Axon Fleet 2 Wireless Microphone Installation and User Manual

Models AX1017 and AX1018
Document Revision: DRAFT 8

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Introduction

The Axon Fleet 2 wireless microphone works with the Axon Fleet 2 camera system to provide audio for Axon Fleet 2 front camera videos. The wireless microphone is not a stand-alone recording device. The wireless microphone will pick up audio and transmit the audio, using a Radio Frequency (RF) link, to the Junction Box installed in the Axon Fleet 2 vehicle. The Junction box pairs the wireless microphone with the front camera and passes the audio from the microphone to the camera where it is included in the video file.

Before first use, the wireless microphone must be paired to the vehicle's junction box. On subsequent uses, the wireless microphone will automatically connect to the junction box when both are powered on.

When the wireless microphone is connected, the front camera on-board microphone records audio from the wireless microphone instead of the on-board microphone. Conversely, the on-board front camera microphone sources the audio if there is no wireless microphone connected.

The video recordings will indicate whether audio was sourced from the local front camera microphone or the wireless microphone. If a video recording was started and audio source changed during the recording, the audio source will also be indicated each time it changes.

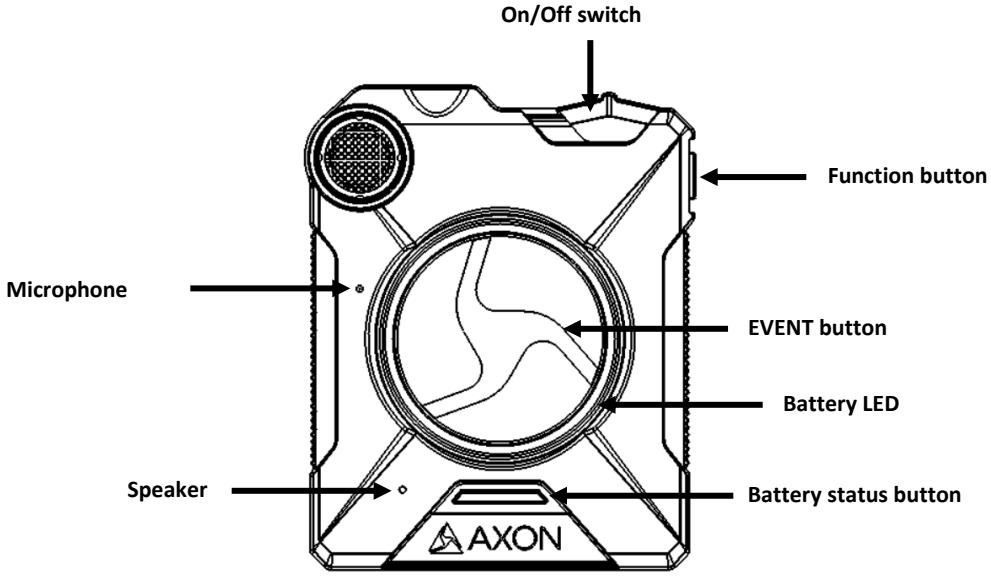
The RF link from the wireless microphone to the junction box has a maximum unobstructed range of 1000 ft, but this will vary depending operating environment. If the RF link is lost (for example, if an officer moves out of range or goes into an enclosed metal trailer), the buffering/recording of audio automatically reverts to the Axon Fleet 2 front camera microphone. Once the wireless microphone RF link is re-established, the audio will return to being sourced from the wireless microphone. The wireless microphone will mute audio if the RF link becomes too weak to transmit audio data. Muting occurs when there is not a complete loss of RF link. When the RF link is completely lost, the front camera microphone is selected.

When multiple wireless microphones are in operation:

- The junction box can be paired to multiple wireless microphones, but only one wireless microphone can be connected to the junction box and streaming audio at a time.
- The wireless microphone can only be paired to one junction box at a time.
- Once paired, if microphone 1 is turned off and microphone 2 is turned on, microphone 2 will automatically connect.

Getting to know the Axon Fleet 2 Wireless Microphone

The following images show the different components on the Axon Fleet 2 wireless microphone, Model AX1018.



Axon Fleet 2 wireless microphone front

On/Off switch – Turns the wireless microphone's power on or off.

Microphone – For audio recording.

Speaker – Provides audio notifications.

Function button – Used for device pairing and to mute the device.

EVENT button – Used to start recording (Double-press to start).

Battery status button – When pressed, lights up the Battery LED, which momentarily indicates the remaining battery capacity only.

Battery LED – When lit, momentarily indicates the remaining battery capacity (with default settings, it does not indicate the operating mode).

When you turn the microphone on, the Operation LED turns solid red until the system is ready to use. Then the Operation LED blinks green (BUFFERING mode).

The microphone can be configured so the Battery LED operates in sync with the Operation LED. In BUFFERING mode both the Operation and Battery LEDs will blink green, and in EVENT mode both will blink red.

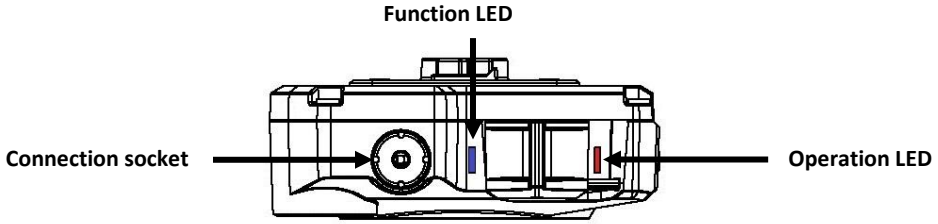
If the battery status button is pressed, the battery LED displays the battery status for approximately 10 seconds and then resumes displaying the EVENT mode.

Charge Status or Function Enabled	Battery LED
40%-100%	Green*
20%-39%	Yellow*
<20%	Red*
Fully charged	Green**
Charging in progress (≥20%)	Yellow**
Charging in progress (<20%)	Red**
Buffering Mode	Blinking Green***
Event Mode	Blinking Red***

*When Battery status button is pressed

**When charging

***When configured to mirror operation LED



Axon Fleet 2 wireless microphone top

Connection Socket – Used to recharge wireless microphone battery.

Function LED – Displays when certain functions are enabled.

Function Enabled	Function LED
In Pairing Mode	Blinking blue
Error	Solid red
Paired with Junction Box	Solid blue

Operation LED – Mirrors Axon Fleet 2 front camera operating mode, except for error state.

Operating Mode	Operation LED
Recording	Blinking red
Buffering	Blinking green
Booting up/powering down Error state**	Solid red (**When Function LED also is solid red)
RF link is broken (out of range)	Blinking Yellow

Axon Wireless Microphone Mounts

The Axon Fleet 2 wireless microphone is designed to work with the Axon RapidLock mounting system. The Axon RapidLock mounting system consists of the attachment piece, called the key, on the wireless microphone and the various mounting options including the attachment receiver, called the lock.

To engage the Axon RapidLock mount, insert the key of the wireless microphone into the lock of the mount and turn the microphone 90 degrees counterclockwise (when you are looking straight at the mount). To release the wireless microphone from the mount, turn the wireless microphone 90 degrees clockwise.

There are various mounts that use this system and they can be used with a wide variety of uniforms, and hold the wireless microphone to your shirt, patrol vest, jacket, or belt.

The two mounts discussed here are the Clip Mount and the Magnetic Mount.

Mounting Information and Recommendations

The following list provides additional information and recommendations for mounting the wireless microphone.

- The Thick Outerwear Magnetic Mount, SKU 74021, should not be used with the wireless microphone. The significant amount of metal present in this mount diminishes wireless microphone range.
- Axon recommends mounting the wireless microphone as high as possible on the chest for best microphone performance.
- If an officer's typical workflow is to approach stopped vehicles on the driver side of the vehicle, Axon recommends mounting the wireless microphone on the right side of the body. Conversely, if the typical workflow is approach to the passenger side, it is recommended to mount the wireless microphone on the left side of the body.
- After a mounting location is selected, officers should test access to other officer-worn equipment to ensure the wireless microphone does not interfere with access or use of the equipment.

Clip Mount

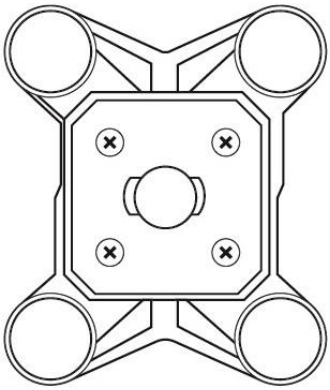
The clip mount provides a quick and easy way to mount the wireless microphone on your patrol vest, jacket, or belt.

1. Insert the key on the back of the wireless microphone into the lock.

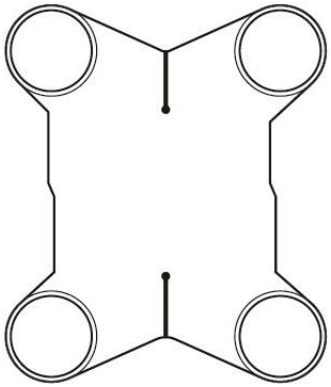
2. Twist the wireless microphone 90 degrees counterclockwise.

3. Slide the clip mount on your patrol vest, jacket, or belt.

Magnetic Mount



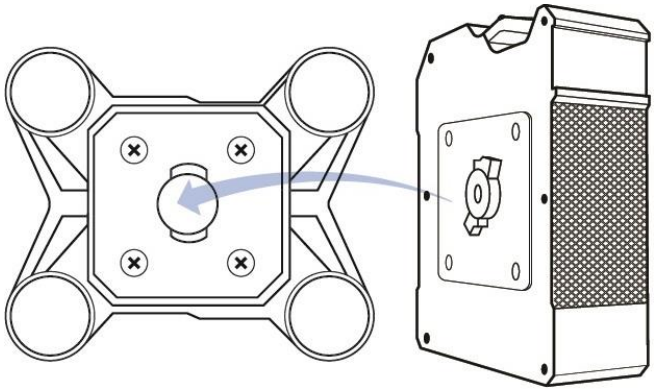
Axon RapidLock attachment receiver (lock)



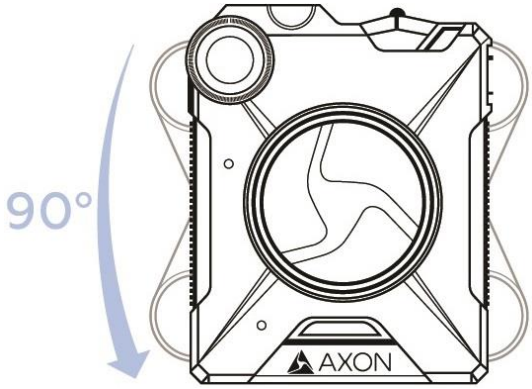
Axon RapidLock magnetic back

Magnetic Mount Assembly and Use

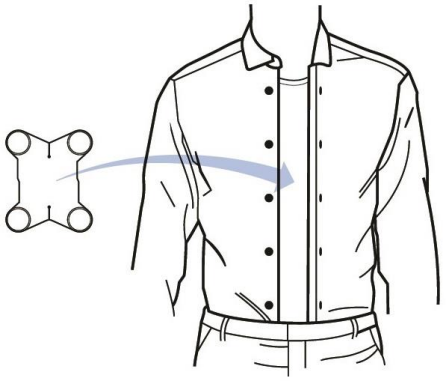
1. Insert the key on the back of the wireless microphone into the lock.



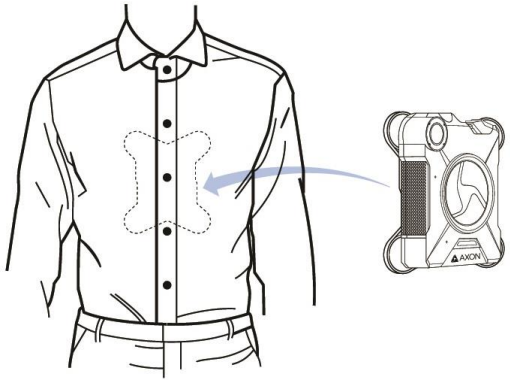
2. Twist the wireless microphone, 90 degrees counter-clockwise.



3. Place the magnetic back underneath the shirt, patrol vest, or whatever you are using.



4. Hold the back in place and place the Axon RapidLock mount over the back. Magnetic attraction will hold the wireless microphone in place.



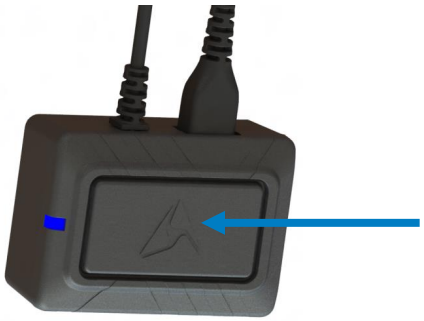
Wireless Microphone Operation

Before using an Axon Fleet 2 wireless microphone, ensure it is fully charged and configured.

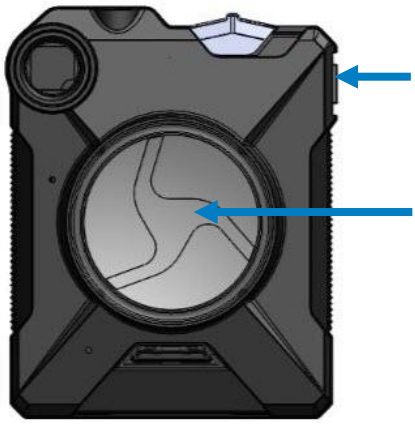
Pairing a Wireless Microphone with the Junction Box

The Axon Fleet 2 wireless microphone must be paired with the vehicle's junction box to function correctly.

1. Turn on the Axon Fleet 2 wireless microphone.
2. On the junction box, press and hold the Junction Box button for 3 seconds or until the Junction Box LED blinks blue to indicate pairing mode.



3. On the wireless microphone, press and hold the Function and EVENT buttons for five seconds.



Wait until the Function LED blinks blue and then transitions to solid blue indicating that it is paired with the Junction Box. The Junction Box LED will also be solid blue.

Once a wireless microphone and junction box have been paired, the wireless microphone will connect to the junction box as soon as both are powered on.

Operating Modes

The Axon Fleet 2 wireless microphone has two operating modes:

- BUFFERING (turning on the wireless microphone and starting pre-event buffering)
- EVENT (event recording)

These operating modes reflect the front camera operating modes (when the front camera is in BUFFERING mode, the wireless microphone will indicate BUFFERING and will indicate EVENT when front camera is in EVENT mode).

Note: The wireless microphone requires 12-15 seconds to fully power down when the power switch is moved to the Off position. This is important if the user is attempting to re-boot.

BUFFERING Mode (turning on the wireless microphone)

- Move the Power Switch on the wireless microphone to the ON position.

  The wireless microphone conducts start-up checks and syncs mode indications with the front camera. When the front camera begins BUFFERING, the Operation LED on the wireless microphone will blink green.

EVENT Mode

- When you need to record, quickly double-press the EVENT button on the wireless microphone.

  The moment you double-press the EVENT button, both video and audio will be recorded. This will continue throughout the duration of the recording until you terminate the recording.

  Recording can also be started using Axon View XL, momentarily pressing the EVENT button on Axon Fleet 2 front camera, or when the Axon Signal Vehicle unit sends a signal.

  The wireless microphone provides you with indications that it is recording in EVENT mode:

  - At the start of an event and every 2 minutes during an event, the wireless microphone beeps twice.
  - The Operation LED on top of the camera blinks red.

Recordings can only be stopped using Axon View XL or the Axon Fleet 2 Front camera EVENT button.

Muting Audio Recording

If your system administrator has configured your Axon Fleet 2 system to do so, you can use the function button to disable audio recording during an event. This feature may be useful in sensitive situations.

- Press and hold the Function button for 3 seconds to mute the audio capture.

Press and hold the Function button another 3 seconds to re-enable the audio recording.

Charging the Battery

A fully charged Axon Fleet 2 wireless microphone battery should provide enough power for approximately 12 hours of normal operation. Recharging a battery after a 12-hour use can take up to 9 hours if you are recharging your wireless microphone from an in-car charging dock or Axon Dock. Recharging could take considerably longer if you are recharging from a computer.

Always recharge a depleted battery as soon as reasonably possible. You can recharge the Axon Fleet 2 wireless microphone battery with an in-car charging dock, Evidence Sync cable with a computer, or an Axon Dock for Axon Body 2 cameras. Using a non-Axon approved wall charger may degrade device performance and will void the warranty.

If the Axon Fleet 2 wireless microphone is to be stored for a long time, the Battery LED should be yellow when you put the wireless microphone in storage. After an Axon Fleet 2 wireless microphone has been stored 6 months, the wireless microphone should be run until the battery is depleted and then the battery should be recharged.

Firmware Updates

Firmware updates for the Axon Fleet 2 wireless microphone and junction box are made over-the-air using Axon View XL and channeled through the front camera.

Notification Reference Tables

This section list all the audio, vibration, and LED indications associated with the Axon Fleet 2 wireless microphone.

Audio Prompts

The Axon Fleet 2 wireless microphone emits beeping sounds called “audio prompts” to notify you of the system status. The audio prompts are accompanied by a vibration that matches the beeps.

Operating Mode	Audio Notification	Haptic Notification (Vibration)
Powering on or off	One beep	Once
Recording an event	Two beeps (every 2 minutes)	Twice (every 2 minutes)
The device is ending an event and returning to BUFFERING mode	One long beep	Once, long duration
Low battery notifications: • When in BUFFERING mode and battery has power for 20 minutes or less • When in EVENT (recording) mode and battery nearly discharged (the microphone will shut down within a few minutes)	Four quick beeps (every 20 seconds)	Four times, quickly (every 20 seconds)
Front camera memory is full, or the front camera is not powered on (the camera will not record)	Three beeps	Three times
RF link is broken (out of range)	One beep (every 10 seconds)	Once (every 10 seconds)
Front camera internal clock is not set	Five quick beeps (every 20 seconds)	Five times, quickly (every 20 seconds)

LED Status

Operation LED

The operation LED mirrors Axon Fleet 2 front camera operating mode, except for error state.

Operating Mode	Operation LED
Recording	Blinking red
Buffering	Blinking green
Booting up/powering down Error**	Solid red (**When Function LED also is solid red)
RF link is broken (out of range)	Blinking Yellow

Function LED

The function LED displays when certain functions are enabled.

Function Enabled	Function LED
Pairing mode/Mute	Blinking blue
Error	Solid red
Connected to junction box	Solid blue

Battery LED

While charging in the in-car dock, the battery LED will display charge status as indicated in the table. Once charge status has reached 100% the LED will shut down after 10 minutes and will not re-illuminate, while in the dock, until the battery status button is pressed, at which point it will remain illuminated for 10 seconds.

Charge Status or Function Enabled	Battery LED
40%-100%	Green*
20%-39%	Yellow*
<20%	Red*
Fully charged	Green**
Charging in progress (≥20%)	Yellow**
Charging in progress (<20%)	Red**
Buffering Mode	Blinking Green***
Event Mode	Blinking Red***

*When Battery status button is pressed

**When charging

***When configured to mirror operation LED

Installation

This section provides information on the Axon Fleet 2 wireless microphone system contents, the tools needed for installation, and procedure for installing Axon Fleet 2 wireless microphone hardware.

Axon Fleet 2 Wireless Microphone Contents

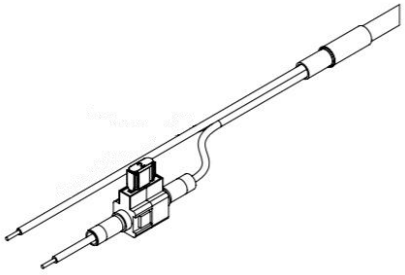
Every Axon Fleet 2 Wireless Microphone system comes with the following parts required for installation.

One Axon Fleet 2 wireless microphone – SKU 71086

One junction box – SKU 71084

One in-car charging dock and one charging dock to vehicle cable – SKU 71087

The cable exiting the charging dock has two wires: Red for 12VDC power and Black for GND. The wires come with factory-installed butt-splice terminals.



This cable is 18 feet (6 m) in length and contains the following wires:

18 AWG – Black

18 AWG – Red – 12V power, 2 amp fuse

Two Axon RapidLock mounts

Optionally, your agency can also purchase:

- Additional Axon Fleet 2 wireless microphones
- AB2 Sync cables (for charging from USB)
- Axon Dock with bays for Axon Body 2 cameras, for in station charging of the wireless microphones

Tools

The following is a list of required and recommended tools to install the Axon Fleet 2 wireless microphone junction box and in-car charging dock.

- Alcohol wipes and paper towels
- 3M Silane Glass Treatment AP 115
- Wire cutters and crimper (Klein Tools products are recommended)
- Cable ties for holding cables in place
- Metal or nylon fishing tape for running wires through channels
- #2 Phillips screwdriver – if installing the in-car charging dock to the vehicle partition or on a carpeted area.
- Drill with a No. 16 (.1770”) drill bit – if installing the in-car charging dock to the vehicle partition.
- 5/16” wrench – if installing the in-car charging dock to the vehicle partition.

Affix the Junction Box

Choose the appropriate location on the vehicle’s front windshield to mount the junction box. The junction box contains the antenna and receiving circuitry for the wireless microphone RF link. Junction box placement and orientation are important for ensuring best performance. The junction box should be mounted as close to the top and center of the front windshield as possible. The wire connections should face upward.

When positioning the junction box, take into account:

- The position of wiring to and from the junction box
- The curvature of the windshield

1. Prepare the windshield by cleaning the area for the junction box.
   - Use 3M Silane Glass Treatment AP 115 for maximum adhesion.
   - Wipe off excess Silane glass treatment with a paper towel before it is allowed to dry.
2. Peel the top protective layer from the adhesive strip and affix the junction box to the windshield.
3. Hold the junction box in place for 10 seconds to ensure adhesion.
4. Connect the junction box to the Axon Fleet power unit and to the front camera.

Connecting the Junction Box

The junction box connects in series between the Axon Fleet Power Unit and the Axon Fleet 2 front camera. The power unit to camera cable is connected to the junction box, instead of the front camera, and then the junction box cable is connected to the front camera.

1. Connect the power unit to camera cable to the junction box.
2. Connect the junction box cable to the front camera.

Installing the In-Car Charging Dock

There are three options for installing the in-car charging dock: on a flat surface using VHB tape, on the partition between the front and rear seats, or on a carpeted area with sheet metal backing.

Attaching with VHB Tape

VHB tape is attached to the back of the in-car charging dock mounting flange and can be used to mount the dock to a flat, rigid surface such as metal or plastic.

1. Prepare the mounting location by cleaning the surface with an alcohol wipe and allow the surface to dry.

2. Peel the protective layer from the VHB tape and place the dock on the prepared location.

3. Push and hold the dock against the surface for 10 to 20 seconds to ensure adhesion.

4. Connect power to the in-car charging dock.

Attaching to the Partition

To mount the in-car charging dock on a partition, you drill holes into the partition and use the four round-head screws and nuts, included in the installation kit.

Tools required for this installation:

- Drill with a No. 16 (.1770”) drill bit
- No. 2 Phillips driver
- 5/16” wrench.

1. Mark the location of the in-car charging dock mounting holes on the partition.

2. Drill the mounting holes using a #16 (.1770”) drill.

3. Use the four round-head screws and 5/16” nuts, provided in the installation kit, to attach the dock to the partition.

If the dock is mounted to the partition between the front and rear seats, insert the round-head screws from the rear seat side of the partition and place the nuts on the front seat side of the partition.

4. Connect power to the in-car charging dock.

Attaching to a Carpeted Area

The in-car charging dock can be mounted to a carpeted area with sheet metal backing, such as the transmission tunnel.

Tools required for this installation:

- No. 2 Phillips driver

1. Test fit the in-car charging dock to ensure there is no interference with
2. Use the four self-tapping screws, provided in the installation kit, with the No. 2 Phillips driver to mount the dock.
3. Connect power to the in-car charging dock.

Connecting Power to the In-Car Charging Dock

After the in-car charging dock is mounted, it must be connected to the vehicle power.

1. Connect the supplied 18’ power cable to the vehicle battery (constant 12V power supply) and route the cable to the butt-splice terminals exiting the dock.
2. Route the wires from the vehicle battery to the in-car charging dock location.
3. Cut the 18’ power cable to the appropriate length at the butt-splice connectors
4. Strip no more than 0.25″ (6.35 mm) of insulation from each of the wires.
5. Insert into the stripped end of the wire into the appropriate butt-splice, connecting the red wire to red and the black wire to black, and crimp.

Troubleshooting and Other Information

Troubleshooting

Any error states encountered with the wireless microphone and/or junction box can typically be cleared by rebooting the devices.

- To reboot the wireless microphone - move the power switch in the off position, wait 12-15 seconds, and then move the power switch to the on position.
- To reboot the junction box - remove power from the junction box by disconnecting the connector running from the power unit to the junction box for a few seconds and then reconnect the connector.

  Important: This action also reboots the Front Camera.

Technical Support

Visit www.axon.com and view the Support options or call 1-800-978-2737.

Warranty Policy

Axon Enterprise warranty provisions are applicable on all Axon Fleet system products. See Axon Enterprise's website, www.axon.com, for detailed warranty information.

Warnings

For a full list of the warning associated with this product, see www.axon.com.

Radio Waves

An Axon Fleet 2 system transmission is in the frequency ranges of 2404 – 2476 MHz.

Changes or modifications to the equipment not expressly approved by the manufacturer could void the product warranty and the user's authority to operate the equipment.

Your wireless device is a radio transmitter and receiver. It is designed and manufactured not to exceed the emission limits for exposure to radio frequency (RF) energy set by the Federal Communications Commission (FCC) of the U.S. Government. These limits are part of comprehensive guidelines and establish permitted levels of RF energy for the general population. The guidelines are based on standards that were developed by independent scientific organizations through periodic and thorough evaluation of

scientific studies. The standards include a substantial safety margin designed to assure the safety of all persons, regardless of age and health. Before a device model is available for sale to the public, it must be tested and certified to the FCC that it does not exceed the limit established by the government-adopted requirement for safe exposure. This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult Axon Enterprise Technical Support for help.

FCC/IC NOTICE: This device meets the body worn human exposure limits found in ANSI/ IEEE C95.1, 2005. Proper operation of this equipment according to the instructions found in this guide will result in exposure substantially below the FCC's recommended limits. To comply with the FCC and ANSI C95.1 RF exposure limits, this device has been tested for compliance with FCC RF Exposure limits in the typical configuration. The radiated output power of this wireless device is far below the FCC radio frequency exposure limits.

AVIS Commission fédérale des Communications (FCC)/Industrie Canada (IC): Cet appareil répond aux limites d'exposition humaines du corps trouvées dans ANSI/IEEE C95.1, 2005. Le bon fonctionnement de cet équipement selon les instructions contenues dans ce guide entraînera une exposition nettement inférieure aux limites recommandées par la Commission Fédérale des Communications (FCC). Afin de respecter les limites d'exposition à l'énergie radiofréquence (RF) de la FCC et de l'ANSI C95.1, ce dispositif a été testé pour se conformer aux limites d'exposition à l'énergie radiofréquence (RF) de la FCC dans la configuration typique. La puissance de sortie rayonnée de ce périphérique sans fil est bien inférieure aux limites d'exposition radiofréquence de la Commission Fédérale des Communications (FCC).

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

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

CE DISPOSITIF RÉPOND AUX EXIGENCES GOUVERNEMENTALES POUR L'EXPOSITION AUX ONDES RADIO.

Section 8.4 of RSS-GEN

This Device complies with Industry Canada License-exempt RSS standard(s). Operation is subject to the following two conditions: 1) this device may not cause interference, and 2) this device must accept any interference, including interference that may cause undesired operation of the device.

Cet appareil est conforme aux normes d'exemption de licence RSS d'Industrie Canada. Son utilisation est soumise aux conditions suivantes : 1) cet appareil ne doit pas causer de brouillage, et 2) doit accepter tout brouillage, y compris le brouillage pouvant entraîner un fonctionnement indésirable.

Section 8.3 of RSS-GEN

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

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

Section 6.8 of RSS-GEN

These radio transmitters IC: 8803A-S01165 and IC: 8803A-S01166 have been approved by Innovation, Science and Economic Development Canada to operate with the antenna type listed below, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.

Axon Fleet 2 wireless microphone uses a (TBD) antenna. Antenna gain is <(TBD)dBi. The required impedance for this antenna is (TBD) ohms.

Axon Fleet 2 junction box uses a (TBD) antenna. Antenna gain is <(TBD)dBi. The required impedance for this antenna is (TBD) ohms.

Compliance Marks

Country of Origin: USA