

# Dejero

## LIVE+ EnGo User Guide



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[www.dejero.com](http://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.

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## Contents

Warranty and Liability.....	4
Safety Warnings and Hazards.....	4
Handling and Operating Conditions.....	5
About the LIVE+ EnGo.....	7
Modes of operation .....	8
Product configurations .....	8
What's included.....	9
About LIVE+ Control .....	9
Attaching the EnGo to the camera .....	9
Starting the EnGo .....	9
Connecting video and audio.....	9
About connection ports .....	10
Powering the EnGo.....	10
Connecting Ethernet .....	11
Connecting IFB .....	11
About the Preview screen .....	12
Specifying the camera input type .....	13
About the EnGo USB ports .....	13
Configuring the transmitter .....	13
Configuring the connection type.....	16
Transmitting live.....	18
Managing Store & Forward clips .....	18
Transferring files .....	21
About warning and error states .....	21
Using the remote control .....	22
Configuring Auto Start.....	22
Changing the display orientation .....	22
Viewing individual connection meters.....	23
About stream indicators .....	23
Troubleshooting .....	24
Warning and error messages .....	26
Technical specifications .....	31
Additional help .....	32

## 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 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+ EnGo is voided if the case is opened by anyone who has not been trained and certified by Dejero. For details, see Handling and Operating Conditions below.

## Safety Warnings and Hazards

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

### 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+ EnGo complies with Part 15 of the FCC rules for a Class A device.

### Industry Canada statement

LIVE+ EnGo 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+ EnGo 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+ EnGo 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+ EnGo, to generate sparks, which could trigger an explosion. Do not store the LIVE+ EnGo in the compartment of a vehicle that contains flammable gas, liquid, or explosives.

## Blasting or Construction Sites

The Dejero LIVE+ EnGo 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+ EnGo 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+ EnGo 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+ EnGo while in control of a vehicle. Doing so will detract from the driver's or operator's control and operation of that vehicle.

## Personal Health and Safety

For personal health and safety, the operator should maintain a minimum distance of 10 mm from the LIVE+ EnGo while it is powered on, except when using the touch screen.

## Medical Implant Devices

It is possible that the radio modems in the LIVE+ EnGo 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+ EnGo. For personal health and safety, persons concerned about exposure should maintain a minimum distance of 10 mm from the LIVE+ EnGo while it is powered on, except when using the touch screen.

## 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+ EnGo and the hearing device may reduce interference.

## Electrical Safety

Disconnect all power sources before servicing the unit.

The socket-outlet shall be installed near the equipment and shall be easily accessible.

## Handling and Operating Conditions

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

## Handle Device with Care

While the LIVE+ EnGo 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+ EnGo renders the warranty null and void.

## Do Not Open the Case or Store Anything Inside

The LIVE+ EnGo 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+ EnGo 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+ EnGo may overheat and shut down. These vents are located on the top and bottom of the device. (The intake is protected by the black plastic end caps on the top and bottom.) Please keep these areas clear and unobstructed to ensure adequate airflow.

## Keep Device as Cool as Possible

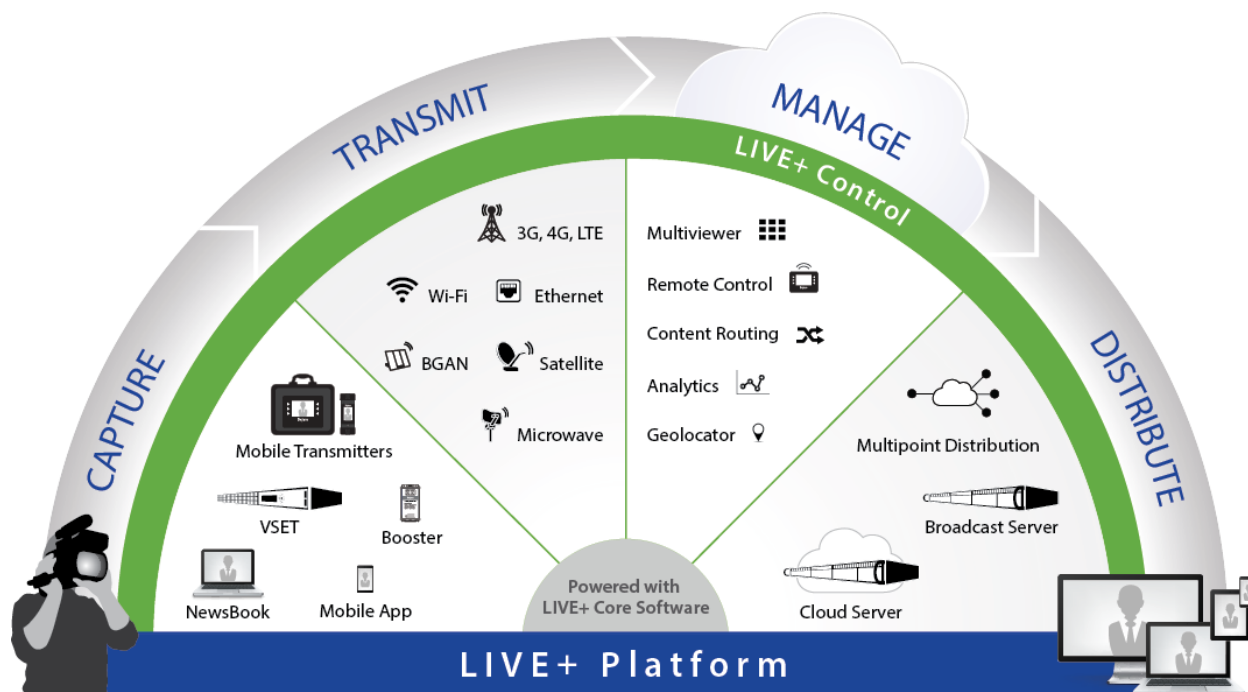
For optimal performance, keep the LIVE+ EnGo in well-ventilated areas, away from heat sources and direct exposure to sunlight. Do not operate the EnGo in temperatures outside of the ambient range (0° C to +45° C / 32° F to 113° F).

## Keep Device Dry

The LIVE+ EnGo carry case is designed to be weather-resistant, but not weatherproof. Keep it covered during inclement conditions, while still ensuring adequate air flow to keep the LIVE+ EnGo cool. Do not expose it to liquid, moisture, or excessive humidity. Using the LIVE+ EnGo with carry cases other than the one supplied is not recommended and will void the warranty.

## About the LIVE+ EnGo

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



LIVE+ EnGo is a compact and modular mobile transmitter that encodes H.264 video and transmits it over multiple IP networks. It reliably delivers exceptional picture quality with extremely low latency—even in challenging network conditions.

Camera-mounted or wearable (in the supplied carry case), EnGo is ideal for newsgathering, sports coverage, and live event broadcasting from remote locations, or while in motion.

Reliable and simple to use, LIVE+ EnGo is designed for mobile video contribution professionals who require agility and versatility.

### Built for speed

One-button start up and automatic video input and format detection allows fast set up. Camera-mounted or body-worn, there are no more cables to trip over, so you can move locations quickly.

### Simple and intuitive

The simple and intuitive touch screen interface provides confidence monitoring, status information, and easy operation. Built-in intelligence does most of the work for you so you can focus on the shot.

### Maximum versatility

The modular design of the EnGo enables you to attach swappable wireless modules. Connect any SDI or HDMI® camera and mount it or wear it the way you want. EnGo redefines mobile video contribution versatility.

## Broadcast from virtually anywhere

Cellular, Wi-Fi®, and portable satellite connections from a compact transmitter enable you to broadcast live reliably from virtually anywhere. You can even broadcast live while moving.

## Remarkable performance

Bonding up to eight network connections, EnGo reliably delivers exceptional picture quality with low latency, even in challenging bandwidth conditions. Get your live shot where others can't.

## Cloud control

With LIVE+ Control and any web browser, you can geolocate, monitor performance, remotely control preview feeds, and route your content – giving you ultimate control.

## Modes of operation

**Live:** Transmit live video over bonded cellular, Wi-Fi, Ethernet, or satellite connections to the LIVE+ servers.

**Store & Forward:** Record video for later transmission. Use this mode when a live feed is not required, or when bandwidth is limited or not available.

**Live and Store & Forward:** Transmit live while also recording high-quality video to use later. Use this mode when network bandwidth is limited but you need to broadcast live.

**File Transfer:** Quickly transfer photos, scripts, graphics, or edited video packages to the LIVE+ servers using bonded connections.

## Product configurations

Your EnGo used one of following connection configurations:

- Wi-Fi/ETH
- Wi-Fi/ETH/2-Modem
- Wi-Fi/ETH/4-Modem
- Wi-Fi/ETH/6-Modem

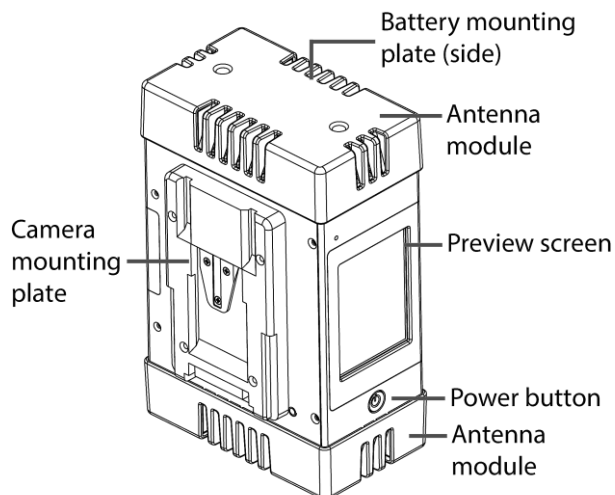
Each option with cellular modems contains an integrated Radio Frequency (RF) module and is available in North American and international versions. Some functionality only applies to EnGo transmitters with RF modules.



## What's included

The EnGo package includes the following items:

- EnGo mobile transmitter with either the Gold Mount or V-Mount battery plates
- AC power adapter with locking connector
- AC power cord
- EnGo carry case
- Right angle SDI cable adapter (for use in the carry case)
- Right angle HDMI cable (for use in the carry case)
- Right angle 1/8" adapter for IFB (for use in the carry case)
- Quick Start Guide
- Camera-mount adapter (optional)



## About LIVE+ Control

When you use the EnGo with Dejero LIVE+ Control, you can:

- Assign live and recorded video, as well as file transfers, from the EnGo to a LIVE+ server
- Geolocate the EnGo mobile transmitter
- Preview and route feeds from the EnGo
- Remotely control and configure the EnGo
- Review analytics about the EnGo performance

## Attaching the EnGo to the camera

1. Slide the EnGo onto the battery plate of the camera so it is seated securely on the plate.
2. Slide a camera battery onto the EnGo.

## Starting the EnGo

1. On the Preview screen side of the EnGo, press the **Power** button.

While the transmitter turns on and establishes a network connection, start-up messages appear on the Preview screen.

## Connecting video and audio

The EnGo support HDMI or SDI video input with embedded audio.

1. Plug the camera's output cable into the video input port on the EnGo.

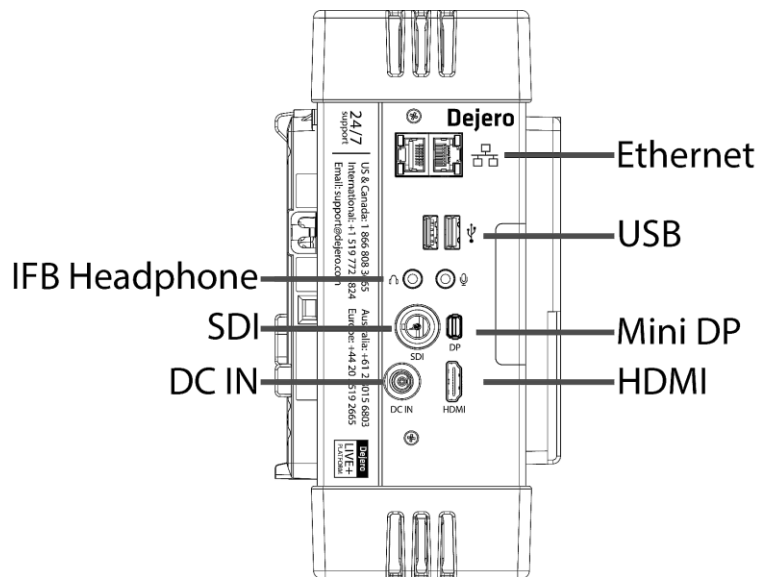
2. Make sure that all cables are firmly connected.

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

If the video format is not detected automatically, you may need to configure the video settings. For more information, see *Configuring the transmitter* on page 13.

## About connection ports

The connection ports are located on the I/O side of the EnGo.



## Powering the EnGo

You can use the following methods to power your EnGo:

- Gold Mount or V-Mount hot-swappable battery
- Supplied power adapter (19V DC output with locking connector)

### Install the battery

- On the battery side of the transmitter, slide the battery onto the battery mounting plate.

When properly inserted, the battery clicks into place and is seated securely on the plate. You can replace the battery without interrupting the EnGo operation.

Recommended battery requirements

- Nominal voltage of 14.4V (operating voltage of 12.0V to 16.8V)
- 95 WH battery, capable of 8.4A maximum at 12V, is recommended for powering EnGo, camera, and accessories.

## Notes on power

The EnGo selects a power source in the following ways:

- If the AC Power adapter is connected, it powers the EnGo only (the camera is not powered when the AC adapter is connected.). Models with an internal backup battery charge when the AC adapter is connected; the AC adapter does not charge the external camera battery.
- If the AC adapter is not connected, the external camera battery powers **both** the EnGo and the camera. A maximum of 60W can be provided to the camera and related accessories. Models with an internal back-up battery enable five minutes of operation while changing the main power source.

## Remove the battery

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



**Note:** Do not leave the external battery attached when storing the EnGo. Leaving the battery attached drains the battery.

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## Connecting Ethernet

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

If multiple networks are available, you can plug in a second Ethernet cable for additional throughput.

1. On the I/O side of the EnGo, plug an Ethernet cable into one of the ports.
2. Ensure that UDP port 6000 is open on the network for inbound and outbound traffic.

The Ethernet adapter is configured to obtain IP address details automatically using DHCP. For more information, see *Configuring the transmitter* on page 13.

## Connecting IFB

Interruptible Foldback (IFB) provides one-way communication from the LIVE+ Broadcast Server to the EnGo. 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 EnGo.

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



**Note:** Connecting IFB is optional.

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1. Connect your audio device (such as an earpiece, headset, or IFB amplifier input) to the 1/8" headphone jack on the I/O side of the EnGo.
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As soon as a live stream starts, an IFB volume indicator appears on the right side of the Preview screen. For more information about starting a stream, see page 18.

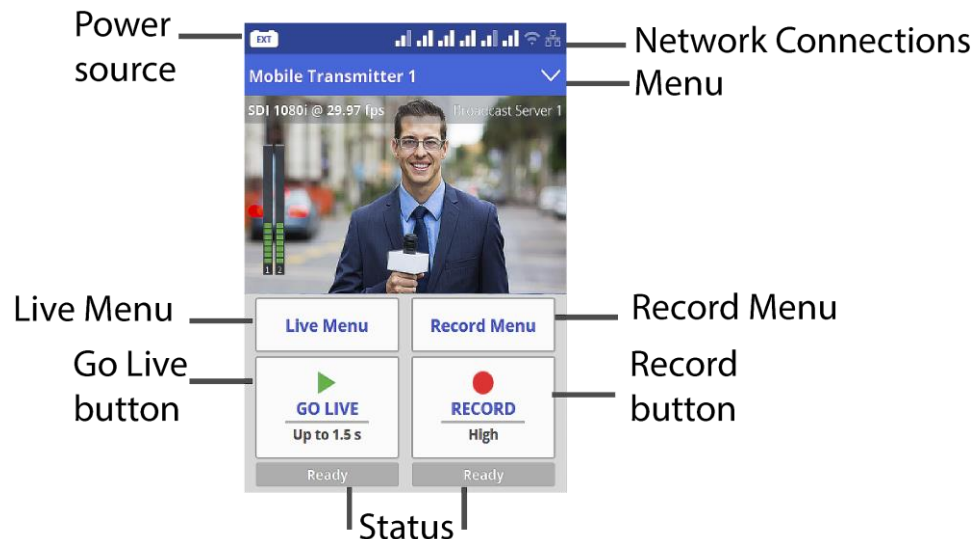
As the EnGo receives voice packets from the server, the sound level varies.

At the bottom of the IFB sound level meter, an IFB status indicator shows the following information:

- I = Idle
- R = Receiving
- .1-.9 = Active and the delay is less than 1 second
- 1-9 = Active and delay is less than 10 seconds
- X = Active and the delay is 10 seconds or more

## About the Preview screen

When the EnGo is on, the Preview screen appears.



The Preview screen is the hub of the EnGo transmitter. The touch screen shows the live camera feed, as well information about the power level, network connections, stream health and any errors. You can also use the screen to broadcast live or record clips quickly. On the Preview screen, you can start a broadcast or record Store & Forward clips with a quick tap of the Go Live or Record buttons.

From the Preview screen, you can use the menu to transfer files or show transmitter settings, error messages, and connection details. The transparent display lets you keep an eye on the live stream or recording while changing the transmitter configuration.

Below the Go Live button, the current stream profile appears. When you tap the Go Live button, the Preview screen shows the live stream run time below the button, and the stream connection health and the latency above the button.

Below the Record button, the current clip quality appears. When you tap the Record button, the Preview screen shows the clip run time below the button. Above the button, the screen shows the amount of remaining video time that you can record and store in the device storage.

From the Live Menu, you can quickly select the parameters for your live feed. Tap the Live Menu button to access the three live feed latency profiles: Feed, Auto, or User.

- Use the Feed profile to send video to the station in poor network conditions. You can also use Feed when you have time to send the highest quality video or when recording live events without anchor desk and reporter interaction.
- Use the Auto profile to adapt to network conditions. It increases latency as needed.
- Use the User profile if you set the configuration options manually. For more information, see *Configuring the transmitter* on page 13.

The Record Menu lets you quickly set the quality of the Store & Forward clip quickly. You can choose from: High, Medium, or Low.



**Note:** Your LIVE+ Control administrator must assign the transmitter before it can be used. If your administrator has not assigned the transmitter, an error appears. Your administrator can also change the server output destination using the LIVE+ Control.

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For a list of possible error messages, see page 26.

## Specifying the camera input type

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

1. On the Preview screen, tap the menu.
2. Tap **Settings**.
3. Tap **Input**.
4. Tap **Video Input**.

For more information about the configuration settings, see page 13.

## About the EnGo USB ports

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

## Configuring the transmitter

Use the Settings screen to configure the transmitter settings.

### Set the video input

By default, the transmitter automatically detects HDMI or SDI connections, frame rate, and resolution. If the settings are not detected automatically, you can set them manually.

1. On the Preview screen, tap the menu.
  2. Tap **Settings**.
  3. Tap **Input**.
-

4. Tap **Video Input**.
5. Set the video input to **Auto**, **SDI**, or **HDMI**.
6. Tap **Back**.
7. If you selected SDI or HDMI, to set the frame rate, tap **Input Frame Rate**.
8. Tap a frame rate.
9. Tap **Back**.
10. To set the input resolution, tap **Input Resolution**.
11. Tap a resolution.
12. Tap **Back**.



**Note:** Depending on the frame rate that you select, the available input resolutions change.

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## Configure the latency

Latency is the time that it takes for the video to arrive at the server. Glass-to-glass refers to the delay from the time the camera detects an image to the time that it appears on a video monitor connected to the SDI output of the LIVE+ Broadcast Server.

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.

1. On the Preview screen, tap the menu.
2. Tap **Settings**.
3. Tap **Live**.
4. Tap **Latency**.
5. Tap a preset value: **1.5 seconds**, **3 seconds**, or **8 seconds**.
6. Tap **Back**.
7. Tap **Latency Mode**.
8. Tap a latency mode: **Fixed**, **Adaptive**, or **Up to**.

## Latency modes

**Fixed Latency mode:** In Fixed Latency mode, the system attempts to give the glass-to-glass latency requested (either 1.5 seconds, 3 seconds, 8 seconds, or preset). If the current network conditions cannot support the requested latency, a warning indicator appears on the screen.

**Adaptive Latency mode:** In Adaptive Latency mode, the system measures the network conditions during the stream and gradually changes the requested latency to a value that the current conditions support.

**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 Preview screen, tap the menu.
2. Tap **Settings**.
3. Tap **Live**.
4. Tap **Resolution**.
5. Set the Live Resolution to **Manual**, **Auto: SD**, **Auto: SD+**, **Auto: HD**, or **Auto: HD+**.
6. Tap **Back**.

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
	Satellite	3.1 Mb/s
Auto: SD+	Normal	5.0 Mb/s
	Satellite	6.2 Mb/s
Auto: HD	Normal	5.0 Mb/s
	Satellite	6.2 Mb/s
Auto: HD+	Normal	10.0 Mb/s
	Satellite	12.5 Mb/s

If you choose Manual, you set the maximum connection bitrate. This setting is 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.

### About 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.

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## Configuring the connection type

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

1. On the Preview screen, tap the menu.
2. Tap **Settings**.
3. Tap **Connections**.
4. Tap **Connection Types**.
5. Set the Connection mode to **All**, **Ethernet**, or **Modems**.
6. Tap **Back**.

### Connection modes

**All:** The transmitter sends data through all available connections, including cellular, Ethernet and Wi-Fi. The transmitter uses only the connections that are available. If multiple connections are available, the transmitter uses all connection types simultaneously.

**Ethernet:** The transmitter sends data over Ethernet or Wi-Fi or both. If you select this option but do not have an Ethernet cable connected or a Wi-Fi connection configured, an error appears on the screen.

**Modems:** The transmitter sends data over the modem connections only. Use this mode when your Wi-Fi or Ethernet connection is poor, with high usage and low bandwidth. If your EnGo has an RF module, this option applies. If you have purchased an Ethernet/Wi-Fi only EnGo, or no modems are installed, this option is not available.

### Set the Ethernet connection type

1. On the Preview screen, tap the menu.
2. Tap **Settings**.
3. Tap **Connections**.
4. Tap **Ethernet Types**.
5. Tap **Normal** or **Satellite**.
6. Tap **Back**.

### Ethernet connection types

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

**Satellite:** This connection type is for high-reliability, high-latency links. It is typical of a portable satellite connection. In Satellite mode, the transmitter accounts for the long latency of the connection, and uses any other available connections (cellular or Wi-Fi) to supplement the



satellite connection. This option is not suitable for satellite links that have congested bandwidth. In situations with congested bandwidth, use the Normal type and a higher glass-to-glass latency.

## Define the SIM set

Selecting a SIM set is available if your EnGo is configured for multiple regions. If you did not purchase an EnGo for multiple regions, the SIM set option is not available.

1. On the Preview screen, tap the menu.
2. Tap **Settings**.
3. Tap **Connections**.
4. Tap **SIM Set**.
5. Depending on your geographic location, tap **Primary** or **Secondary**.

## Configure a Wi-Fi connection

1. On the Preview screen, tap the menu.
2. Tap **Settings**.
3. Tap **Connections**.
4. Tap **Wi-Fi**.
5. Scroll through the list of available Wi-Fi connections and tap your selection.
6. Tap **Action**.
7. Tap **Connect**.
8. If prompted, use the keyboard on the screen to type the password.
9. Tap the green checkmark.



**Note:** Tap **ABC** for uppercase letters and **abc** for lowercase letters. Tap **123.?!** for special characters. Tap it twice for more special characters.

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## Disconnect a Wi-Fi connection

1. On the Preview screen, tap the menu.
2. Tap **Settings**.
3. Tap **Connections**.
4. Tap **Wi-Fi**. The current Wi-Fi network is highlighted in green
5. Tap **Action**.
6. Tap **Disconnect**.

## Delete a saved Wi-Fi profile

1. On the Preview screen, tap the **Menu**.
2. Tap **Settings**.

3. Tap **Connections**.
4. Tap **Wi-Fi**. The current Wi-Fi network is highlighted in green.
5. Tap **Forget**.

### Check the details of a Wi-Fi connection

1. On the Preview screen, tap the menu.
2. Tap **Settings**.
3. Tap **Connections**.
4. Tap **Wi-Fi**. The current Wi-Fi network is highlighted in green.
5. Tap **Info**.

## Transmitting live

### Connect to cellular networks automatically

When the transmitter is on and set to either All or Modems as the connection type, it automatically connects to all available cellular connections.

### Start a transmission

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

**Prerequisite:** Confirm that the latency settings as indicated on the Go Live button are appropriate for the transmission. If you need to change the setting, tap Live Menu and tap Feed, Auto, or User.

1. Tap **Go Live**.

You can monitor the video feed as it transmits.

### Stop a transmission

1. On the Preview screen, tap **Stop**.
2. Tap **Yes**.

The Preview screen continues to show the input from the camera. The device remains ready to resume broadcasting. To resume the transmission, tap **Go Live**.

## Managing Store & Forward clips

With Store & Forward, you can record up to 40 hours of HD video clips directly onto the transmitter. You can also transfer and delete clips. Recording a clip can happen independently of a live transmission. You can also start and stop recording during a live transmission.

Each clip is named with the date and time that the clip finished recording, in the following format: YYYY-MM-DD\_hhmmss.

### Transfer a clip

The server that receives the transferred clip is defined in LIVE+ Control. Clips are recorded Store & Forward files.



**Note:** You cannot transfer a file when streaming live content.

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1. On the Preview screen, tap the menu.
2. Click **Transfer**.
3. Tap **Clips**.
4. Scroll through the clips to find the correct clip.
5. Perform one of the following actions:
  - To select a clip, tap the checkbox.
  - To select all clips, tap **All**.
  - To cancel selecting all clips, tap **All** again.
6. Tap **Action**.
7. Tap **Transfer**.
8. Tap **Back**.

To stop transferring the clip, tap **Stop**.

### View a clip's information

The clip information includes the transfer server, the transfer complete percentage, as well as the timestamp.

1. On the Preview screen, tap the menu.
2. Click **Transfer**.
3. Tap **Clips**.
4. Tap a clip.
5. Tap **Actions**.
6. Tap **Info**.
7. Tap **Back**.

### Delete a clip

1. On the Preview screen, tap the menu.
2. Tap **Transfer**.
3. Tap **Clips**.
4. Tap a clip.
5. Tap **Actions**.
6. Tap **Delete**.
7. To delete the clip from the transmitter permanently, tap **Yes**.
8. Tap **Back**.

## Import a clip

You can import your edited clips to the EnGo 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+ Control.

1. On the back of the EnGo, insert a USB drive.
2. On the Preview screen, tap the menu.
3. Tap **Transfer**.
4. Tap **Files**.
5. Navigate to the file that you want to import using the arrows on the right side of the screen.
6. Tap a file to select it.
7. Tap **Action**.
8. Tap **Transfer**.

## Record a Store & Forward clip

**Prerequisite:** Confirm that the Store & Forward clip quality that appears on the Record button is appropriate for the clip. To change the quality of the recorded video, tap Record Menu. Tap High, Medium, or Low.



**Note:** You do not need to connect the EnGo to a network to record a Store & Forward clip.

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1. On the Preview screen, tap **Record**.

The Preview screen shows the video that you are recording.

Statistics about the current clip also appear above and below the Record button, 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.

## Stop recording

1. To stop recording, on the Preview screen, tap **Stop**.
2. Tap **Yes**.

The Preview screen continues to show the input from the camera. The device remains ready to resume broadcasting. To resume the transmission, tap **Record**.

## Transmit live and record a Store & Forward clip

1. On the Preview screen, tap **Go Live**.
2. Tap **Record**.

The Preview screen shows the video that you are recording.

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**Note:** Depending on the connection and network conditions, the resolution of the live broadcast might change. The resolution of the video, however, does not change when recording the Store & Forward clip.

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## Transferring files

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

### Transfer a file

1. On the back of the EnGo, insert a USB drive into either of the USB ports.
2. On the Preview screen, tap the menu.
3. Click **Transfer**.
4. Tap **Files**.
5. Navigate to the file that you want to import using the arrows on the right side of the screen.
6. Tap the file to transfer. You can select and transfer multiple files from the same folder.
7. Tap **Action**.
8. Tap **Transfer**.

The file transfer progress appears on the screen.

## About warning and error states

### Live

If the EnGo encounters an issue during a live transmission, the background color of the Preview screen changes.

- If a warning appears, the background color changes to yellow. You can troubleshoot the underlying issue and resolve the problem.
- If an error appears, the background color changes to red. The EnGo requires more advanced troubleshooting and might require support from your system administrator.

### View error or warning information

1. On the Preview screen, tap the menu.
2. Tap **Error** or **Warning**.

### Record

If an error occurs during recording (such as the EnGo is out of disk space), the error appears in the status area under the Record button.

## Transfer

If an error occurs during a Store & Forward clip transfer or file transfer, a red X appears on the row.

## Using the remote control

You can control the EnGo from a remote location using the Remote Control feature in the LIVE+ Control. For more information, see the *LIVE+ Control User Guide*.

When the Remote Control is active, a blue border appears on the Preview screen. The blue border only appears at the top of the menu screen. The Info screen shows the name of the user who is controlling the EnGo.

View the Remote Control user

1. On the Preview screen, tap menu.
2. Tap **Settings**.
3. Tap **Info**.

When the Remote Control is active, the Preview screen and the transmission activity continue to appear and the buttons work.

## Configuring Auto Start

When you set the Auto Start mode, the EnGo initiates a live transmission when you turn it on and EnGo detects video input. The transmission starts automatically or after a specified delay.

1. On the Preview screen, tap the menu.
2. Tap **Settings**.
3. Tap **Operation**.
4. Tap **Auto Start**.
5. Tap your delay selection: **No delay**, **1 minute**, **2 minutes**, **3 minutes**, **4 minutes**, or **5 minutes**.



**Note:** If you turn on Auto Start, the live stream starts when the transmitter detects video. If the live stream is stopped manually, Auto Start does not start again until you turn off and turn on the EnGo again.

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## Changing the display orientation

When using the carry case, for proper venting, the EnGo must be closest to the body, with the battery facing away from the body. The vents on each end of the bag must be unobstructed.

You can change the EnGo display when wearing the transmitter in the carry case to make sure that you can still read the screen.

1. On the Preview Screen, tap the menu.
  2. Tap **Settings**.
  3. Tap **Operation**.
-

4. Tap **Display**.
5. Perform one of the following actions:
  - To use the EnGo in the carry case, tap **Portrait (flipped)**.
  - To use the EnGo when it is attached to the camera, tap **Portrait**.
6. Tap **Back**.

## Viewing individual connection meters

The EnGo communicates data through modems, Ethernet, and Wi-Fi connections. Individual connection graphs show the active data transmission rate.

- On the Preview screen, tap the menu.
- Tap **Connections**.
- To view detailed connection information, tap a graph.

## About stream indicators

On the Preview screen, you can view overall stream performance.

### Glass-to-glass latency

Latency measures time delay. Glass-to-glass refers to the delay from the time the EnGo detects an image to the time that it appears on a video monitor connected to the SDI output of the LIVE+ Broadcast Server, or is output from the LIVE+ Cloud Server.

When transmitting live, the glass-to-glass latency appears on the Preview screen, above the Go Live button.

### Stream Health indicator

When transmitting live, the Stream Health indicator appears on the Preview screen above the Live menu. It appears as either Good, Marginal, or Poor. A colored dot appears along with the value to show the stream health.

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 appears as Good.

## Troubleshooting

### No display on Preview screen

If you do not see a video on the Preview screen, perform the following actions:

- Make sure that all cables are connected correctly.
- Verify that your video source is on and sending video
- If necessary, select the specific video input type (HDMI or SDMI), input resolution, and input frame rate for your camera.
- Verify that the supplied video is in a compatible format

### Start-up or power problems

Problem	Possible solution
EnGo does not turn on when using a battery	<p>If you are using a battery and the EnGo does not turn on, make sure that the battery is fully charged and is seated securely on the battery mounting plate. You should use a battery with a minimum 60Wh when using the EnGo in the carry case or 95Wh when the EnGo is camera mounted.</p> <p>If the EnGo still does not turn on, contact Dejero Support.</p>
EnGo does not turn on when using AC power	<p>If you are using AC power, confirm that all cable connections are secure and that the power connector is locked firmly into place. Verify that the power indicator light on the power adapter is on, indicating that power is being supplied.</p> <p>If the EnGo still does not turn on, contact Dejero Support.</p>
No network coverage	<p>Move to an area with better network coverage. The device detects an available network automatically.</p>
Modem malfunction error: "One or more modems have malfunctioned. Restarting this device may resolve the problem."	<p>To reinitialize the modems:</p> <ol style="list-style-type: none"> <li>1. Turn off the EnGo.</li> <li>2. Disconnect the power source.</li> <li>3. Wait 30 seconds, reconnect the power source, and restart.</li> </ol> <p>If this does not resolve the problem, contact Dejero Support.</p>
EnGo is inactive	<p>Contact your system administrator to activate your transmitter.</p>



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

### Video, audio, or transmission problems

<b>Problem</b>	<b>Possible solution</b>
Preview screen is black	A camera is not connected to the EnGo. Make sure that the cable from the camera is securely connected to the correct input port on the EnGo. The video input might not be specified correctly. For more information, see page 13.
There is sound, but no picture	The video input might not be specified correctly. For more information, see page 13.
There is picture, but no sound	The sound is set on your camera. To troubleshoot sound settings, see the camera manufacturer's instructions.
Poor stream health or poor network connectivity	Set the latency to 3 or 8 seconds. For more information, see page 14.
Device is displaying an error message	For a full list of EnGo error messages and possible solution, see page 26.

### IFB problems

If no feedback is coming through earpiece, perform one of the following actions:

- Adjust the volume on the LIVE+ Broadcast Server.
- Verify that the correct capture device is set as the default on the broadcast server.

If you still encounter errors, the transmitter might have an internal hardware problem. For more information, contact Dejero Support.

## Warning and error messages

The following table outlines possible warning or error messages that you might encounter and possible ways to resolve them.

You can also find a complete list of errors in the Dejero Support Hub at <http://support.dejero.com>.

Message	Description	Possible solution
Service unavailable	Database failure on the dispatcher.	Try again.  If the error continues to appear after several tries, contact your system administrator.
Unable to connect	Unable to establish a connection with the dispatcher.	Check your network connections and try again.  If the error continues to appear after several tries, contact your system administrator.
Update required	The EnGo requires a software update.	Contact your system administrator.
Poor network	Insufficient connection bandwidth to support the bit rate.	Try repositioning the transmitter for better wireless coverage, or change to a longer latency setting.
Hardware failure	The cellular modems are not responding.	Reinitialize the modems: <ol style="list-style-type: none"> <li>1. Turn off the EnGo.</li> <li>2. Disconnect the power source.</li> <li>3. Wait 30 seconds, reconnect the power source, and restart.</li> </ol> <p>If this does not resolve the problem, contact Dejero Support.</p>

Hardware failure	The video input device failed.	<p>Check that all cables are firmly connected to the correct input ports on the EnGo.</p> <p>Check the configuration settings on the transmitter to make sure that they match the connected camera.</p> <p>Restart the EnGo</p> <ol style="list-style-type: none"> <li>1. Turn off the EnGo.</li> <li>2. Disconnect the power source.</li> <li>3. Wait 30 seconds, reconnect the power source, and restart.</li> </ol> <p>If this does not resolve the problem, contact Dejero Support.</p>
Output not assigned	<p>The source transmitter might not be assigned to a server output in Control.</p> <p>The assigned server output either is turned off or is inactive.</p>	Use Control to assign an output. For more information, see the <i>LIVE+ Control User Guide</i> .
Device disabled	Either the source transmitter or assigned server is disabled in Control.	Enable the source transmitter or assigned output server in Control. For more information, see the <i>LIVE+ Control User Guide</i> .
Device disabled	Either the source transmitter or assigned output server is inactive in Control.	Make sure that the source transmitter is activated and assigned a server output in Control. For more information, see the <i>LIVE+ Control User Guide</i> .
No server response	<p>Unable to establish connection with the assigned output server.</p> <p>This error typically occurs because the IP address is not configured properly or the modems on the</p>	Contact your system administrator.

	transmitter are unable to transmit.	
No Ethernet	No Ethernet connections exist.	Connect an Ethernet cable to the EnGo.
Poor network	Network conditions are too poor to transmit reliably at the current latency setting.	If possible, move to a location with better network coverage. Change the latency mode to Adaptive or set a longer latency value.
No disk space	There is not enough space on the transmitter to store an additional clip.	Delete existing clips to free up storage space.
All outputs in use	All of the assigned outputs are currently in use.	Wait for an output to become available and try again. Use Control to assign a different output to your source transmitter. For more information, see the <i>LIVE+ Control User Guide</i> .
Unsupported output	The assigned output is set to an unsupported video format.	Use Control to select a different video output. For more information, see the <i>LIVE+ Control User Guide</i> .
Device not licensed	This device is not licensed.	Contact Dejero Support.
Output in use	Could not broadcast. The output server is in use.	Use Control to select a different server output. For more information, see the <i>LIVE+ Control User Guide</i> .
Check in/out formats	Could not broadcast. The selected input and output video format combination is not supported.	Select an input format that is compatible with the output or use Control to select a different output. For more information, see the <i>LIVE+ Control User Guide</i> .

Invalid assignment	Could not broadcast. Invalid server output assignment.	Use Control to select a different server output. For more information, see the <i>LIVE+ Control User Guide</i> .
Clip transfer failed	Failed to create a clip on the assigned output server.	Try to transmit the clip again. If the problem persists, contact your system administrator.  Consider managing the clips on the LIVE+ Broadcast Server to reduce the total amount to less than 1000.
File transfer failed.	Failed to create file transfer session on the assigned output server.	Verify that the server is not full. Check that the server is in working order.  Contact Dejero Support for further assistance.
Capacity reached	The assigned output has reached its stream capacity.	Wait until a server output is available. Use control to select a different server output.
Capacity reached	The assigned server has reached its stream capacity.	Servers are limited to four streams. Wait for a stream to become available or use Control to assign it to a different server.
No server disk space	Failed to complete the transfer to the server. The Server does have enough disk space available.	Contact your system administrator to free up some storage space on the LIVE+ server. Use Control to assign EnGo to a different server. For more information, see the <i>LIVE+ Control User Guide</i> .
Output failed	Failed to start live stream	Contact Dejero Support.  Use Control to assign EnGo to a different server. For more information, see the

		<i>LIVE+ Control User Guide.</i>
Server not licensed	EnGo cannot stream to the assigned server.	Contact Dejero Support.
Hardware failure	The input device malfunctioned.	Restart the EnGo: <ol style="list-style-type: none"> <li>1. Turn off the EnGo.</li> <li>2. Disconnect the power source.</li> <li>3. Wait 30 seconds, reconnect the power source, and restart.</li> </ol> <p>If this does not resolve the problem, contact Dejero Support.</p>
Software failure	The software stopped unexpectedly and restarted automatically.	Contact Dejero Support.
Unknown error	An unknown error occurred.	Contact Dejero Support.

### Make a support call

If you need to make a support call, reference the serial number that appears at the top of Preview screen. If an error appears on the screen, reference the error number.

## Technical specifications

### LIVE+ EnGo

<b>Video</b>	
Resolution	480i 29.97, 576i 25, 720p 50/59.94/60, 1080i 25/29.97/30, 1080p 23.98
Encoding	MPEG-4 (H.264 AVC), adaptive bitrate
Inputs	HD/SD-SDI, HDMI
<b>Audio</b>	
Encoding	Live: Opus 48 kHz, 2-channel, 16-128 kb/s adaptive bitrate Recording: MPEG-2 48 kHz, stereo, 256 kb/s
Inputs	Embedded (SDI, HDMI)
<b>Network Connections</b>	
Cellular	Up to 6 x 3G/4G/LTE
Ethernet	Dual 1 Gb/s port for LAN, WAN, and portable satellite (including BGAN, Ku-band, Ka-band)
Wi-Fi	Dual-band wireless-AC (802.11 a/b/g/n/ac)
<b>Power</b>	
DC IN	10-22VDC; 4.5-2A supplied by 100-240 VAC, 50/60Hz, 1.3/2.0A universal AC/DC external power adapter (included)
DC OUT (to Camera)	Maximum 60W
Provision for internal battery	EnGo models that support an internal battery provide 5 minutes run time for EnGo, camera, and accessories (max 100 W)
External battery	Hot-swappable 60 Wh Gold Mount or V-Mount; 95 WH battery, capable of 8.4A maximum at 12V, is recommended for powering EnGo, camera, and accessories  Nominal voltage of 14.4V (operating voltage of 12.0V to 16.8V)
<b>Physical</b>	
Dimensions	21.8 x 14.2 x 11.7 cm (8.5 x 5.6 x 4.9 inches)
Weight	1.87 kg (4.1 lbs) without external battery
Operating Temperature	0° C to +45° C (32° F to 113° F)* qualified operation up to 95% RH (non-condensing)
Connectors	SDI (BNC), HDMI 1.3, Mini DisplayPort, 2 x RJ45 Ethernet, 2 x USB 2.0, IFB (3.5 mm audio jack), DC In
<b>Key Functions</b>	
Live	Transmit broadcast-quality live video over IP networks

Store & Forward	Record video for later transfer
Live and Store & Forward	Transmit live while also recording video for later transfer
File Transfer	Transfer edited video or other files to LIVE+ servers

\*operating with internal/external battery; up to 40°C with included certified external power adapter.

## Additional help

If you still require assistance operating your LIVE+ EnGo:

- Visit the Dejero Support Hub online knowledge base at [support.dejero.com](http://support.dejero.com)
- Email the Dejero technical support team at [support@dejero.com](mailto: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



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