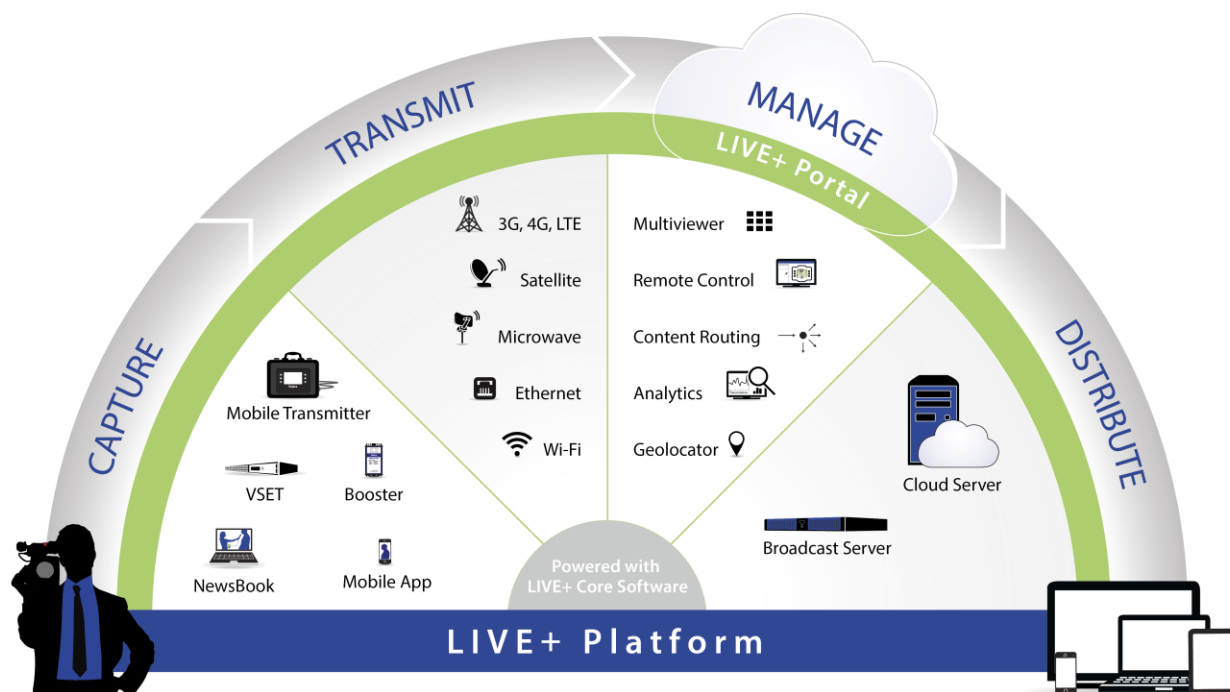
The Dejero LIVE+ Platform of hardware, software, and cloud-based services help you capture, transmit, manage, and distribute high-quality live video from virtually anywhere.

The Dejero LIVE+ GoBox is used to capture and transmit video as part of the complete solution.

About the Dejero LIVE+ GoBox

The LIVE+ GoBox is the most rugged mobile transmitter designed for newsgathering professionals and video content contributors on the go. You can broadcast live from virtually anywhere with bonded cellular, Wi-Fi and portable satellite connections, or record up to 40 hours of HD video for later broadcast.

Dependable and robust

The GoBox is the most ruggedized; professional-grade mobile transmitter is designed for demanding use in the field.

Outstanding performance

The GoBox reliably delivers exceptional picture quality with low latency even when bandwidth is extremely limited.

Easy to use

One-button start up, automatic input and format detection, and an intuitive interface with touchpad buttons next to a large screen simplifies use. Built-in intelligence continuously adapts to network conditions to deliver the best video quality so you can focus on the shot.

Designed for flexibility

You can connect any SDI or HDMI camera to the GoBox. The GoBox's flexibility means you can set it on the ground, wear it on your back, place it away from the camera for optimal antenna performance or broadcast from a moving vehicle.

Manage centrally or in the field

You can locate, monitor, and manage the GoBox remotely from any web browser using the LIVE+ Portal. You can send live or recorded video to the broadcast center for playout or to the cloud for online distribution.

What's included

The LIVE+ GoBox includes the following items:

- LIVE+ GoBox mobile transmitter with either Gold Mount or V-Mount battery plates
- AC power adapter with 4-pin XLR connector
- AC power cord
- Vehicle DC power adapter with 4-pin XLR connector
- PortaBrace shoulder strap with carabiners
- Quick Start Guide

LIVE+ Portal

The LIVE+ GoBox works with the Dejero LIVE+ Portal in the following ways:

- Assign live and recorded video, as well as file transfers from the GoBox to a LIVE+ server

- Geolocate the GoBox mobile transmitter

- Preview and route feeds from the GoBox

- Remotely control and configure the GoBox

- Review analytics about the GoBox performance

Powering the GoBox

You can use the following methods to power your GoBox:

- Gold Mount or V-Mount hot-swappable batteries

- Supplied AC power adapter with 4-pin XLR connector

Two fully charged 95Wh batteries provide approximately two hours of power. Dejero recommends a minimum of two 85Wh batteries.

> ⚠ **Caution**: Dejero's vehicle DC adapter uses a 15-amp fuse. When replacing the fuse in this adapter, you must use a fuse that is the **same type and rating** as the original fuse. For more information, contact Dejero Support.

Install the batteries

1. Slide each battery onto the battery mounting plates on the back of the transmitter.

   When properly inserted, the battery clicks into place and is seated securely on the plate.

Recommended battery requirements

- Nominal voltage of 14.4V (operating voltage of 12.5V to 16V)

- Minimum discharge current of 10A

Remove the batteries

1. Power off the GoBox.
2. Press the release mechanism on the battery mounting plate.
3. Slide the battery off the mounting plate.

> 📄 **Note**: You can replace hot swap batteries without interrupting the GoBox operation. The GoBox will operate on a single battery, if required, of 85Wh or more, Dejero recommends using two batteries at all times.

Starting the GoBox

1. Press the power button on the right side of the GoBox case.
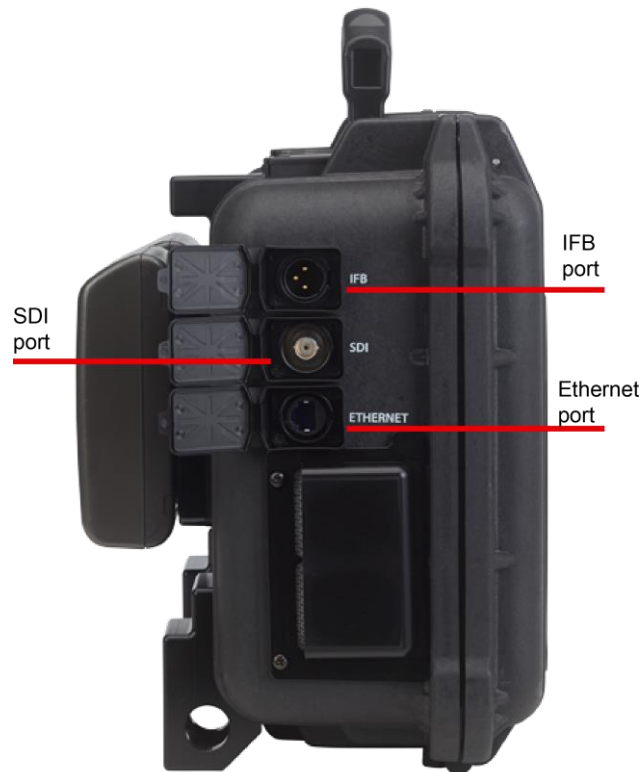
While the transmitter powers on and establishes a network connection, start-up messages appear on the Device Ready screen. For more information about the Device Ready screen, see page 13.

Power
DC IN port

Connection ports

The connection ports are located on the top and side of the GoBox case.

DC OUT port
DC OUT
1.2VDC⎓1.5A MAX
HDMI
SDI port
USB
USB
USB ports

For a complete list of supported audio and video inputs, see page 35.

> **Note**: A 4-prong powered XLR DC IN port is located on the side of the GoBox device (near the exhaust vents).

Connect video

> **Note**: The GoBox supports HDMI and SDI video.

1. Plug the camera's output cable into the video input port on the GoBox.
2. Make sure that all cables are firmly connected.

The GoBox selects the correct video input automatically. If you do not see video in the Preview screen, make sure that the cables are connected properly and that you are using a supported video format.

If you are using a supported video format, the format of the incoming video is detected automatically, so you do not need to set this manually.

Connect Ethernet

Using an optional Ethernet connection, you can choose to transmit using Ethernet only or broadcast over Ethernet and cellular networks simultaneously.

1. On the Device Ready screen, press the Configuration touchpad button.

2. At the Configuration screen, press the Operation touchpad button.

3. At the Operation Mode screen, press the Connection touchpad button to scroll through the options: **All**, **Ethernet, Modems**.

The Ethernet connection sends data using the UDP protocol on ports 6000 and 6001. Make sure that these ports have unrestricted access to the Internet.

The Ethernet port is configured via DHCP.

> **Note**: For more information, see Configuring the transmitter on page 16.

Connect IFB

> **Note**: Connecting IFB is optional.

Interruptible Foldback (IFB) acts as a one-way communication from the LIVE+ Broadcast Server to the GoBox. It enables communication and cueing from the studio crew to the reporter in the field. The station sends a program feed to the reporter's earpiece, which is connected to the GoBox. The IFB output from the GoBox is a balanced 3-pin XLR at a +4 dBV level.

For more information on the LIVE+ Broadcast Server, refer to the *LIVE+ Broadcast Server User Guide*.

1. Connect your audio device (earpiece, headset, or IFB amplifier input) to the 3-pin XLR IFB connector on the GoBox.

As soon as a live stream starts, IFB is on an **IFB Active** appears on the GoBox. For more information about starting a stream, see page 20.

As the GoBox receives voice packets from the server, the sound level varies. The Jitter Delay value should be less than 500ms during normal operation, but it might be higher if the modems have poor wireless coverage.

Specify camera input type

After the camera is connected and a video preview appears on the GoBox, use the Configuration screen to verify your settings. On this screen, you can check your audio, video and video format type, connection type, and latency settings.

For more information about the configuration settings, see page 16.

DC output

You can use the DC output of the GoBox to power a Dejero LIVE+ Booster or other supported devices (such as a long-range Wi-Fi radio). If you use the DC output, you need a specialized cable. You might also require a power-over-Ethernet (PoE) adaptor. For more information about using the DC output, contact Dejero Support.

The DC output is rated at 12 volts and 1.5 amps continuous. It is fully protected against overload current.

USB ports

The GoBox has two user accessible USB ports. You can use these ports for connecting USB memory sticks (for file transfers), for connecting support peripherals (such as a keyboard or mouse), or for connecting other supported devices.

Device Ready screen

When the LIVE+ GoBox is on, the Device Ready screen appears.

Various messages, including status of the transmitter and error messages, appear on this screen.

When you power on the GoBox, it performs a diagnostic test and Device Ready appears when the transmitter is ready to use.

> **Note**: The LIVE+ Portal administrator must activate the transmitter before it can be used. If your administrator has not activated the transmitter, an **Inactive Device Error** appears.

Individual Connection meters

The GoBox communicates data through modems or an Ethernet connection. Individual connection meters show the active data transmission rate. The transmission rate appears in increments of 500 Kb/s.

A dot at the bottom of each meter indicates the status of the connection:

- a green dot indicates a successful network connection
- a grey dot indicates that the cell carrier signal is out
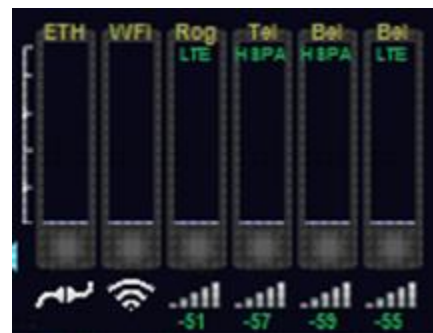
of range, or is not responding to connection requests

- a pulsing grey icon indicates that transmitter is initializing a connection

When you start a live stream on the transmitter, each modem connection displays the network type (HSPA, LTE, UMTS, etc.). A received signal strength indicator (RSSI) value also appears to show approximate strength of the connection.

Note: After you press Play for a live broadcast, cellular coverage appears (indicated by a green dot).

Combined Transmission meter

The Combined Transmission meter shows the total data transmitted by all connections, in increments of 500 Kb/s.

The blue bar indicates the total data transmitted by all connections. The blue arrow is the current target rate for encoding the data and indicates the Encoder Bit Rate. It corresponds to the number located under the server status bar.
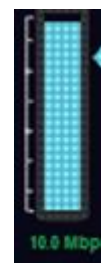
Network and Server Indicators

Glass-to-Glass latency

Latency measures time delay. The delay represents the glass-to-glass latency of the transmission, calculated in real-time. Glass-to-glass refers to the total amount of delay from the camera lens to the video output from the SDI port of LIVE+ Broadcast Server in the studio.

Stream Health indicator

The Stream Health indicator measures the quality of the live video stream received, decoded, and displayed by the output server.

The two components that have the strongest effect on the health of the stream are:

- The number of video frames that arrive at the server in time. Frames that are late or missing can result in paused or stuttering video, or video artifacts such as smearing or discoloration.

- The bitrate at which the video frames are encoded. Excessively low bitrates result in poor quality picture, indicated by blockiness and lack of detail.

When neither of these events occurs, the Stream Health indicator displays as 100%.

Lost or late video frames drop the indicator value very quickly and it displays as 0% in a very short period of time. If there are no lost or late frames for 5 seconds, the indicator returns to 100%.

If the encoder bitrate is consistently low, the indicator displays a value between 0% and 100%. The number under the server percentage shows what the encoder is running at. It corresponds to the blue transmission meter.

Transport Resolution

For best picture quality, even in challenging network conditions, the GoBox adjusts the transport resolution automatically. The transport resolution is at the bottom of the screen, along with the input resolution and the output resolution.

- Input: video resolution from the attached camera

- Transport: resolution of the video transmitting to the server

- Output: resolution as configured for the server's output

Mode selection

In the center of the Device Ready screen, on the right side is the Mode button. You can use this option to switch quickly between Live, Live and Store & Forward, and Store & Forward.

Video window

In the Video window, you can see the live camera feed broadcast by the GoBox.

When the transmitter is broadcasting, an ON AIR message appears in the upper-right corner of the Video window. The destination also appears.

At the bottom of the Video window, sound meters appear. The top bar corresponds to the right input channel and the bottom bar corresponds to the left input channel.

If you do not see a video on the Video window, perform the following actions:

- make sure that all cables are correctly connected

- verify that your video source is on and sending video

- make sure that you selected the correct input (HDMI or SDI)

- verify that the supplied video is in a compatible format

> **Note**: Your administrator can change the server output destination using the LIVE+ Portal.

Start, stop, and configuration options

To start broadcasting live from the transmitter, press the touchpad button beside the **Play** icon.

To stop broadcasting video from the transmitter, press the touchpad button beside the **Stop** icon.

To open the Configuration screen, press the **Configuration** touchpad button. Use this screen to configure camera, sound type, and latency options. For more information about configuring the transmitter, see page 16.

To open the File Transfer screen, press the **File Transfer** touchpad button. For more information about file transfers, see page 25.

To open the Store & Forward screen, press the **Store & Forward** touchpad button. For more information, see page 21.

To return to the previous screen, press the **Exit** touchpad button beside the green dot icon.

Configuring the transmitter

Use the Configuration screen to specify transmitter settings. Use the touchpad buttons to change settings as required.
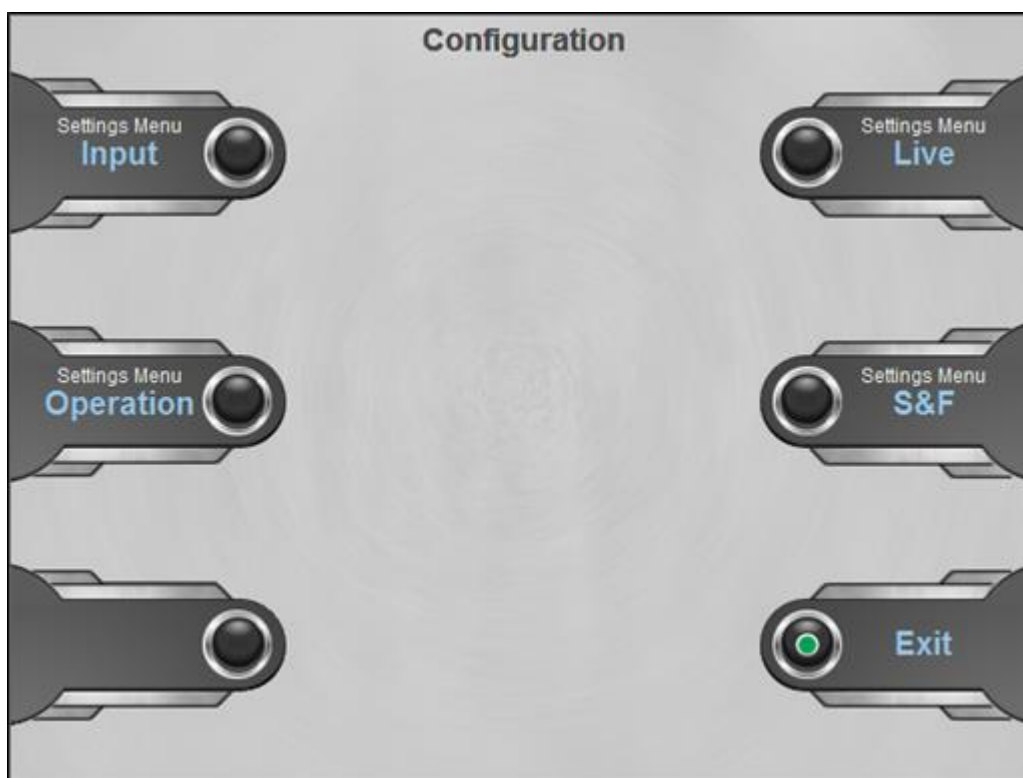
Set the video input

1. On the Device Ready screen, press the **Configuration** touchpad button.

2. On the Configuration screen, press the **Input** touchpad button.

3. Set the video input to **SDI** or **HDMI**.

4. Set the video standard to **NTSC**, **PAL**, or **FILM (1080p, 23.98 fps)**.

> **Note**: When you select either NTSC or PAL, make sure that the video standard from the camera matches your selection on the GoBox.

Configure the latency

Latency is the time it takes for the video to arrive at the server.

1. On the Device Ready screen, press the **Configuration** touchpad button

2. On the Configuration screen, press the **Live** touchpad button.

3. Set the Latency to **Preset**, **Short**, **Medium**, or **Long**.

   - **Preset:** The default latency is preset by your administrator in the LIVE+ Portal. preset. The preset latency can be a value between 0.8 to 20 seconds.

   - **Short:** A 1.5 second latency

   - **Medium:** A 3 second latency

   - **Long:** An 8 second latency

> **Note**: In an area of poor coverage, or very high cellular network traffic, you might achieve better video transmission results with a medium or long latency.

Latency modes

Fixed Latency mode: In Fixed Latency mode, the system attempts to give the glass-to-glass latency requested (either short, medium, long, or preset). If the current network conditions cannot support the requested latency, ERROR 17 appears on the transmitter.

Adaptive Latency mode: In Adaptive Latency mode, the system measures the network conditions during the stream and gradually adjusts the requested latency upwards to a value that is supported by the current conditions.

Up-to Latency mode: In Up-to Latency mode, the system measures the network conditions during the beginning of the stream and provides the shortest possible latency available. If the conditions worsen during the stream, the transmitter gradually increases the latency up to the maximum latency that you set. When the transmitter reaches the maximum latency, the latency remains fixed at the specified value.

Configure the Live Resolution setting

Live resolution is the resolution of the video, as transmitted over-the-air when broadcasting. It is independent of the transmitter input and server output resolutions.

1. On the Device Ready screen, press the **Configuration** touchpad button

2. On the Configuration screen, press the **Live** touchpad button.

3. Set the Live Resolution to **Auto: SD**, **Auto: SD+**, **Auto: HD**, **Auto: HD+**, or **Manual**.

The transmitter monitors the available bandwidth and adjusts the transport resolution automatically to give you the best possible video quality under the current network conditions. The server output resolution does not change, so the video routed to your internal systems remains constant.

Each Auto option has a different maximum bandwidth cap, appropriate for the base video resolution that you send.

Live Resolution	Ethernet Type	Maximum Connection Bitrate
Auto: SD	Normal	2.5 Mb/s
Auto: SD+	Normal	5.0 Mb/s
Auto: HD	Normal	5.0 Mb/s
Auto: HD+	Normal	10.0 Mb/s
Auto: SD	Satellite	3.1 Mb/s
Auto: SD+	Satellite	6.2 Mb/s
Auto: HD	Satellite	6.2 Mb/s
Auto: HD+	Satellite	12.5 Mb/s

If you choose Manual, you set the maximum connection bitrate yourself. This setting can be useful if you want to control your data usage or if you are broadcasting from an area with poor coverage and want to cap the bandwidth at a low rate.

Audio-only Mode

In areas of poor coverage, when the transmitter's available bandwidth falls below 100 Kb/s, the transmitter automatically sends only audio to the server and the last good frame of the video remains on the screen. When the bandwidth increases and remains at 200 Kb/s or better, the transmitter resumes sending video.

> **Note**: If you set a maximum connection bitrate less than 400 Kb/s manually, the transmitter does not switch to audio-only mode.

Configuring the connection type

You can set the type of connection to use for transmitting your data.

1. On the Device Ready screen, press the **Configuration** touchpad button

2. On the Configuration screen, press the **Operation** touchpad button.

3. Set the **Connection** mode to **All**, **Ethernet**, or **Modem**.

   - **All**: The transmitter sends data through all available connections, including cellular, Ethernet and Wi-Fi. If an Ethernet cable is not connected, the transmitter sends data over cellular networks only. If there is no cellular network coverage, but an Ethernet cable is connected to the transmitter, data is sent over Ethernet only. If there is cellular network coverage and an Ethernet cable is also connected, the transmitter uses both connection types simultaneously.

- **Ethernet**: The transmitter sends data over Ethernet and Wi-Fi. An Ethernet cable must be connected to the transmitter. If you select this option but have not connected an Ethernet cable, Error 16 appears on the transmitter.

- **Modems**: The transmitter sends data only over the modem connections. Use this when you are connected to a poor Wi-Fi or Ethernet connection that has high usage and yields little bandwidth.

Set the Operation mode

1. On the Device Ready screen, press the **Configuration** touchpad button.

2. Press the **Operation** touchscreen button.

3. On the Operation Mode screen, press the **Mode** touchpad button to **Live**, **Live and S&F**, or **S&F Only**.

    - **Live**: use for live broadcast to the assigned server output.

    - **Live and S&F**: use for live broadcasting while simultaneously recording a Store & Forward clip.

    - **S&F Only**: use to record a Store & Forward clip.

Set the Ethernet connection type

1. On the Device Ready screen, press the **Configuration** touchpad button.

2. Press the **Operation** touchscreen button.

3. On the Operation Mode screen, press the **Ethernet Type** touchpad button to set the type of connection attached to the wired Ethernet port on the transmitter.

    - **Normal**: Uses a regular Ethernet line, such as a cable DSL connection, a hotel Internet link, or a corporate office Ethernet port.

    - **Satellite**: Uses a high-bandwidth, highly reliable link, but with high latency. This connection is typical of a portable satellite connection. In Satellite mode, the transmitter takes advantage of the high bandwidth available on satellite to transmit a higher quality picture, and uses any other available connections (cellular or Wi-Fi) to supplement the satellite connection.

Configure the Wi-Fi connection

1. On the Device Ready screen, press the **Configuration** touchpad button.

2. Press the **Operation** touchscreen button.

3. On the Operation Mode screen, press the **WI-FI** touchpad button.

4. Perform one of the following actions:

    - To select a specific SSID, press the **Up** or **Down** touchpad button. Press the **Select** touchpad button.

    - To refresh the list of available networks, press the **Rescan** touchpad button.

    - To connect or disconnect from the selected network, press the **Connect** touchpad button.

- To delete a saved profile from the network, press the **Forget** button.

Type a Wi-Fi password

When connecting to a Wi-Fi network for the first time, you need to provide the Wi-Fi password. The GoBox saves the network password and reconnects to the network automatically when it becomes available. If the network does not have a saved profile, you are prompted to type the Wi-Fi password.

1. Use the arrow buttons to navigate the keyboard on the screen to type the password.
2. Press the **Select** touchpad button after each character.
3. When you finish entering the password, press the **Apply** touchpad button.

Transmitting live

Connect to cellular networks automatically

When the transmitter is on, it automatically detects all available cellular connections.

When the GoBox connects successfully, each of the individual card transmission meters show the network name and the signal strength. Each modem connection shows the network type (such as HSPA, LTE, UMTS). A received signal strength indicator (RSSI) value also appears to show approximate strength of the connection. After you press Play for a live broadcast, the grey dot changes to green.

Start a transmission

After you connect your camera to the transmitter, you can start a transmission.

1. Verify that the Device Ready message appears on the Display Ready screen.
2. Press the **Play** touchpad button.

You can monitor the video feed as it is transmitted. ON AIR appears on the Preview screen when you are operating in LIVE mode.

> **Note**: If the Preview screen is black, check that your camera is on and connected. Verify that you are sending supported video format to the GoBox.

Stop a transmission

1. To stop a transmission, on the Device Ready screen, press the **Stop** touchpad button.

The Preview screen continues to show the input from the camera, but Preview appears in the upper right corner of the window. The device remains ready to resume broadcasting. Press the **Play** touchpad button to resume the transmission.

Volume controls

When transmitting live, the volume control appears on the GoBox.

When the GoBox is on, the volume control is set to the neutral position. When transmitting live, press the audio control buttons to change the volume.

Changes to the volume persist until you restart the GoBox.

Store & Forward

With Store & Forward (S&F) you can record up to 40 hours of HD video clips directly onto the transmitter. You can preview, transfer, and delete the clips.

	Note: Assignments are controlled in the LIVE+ Portal. For more information about assignments, see the *LIVE+ Portal User Guide*.

Set up Store & Forward

You can record Store & Forward clips when the transmitter is either in Live & S&F or S&F Only operation modes.

1. On the Device Ready screen, press the **Configuration** touchpad button.
2. On the Configuration screen, press the **Operation** touchpad button.
3. Press the **Mode** touchpad button to select **Live**, **Live & S&F** or **S&F Only**.
4. Press the **Back** touchpad button.
5. On the Configuration screen, press the **S&F** touchpad button.
6. Set the **S&F Quality** field to **Low** (2.5 Mb/s), **Medium** (4.0 Mb/s) or **High** (6.0 Mb/s) to control the encoding rate of the clip.

	Note: Depending on the input content, the final file size of the recorded video might differ from the configured value.

7. Review the Max Clip Length value to see the amount of recording time that can be stored on the transmitter hard drive at the selected recording quality level. The clip length is formatted as: hhh:mm:ss.
8. To select which hard drive on the transmitter to record the clips to, if available, press the **Store To** touchpad button.
9. To format the video stored into the recorded MP4 clips, press the **Clip Compatibility** touchpad button.

   - **Standard**: The standard MP4 clip contains H.264 video and AAC audio. For interlaced input formats, the video is encoded in MBAFF format.

- **QuickTime**: MP4 clip contains H.264 video and AAC audio. Interlaced input formats are encoded in progressive (frame) format for use with QuickTime-based players and editors. You need to tell QuickTime-based software that the file is interlaced.

Select an S&F clip

You can preview all available clips or select clips for further action.

1. On the Device Ready screen, press the **Store & Forward** touchpad button.

2. Press the **S&F Clip** touchpad button to open the S&F Clip Selection screen.

3. Navigate to the clip that you want to select.

4. Press the **Select Clip** touchpad button.

5. Repeat steps 2 and 3 for any additional clips.

6. To perform additional actions on the clips (such as transfer, delete, or backup the clips), press the **Actions** touchpad button.

Each clip is named with the date and time that the clip finished recording, in the following format: YYYY-MM-DD_hhmmss. The selected clip, along with the previous and next preview images appear on the screen.

In the middle of the screen, the **Server Details** table lists the selected clip's transfer server, the transfer complete percentage, as well as the timestamp. If the selected clip was forwarded to the currently assigned server, the transfer details also appear at the top of the table in red.

Transfer a clip

1. On the Device Ready screen, press the **Store & Forward** touchpad button.

2. Press the **S&F Clips** touchpad button.

3. On the S&F Clip Selection screen, select clips.

4. Press the **Actions** touchpad button.

3. Press the **Transfer Clips** touchpad button.

	Note: The GoBox must be connected to a network for the touchpad button to be available.

The Clip Forwarding screen display the name of the transfer server, the transfer complete percentage, a preview of the clip, and the clip name above the preview. The clip preview image reflects the transferred progress.

To stop transferring the clip, press the **Stop** touchpad button. If the clip is not fully transferred, on the S&F Clip Selection screen, you can resume the transfer.

After the transfer is complete, the S&F Clip Selection screen appears.

Back up a clip

1. On the Device Ready screen, press the **Store & Forward** touchpad button.

2. Press the **S&F Clips** touchpad button.

3. On the S&F Clip Selection screen, select clips.

4. Press the **Actions** touchpad button.

4. Press the **Backup Clips** touchpad button.

5. Use the **Up** and **Down** touchpad buttons to select the backup drive.

6. Press the **Select** touchpad button.

7. On the Select Destinations screen, select the backup location.

Delete a clip

1. On the Device Ready screen, press the **Store & Forward** touchpad button.

2. Press the **S&F Clips** touchpad button.

3. On the S&F Clip Selection screen, select clips.

4. Press the **Actions** touchpad button.

5. Press the **Delete Clips** touchpad button.

6. On the Confirmation screen, press the **Yes** touchpad button to delete the clip permanently from the transmitter.

Import a clip

You can import your edited MP4 clips to the LIVE+ GoBox transmitter.

Imported clips appear with the Store & Forward clips. You can transfer them to your server to view and play them back from the LIVE+ Portal.

1. On the Device Ready screen, press the **Store & Forward** touchpad button.

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2. Press the **Clips** touchpad button.

3. Press the **Actions** touchpad button.

4. Press the **Import Clip** touchpad button.

5. On the Import Clip screen, select the drive and folder and the clip to import.

6. Press the Select touchpad button.

7. Use the **Up** and **Down** touchpad buttons to select the clip.

8. Press Import touchpad button.

Record a clip in S&F Only mode

After you configure the Operation mode to S&F Only, press the Play touchpad button to record a clip. The Preview screen shows the video that you are recording.

Statistics about the current clip also appear, including the clip length, resolution, quality setting, and encode rate. Based on the available free disk space and the current encode rate, the estimated time remaining for the current clip appears. The format of the clip length and time remaining is: hh:mm:ss.

> **Note**: The GoBox does not need to be connected to a network to record a clip using S&F Only mode.

Record a clip in Live and S&F mode

After you configure the Operation mode to Live and S&F Only, press the Play touchpad button to record a clip. The Preview screen shows the video that you are recording and [REC] appears

on the screen. This indicator shows that the GoBox is recording the current video to disk during the live broadcast.

> 📄 **Note**: Depending on the connection and network conditions, the resolution of the live broadcast might change, however, the resolution of the video does not change when recording the S&F clip.

If you press the **Stop** touchpad button, you stop both the live broadcast and the recording of the S&F clip. The recorded clip appears on the S&F Clip Selection screen and is available for transfer.

File transfer

You can insert a USB drive into either of the USB ports on the GoBox. After you insert a USB drive, you can transfer files to the server.

Transfer a file

You can insert a USB drive into either of the USB ports on the GoBox.

1. On the Device Ready screen, press the **File Transfer** touchpad button.
2. Use the **Up** and **Down** touchpad buttons to select a drive.
3. Press the **Select** touchpad button.
4. Use the **Up** and **Down** touchpad buttons to navigating to a file.
5. Press the **Select** touchpad button.
6. Press the **Transfer** button.

> 📄 **Note**: You can select multiple files to transfer from within the same folder.

When the files are transferring, you can monitor the progress on the File Transfer screen. The overall progress appears on the main progress bar, as well as each file's transfer percentage. When the transfer is complete, Transfer Complete appears and the File Transfer – Transferred Files screen opens.

Resume a file transfer

On the File Transfer – Transferred Files screen, green checkmarks indicate the files that transferred successfully. Black checkmarks indicate partially transferred files.

You can press the **Resume Transfer** touchpad button to continue the file transfer of any partially transferred file.

File transfer error codes

If an error occurs during a file transfer, an error code appears beside the name of the file. The following errors might occur on the server during file transfer:

- ER1: Unknown Error

- ER2: Invalid File Transfer Session

- ER3: Could not create file – invalid file transfer session

- ER4: Could not create file – invalid directory structure

- ER5: File Not Found

- ER6: MD5 Checksum Failed

- ER7: Could not create file – filename too long

- ER8: Could not create file – filename already exists
- ER9: Could not open file for transport

Remote Control

You can use the Remote Control feature in the LIVE+ Portal to control the GoBox from a remote location. For more information, see the *LIVE+ Portal User Guide*.

When the GoBox is under remote control, a blue border surrounds the screen. The Remote Control is Active message appears at the bottom of the screen.

The Preview screen and the modem and transmission activity continue to appear on the screen and the touchpad buttons work when Remote Control is active.

Auto Start

You can use the Auto Start Mode to initiate a live transmission automatically when you power on the GoBox, or you can specify a delayed start for the live transmission.

1. From the Configuration screen, press the Operation touchpad button.

2. At the Operation Mode screen, scroll through the Auto Start touchpad button options to select **ON**.

3. To set a delayed start for the live transmission, scroll through the Auto Start touchpad button options and choose and option: 1 min, 2 min, 3 min, 4 min, or 5 min.

Note: If you turn on Auto Start, the live stream starts when the transmitter detects video.

Troubleshooting

If you need to place a support call, reference the serial number that appears at the top of Device Ready screen.

Start-up or power problems

If you are using batteries and the GoBox does not power on, make sure that the batteries are fully charged and seated securely on the battery mounting plates. If you are using AC power, confirm that all cable connections are secure and that the XLR power connector is locked firmly into place. Verify that the power indicator light on the AC adapter is on, indicating that power is being supplied by the AC cord.

Problem	Possible solution
LIVE+ GoBox does not power on	Verify that you are using two fully charged batteries (minimum 85Wh) and that they are firmly seated in the battery mounting plates.
	If you are using power accessories, make sure that the connections are secure.
	Then try to power on the GoBox again. If it does not power on, contact Dejero Support.
Low battery warning: "Battery too low to transmit. Insert fresh batteries or use adaptor cable."	Make sure that two fully charged batteries (minimum 85Wh) are firmly seated in the battery mounting plates.
	If the batteries still have some power, you might be able to replace one battery at a time with a freshly charged battery, without interrupting operation.
	Use the adaptor cable to connect the GoBox to an AC power source.
No network coverage	Move to an area with better network coverage. The device detects an available network automatically.
Modem malfunction error: "One or more modems have malfunctioned. Restarting this device may resolve the problem."	To reinitialize the modems: 1. Power off the GoBox. 2. Disconnect the power source. 3. Wait 30 seconds, reconnect the power source, and restart. If this does not resolve the problem, contact Dejero Support.
LIVE+ GoBox is inactive	Contact your system administrator to activate your transmitter.

| Problem	Possible solution
LIVE+ GoBox needs to be assigned to a server output	Contact your system administrator to assign a server output. When assigned, the output destination for the GoBox appears on the Preview screen.
LIVE+ GoBox is disabled	Contact Dejero Support. You will need to restart the GoBox after it is re-enabled.

Video, audio, or transmission problems

Problem	Possible solution
View screen on mobile device is black	A camera is not connected to the GoBox. Make sure that the cable from the camera is securely connected to the correct input port. The video input might not be specified correctly on the Configuration screen. For more information, see page 16.
There is sound, but no picture	The video input might not be specified correctly on the Configuration screen. For more information, see page 16.
There is picture, but no sound	Turn up the audio transmission volume. For more information, see page 21. The sound is set on your camera. To troubleshoot sound settings, see the camera manufacturer's instructions.
Poor server success or poor network connectivity Poor video result at the server end	On the Configuration screen, set the latency to Medium (three seconds) or High (8 seconds). For more information, see page 17.
Device is displaying an error message	For a full list of GoBox error messages and possible solution, see page 30.

IFB problems

If no feedback is coming through earpiece:

- The volume on the broadcast server might be too low. If so, a blue icon appears on the Device Ready screen of the transmitter with a Sound Level of 0.

- An incorrect capture device on the LIVE+ Broadcast Server might be set as the default. If so, **IFB Idle** appears on the Device Ready screen of the transmitter.

- The transmitter might have an internal hardware problem. If so, **IFB Receiving** appears on the Device Ready screen of the transmitter displays IFB Receiving. For more information, contact your Dejero Support.
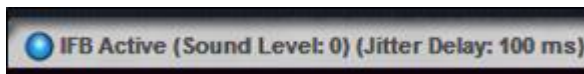
Error messages

The following table outlines possible error messages that you might encounter and possible ways to resolve them. If you call Dejero Support, reference the error number, as listed below.

A complete table is also available in the Dejero Support Hub at http://support.dejero.com

Error Message	Description	Possible Solution
Error 01: The service is temporarily unavailable. Please contact your system administrator.	Database failure on dispatcher.	Try again. If the error continues to appear after several retries, contact your system administrator.
Error 02: Unable to connect. Please contact your system administrator.	Unable to establish connection with dispatcher.	Try again. If the error continues to appear after several retries, contact your system administrator.
Error 03: Software update required. Please contact your system administrator.	The GoBox has old software that requires an update.	Contact your system administrator.
Error 04: Network conditions are	Insufficient connection bandwidth to support codec bit rate.	Move to an area with better network coverage. The

Error Message	Description	Possible Solution
too poor to transmit video.		transmitter will detect available networks automatically.
Error 05: One or more modems have malfunctioned. Restarting this device may resolve the problem.	Unable to dial a network connection.	To reinitialize the modems: 1. Power off the GoBox. 2. Disconnect the power source. 3. Wait 30 seconds, reconnect the power source, and restart. If this does not resolve the problem, contact Dejero Support.
Error 06: No input source detected. Check physical connections and verify configuration settings.	No input source detected, or invalid input source selected. The transmitter cannot find the camera and/or microphone.	Check that all cables are firmly connected to the correct input ports on the GoBox. Check the configuration settings on the transmitter to make sure that they match the connected camera and microphone.
Error 07: Battery too low to transmit. Insert fresh batteries or use adaptor cable.	Insufficient battery power remaining.	Verify that you are using two fully charged batteries (minimum 85Wh) and that they are firmly seated in the battery mounting plates.
Error 08: Device is overheating. Please ensure proper air circulation, clear any vent obstructions.	Internal temperature has reached 68° C (154° F). You should move the GoBox to prevent shutdown at 70° C (158° F).	Make sure nothing is covering or obstructing the air exhaust (located behind the silver vents on one side of the device) or the air intake (beneath the flat metal panel on the other side of the device). If the device does overheat, switch it off and allow it to cool down for several minutes.
Error 09: Device needs to be assigned to a server	The transmitter may not be assigned to a server output in LIVE+ Portal.	Use the LIVE+ Portal to assign a receiver. For more information, see the *LIVE+*

Error Message	Description	Possible Solution
output. Contact your system administrator.	The assigned server output is either turned off or inactive.	*Portal User Guide.*
Error 10: Device is disabled. Please contact Dejero.	Either the transmitter or assigned server is disabled in the LIVE+ Portal.	Enable the transmitter or assigned server in the LIVE+ Portal. For more information, see the *LIVE+ Portal User Guide.*
Error 11: Device is inactive. Please contact your system administrator.	Either the transmitter or assigned server is inactive in the LIVE+ Portal.	Make sure that the transmitter is activated and assigned a server output in the LIVE+ Portal. For more information, see the *LIVE+ Portal User Guide.*
Error 12: Internal hardware error. Restarting this device may resolve the issue.	Some internal components did not initialize when the GoBox powered on.	To reinitialize the modems: 1. Power off the GoBox. 2. Wait 60 seconds then restart the transmitter. If this does not resolve the problem, contact Dejero Support.
Error 13: The device requires service. Please contact Dejero.	A key internal component was not found.	Contact Dejero Support.
Error 14: Server did not respond during initialization. Please contact your system administrator.	Unable to establish connection with assigned server. This error typically occurs because the IP address is not configured properly or the modems on the transmitter are unable to transmit.	If this occurs, contact your system administrator.
Error 15: Server communication has been temporarily interrupted. Unable to transmit through available networks.	Connection with server has been lost during live broadcast. This message is only for your information. It is generated when the transmitter is streaming. If the streaming is stopped, Error 14 appears.	
Error 16: The Ethernet connection type has been enabled, but there are no Ethernet	No Ethernet connections exist.	Connect an Ethernet cable to the GoBox.

Error Message	Description	Possible Solution
connections present. Plug in a valid Ethernet connection or change the connection type back to 'All'.		
Error 17: Network conditions are too poor to transmit reliably at the current latency setting. Either switch to the 'Adaptive' latency mode, or change to a longer latency setting.	Network conditions are too poor to transmit reliably at the current latency setting.	Move to a location with better network coverage. You could also change the latency mode to Adaptive or set a longer latency value.
Error 18: No remaining disk space available for recording Store & Forward clips.	There is not enough disk space on the transmitter to store an additional clip.	Delete existing clips to free up disk space.
Error 19: None of the assigned LIVE Server outputs are currently available (either in use or down).	This error message appears if the transmitter is assigned to an output pool (in the LIVE+ Portal), but all of the outputs in the pool are currently in use or unavailable.	Wait for one of the other users to finish using a LIVE+ server output and try again.
Error 100: Could not broadcast. LIVE Server output in use by another unit/"<MU-serial#>.	This error message appears if the assigned server output is currently in use with another (live stream). If the transmitter currently in use is known, its serial number appears.	Wait for the other user to finish using the LIVE+ server output or stop the other stream.
Error 101: Could not broadcast. Input and output video format combination not supported.	This error message appears if the input/output video format combination is not supported.	Change the output resolution of the server to a different value (50Hz for PAL and 59.94Hz for NTSC).
Error 109: Could not broadcast. Invalid LIVE Server output assignment	This error message appears if the transmitter is assigned to a non-existing or invalid server output and it attempts to broadcast.	Contact your system administrator to assign the transmitter to a valid server output.
Error 110: Failed to create clip on server	This error message appears if there was an error creating a new Store & Forward clip transfer session.	Attempt to transmit the clip again. If the problem persists, contact your system administrator. Consider managing the clips

Error Message	Description	Possible Solution
		on the Dejero LIVE+ Broadcast server to reduce the total amount to less than one thousand.
Error 111: Failed to create File Transfer session on server.	This error message appears if there was an error creating a new File Transfer session.	Ensure that the server drive is not full. Check that the server hard drive is in working order. Contact Dejero Technical Support for further assistance.
Error 112: LIVE Server output unavailable on server. Live stream capacity reached on server.	This error message appears if there are no available live streams on the server and you want to do a live broadcast.	Wait until a live stream becomes available on the server.
Error 113: LIVE Server unable to create stream. Stream capacity reached on server.	This error message appears if the server is unable to create a new S&F Clip or File Transfer stream (max stream capacity reached).	Servers are limited to 4 streams. Wait for a stream to become available or contact your system administrator.
Error 114: Failed to complete clip transfer to LIVE+ Broadcast Server. Server does not have enough disk space available to receive more clip data.	This error message appears if the LIVE+ server cannot complete the clip transfer due to insufficient available disk space.	Contact your system administrator to free up some disk space on the LIVE+ server.
Error 114: Failed to complete file transfer to LIVE+ Broadcast Server. Server does not have enough disk space available to receive more file data.	This error message appears if the LIVE+ server cannot complete the file transfer due to insufficient available disk space.	Contact your system administrator to free up some disk space on the LIVE+ server.
Error 115: Could not broadcast. The LIVE+ Broadcast Server could not be started.	This error message appears if the LIVE+ server did not initialize correctly.	Please contact Dejero Technical Support. Access the Dejero LIVE+ Portal and Ensure that the user name and password are correct. Ensure that the software is

Error Message	Description	Possible Solution
		up-to-date.

Technical specifications

LIVE+ GoBox

Video	
Resolution	480i 59.94, 576i 50, 720p 50/59.94, 1080i 50/59.94, 1080p 23.98
Standards	NTSC, PAL, Film
Encoding	MPEG-4 (H.264 AVC), adaptive bitrate
Inputs	HD/SD-SDI, HDMI
Recording	Up to 40 hours of HD
Audio	
Encoding	Live: Opus 48 kHz, 2-channel, 16-128 kb/s adaptive bitrate
	Recording: AAC 48 kHz, stereo, 160 kb/s
Network Connections	
Cellular	Up to 6 x 3G/4G /LTE
Ethernet	1 Gb/s port for LAN, WAN, and portable satellite (including BGAN, Ku-band, Ka-band)
Wi-Fi	Dual-band wireless-N (802.11 a/b/g/n)
User Interface	
Control	One-button auto start, simple UI and membrane buttons
Preview	5.7-inch (diagonal) screen
Power	
	10-24VDC; 10.5-4A provided by either:
Batteries	Dual, hot-swappable 95Wh Gold Mount or V-Mount Boots and runs on a single battery.
External	100-240 VAC, 47-63 Hz, 2.8A universal AC/DC external power adapter (included)
Physical	
Dimensions	35 x 30.4 x 17.8 cm (14 x 12 x 7 inches)
Weight	5.2 kg (11.5 lbs) without batteries
Operating Temperature	0° C to +40° C (32° F to 105° F) up to 95% RH (non-condensing)
Connectors	SDI, HDMI, Ethernet, IFB, 2 x USB, DC In, DC Out

Additional help

If you still require assistance operating your LIVE+ GoBox after reading this guide:

- Visit the Dejero Support Hub online knowledge base at support.dejero.com

- Email the Dejero technical support team at support@dejero.com

- Call the 24-hour technical support number for your region.

  US & Canada: 1 866 808 3665
  Europe: +44 20 3519 2665
  Australia: +61 2 8015 6803
  International: +1 519 772 4824

Technical Support:

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