Ares

NANO-MICRO
ETHOS QX 75
READY-TO-FLY

Instruction Manual

Specifications

Length:	3.7 in (95mm)
Length Including Rotor Blades:	5.5 in (140mm)
Height:	1.7 in (44mm)
Propeller/Main Rotor Diameter:	2.2 in (56mm)
Weight with Battery:	1.3 oz (37 g)
Main Motor:	Micro coreless (4 installed)
Battery:	300mAh 1S 3.7V LiPo (included)
Charger:	Dual Port 1S 3.7V LiPo DC USB (included)
Transmitter:	4-channel 2.4GHz (included)
On-Board Electronics:	4-in-1 receiver/4 ESCs/mixer/3-axis gyro (installed)

CE

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Introduction

The Ares™ [*air-eez*] Ethos QX 75 may be small in size but it's big on performance and capability for both first-time and experienced quadcopter pilots. The advanced 3-axis gyro control system offers precise control and maximum stability while the nano-micro size allows for easy flying in smaller indoor spaces and fully proportional 4-channel control offers plenty of maneuverability for flying outdoors in light wind conditions too.

The innovative 'Automatic Flip Mode' allows almost anyone to perform 360° flips with just the push of a button on the transmitter and the unique body design offers improved visibility to help maintain orientation. An advanced design and composite materials result in low weight and incredible durability plus the airframe is 100% factory-assembled and ready-to-fly right out of the box – no tools or assembly required!

Also in the box is everything needed to fly including AA batteries for the ergonomic 4-channel transmitter equipped with 2.4GHz technology, an LCD screen, dual rates and a built-in USB port, a class-leading 300mAh 1S 3.7V LiPo battery and a dual port DC USB charger for charging from almost any computer or USB power source. That means there's nothing extra to buy and you can be ready to fly within minutes of opening the box.

And although the Ethos QX 75 is ready-to-fly right out the box, please take the time to read through this manual for more information on battery safety and charging, flight controls and more before making your first flight. Please also visit our web site at www.Ares-RC.com for additional information including product updates, bulletins, videos and more.

Safety Precautions and Warnings

Failure to use this product in the intended manner as described in the following instructions can result in damage and/or personal injury. A Radio Controlled (RC) airplane/helicopter/quadcopter is not a toy! If misused it can cause serious bodily harm and damage to property.

Keep items that could become entangled in the propeller/rotor blades away from the propeller/rotor blades, including loose clothing, tools, etc. Be especially sure to keep your hands, face and other parts of your body away from the propeller/rotor blades.

As the user of this product you are solely and wholly responsible for operating it in a manner that does not endanger yourself and others or result in damage to the product or the property of others.

This model is controlled by a radio signal that is subject to possible interference from a variety of sources outside your control. This interference can cause momentary loss of control so it is advisable to always keep a safe distance from objects and people in all directions around your model as this will help to avoid collisions and/or injury.

- Never operate your model if the voltage of the batteries in the transmitter is too low.
- Always operate your model in an open area away from obstacles, people, vehicles, buildings, etc.
- Carefully follow the directions and warnings for this and any optional support equipment (chargers, rechargeable batteries, etc.).
- Keep all chemicals, small parts and all electronic components out of the reach of children.
- Moisture causes damage to electronic components. Avoid water exposure to all electronic components, parts, etc. not specifically designed and protected for use in water.
- Never lick or place any portion of the model in your mouth as it could cause serious injury or even death.

CE Information

Intended Use
The remote control is designed exclusively for private use in model construction. The remote control is not for industrial use, e.g. to control machines and equipment, determined.
Any use other than as described above, can lead to damage of the product, and beyond this, with the associated risks, such as short circuit, fire, electric shock, etc..
Contact with water must be avoided!
The remote control must not technically be changed or rebuilt!
The safety precautions are essential to follow!
You as a user are solely responsible for the safe operation of your remote control and your model!

Declaration of Conformity (DOC)
Hereby, the manufacturer declares that this product is in compliance with the essential requirements and other relevant provisions of Directives.
The declaration of conformity may be consulted at www.robitronic.com

Ethos QX 75 RTF (Ready-To-Fly) Contents

Item	Description
Not Available Separately	Ethos QX 75 Nano-Micro RTF Airframe
AZSH1208	M4LPQ Micro 4-Channel LP Quadcopter Transmitter, Mode 2
Not Available Separately	6 AA Batteries
AZSH1203	DC USB Power Cable/Cord for Dual Port Charger
AZSH1204	1-Cell/1S 3.7V LiPo, 0.4A Dual Port DC USB Charger
AZSH1205	300mAh 1-Cell/1S 3.7V 15C LiPo Battery, Micro A Connector

Before the First Flight Checklist

PLEASE NOTE: This checklist is NOT intended to replace the content included in this instruction manual. Although it can be used as a quick start guide, we strongly suggest reading through this manual completely before proceeding.

- ❑ Remove and inspect all contents

- ❑ Plug the DC USB charger into a suitable USB power source

- ❑ Begin charging the flight battery (connect it to the charger)

- ❑ Install the six AA batteries in the transmitter

- ❑ Install the flight battery in the quadcopter (after it's been fully charged)

- ❑ Familiarize yourself with the controls

- ❑ Test the controls to confirm proper operation

- ❑ Find a suitable area for flying

Flight Checklist

PLEASE NOTE: This checklist is NOT intended to replace the content included in this instruction manual. Although it can be used as a quick start guide, we strongly suggest reading through this manual completely before proceeding.

- ❑ Always turn the transmitter on first

- ❑ Plug the flight battery into the model

- ❑ Allow the control unit to initialize and arm properly (on a flat/level surface)

- ❑ Fly the model (take-off from a flat/level surface)

- ❑ Land the model (land on a flat/level surface)

- ❑ Unplug the flight battery from the model

- ❑ Always turn the transmitter off last

LiPo Battery Warnings and Usage Guidelines

IMPORTANT NOTE: Lithium Polymer batteries are significantly more volatile than the alkaline, NiCd or NiMH batteries also used in RC applications. All instructions and warnings must be followed exactly to prevent property damage and/or personal injury as mishandling of LiPo batteries can result in fire.

By handling, charging or using the included LiPo battery you assume all risks associated with LiPo batteries. If you do not agree with these conditions please return the complete product in new, unused condition to the place of purchase immediately.

And although the 300mAh 1-Cell/1S 3.7V 15C LiPo Battery (AZSH1205) included with your Ares™ Ethos QX 75 is intended to be charged safely using the included 1-Cell/1S 3.7V LiPo, 0.4A Dual Port DC USB Charger (AZSH1204) you must read the following safety instructions and warnings before handling, charging or using the LiPo battery.

- You must charge the LiPo battery in a safe area away from flammable materials.

- Never charge the LiPo battery unattended at any time. When charging the battery you should always remain in constant observation to monitor the charging process and react immediately to any potential problems that may occur.

- After flying/discharging the battery you must allow it to cool to ambient/room temperature before recharging.

- To charge the battery you must use only the included 1-Cell/1S 3.7V LiPo, 0.4A DC Dual Port USB Charger (AZSH1204) or a suitably compatible LiPo battery charger. Failure to do so may result in a fire causing property damage and/or personal injury. DO NOT use a NiCd or NiMH charger.

- If at any time during the charge or discharge process the battery begins to balloon or swell, discontinue charging or discharging immediately. Quickly and safely disconnect the battery, then place it in a safe, open area away from flammable materials to observe it for at least 15 minutes. Continuing to charge or discharge a battery that has begun to balloon or swell can result in a fire. A battery that has ballooned or swollen even a small amount must be removed from service completely.

- Store the battery at room temperature, approximately 68–77° Fahrenheit (F), and in a dry area for best results.

- **When transporting or temporarily storing the battery, the temperature range should be from approximately 40–100°F. Do not store the battery or model in a hot garage, car or direct sunlight whenever possible. If stored in a hot garage or car the battery can be damaged or even catch fire.**

- **Do not over-discharge the LiPo flight battery. Discharging the LiPo flight battery too low can cause damage to the battery resulting in reduced power, flight duration or failure of the battery entirely.**

   LiPo cells should not be discharged to below 3.0V each under load. In the case of the 1-Cell/1S 3.7V LiPo battery used to power the Ethos QX 75 you will not want to allow the battery to fall below 3.0V during flight.

   The 4-in-1 control unit features a low voltage cutoff (LVC) that cuts power to the motors completely (regardless of the power level you have set with the left-hand/throttle stick) if the voltage of the battery falls below the 3.0V minimum. If the LVC ever occurs it will be indicated by a blinking red LED. However, to prevent an unexpected loss of power due to triggering the LVC, if you ever find that more than the typical amount of throttle/power is required to hover and/or the quadcopter will not ascend/climb even at full power you should land the model and disconnect the battery immediately to prevent over-discharge.

   And while it is possible to power the model up and fly again after the LVC occurs this is NOT recommended. Continued discharging can cause permanent damage to the LiPo battery resulting in reduced power output and/or shortened flight durations during subsequent flights (or failure of the battery entirely).

   Also, it is not recommended that you fly to the LVC every time you fly. Instead you should be aware of the power level of the battery/quadcopter throughout the flight, and if at any time the quadcopter begins to require more throttle/power than typical to maintain hover, and/or will not ascend/climb even at full power, you should land the quadcopter and disconnect the LiPo battery immediately. Constantly discharging the battery to the LVC can still cause permanent damage to the battery so it's best to use a timer or stop-watch to time the duration of your flights and to stop flying at a reasonable time before the LVC is reached.

Charging the LiPo Flight Battery

You must charge the included 300mAh 1-Cell/1S 3.7V 15C LiPo Battery (AZSH1205) using only the included 1-Cell/1S 3.7V LiPo, 0.4A Dual Port DC USB Charger (AZSH1204) or a suitably compatible LiPo battery charger. Charging the LiPo battery using a non-LiPo battery compatible charger (such as a NiCd or NiMH battery charger), or even a different LiPo battery charger with the incorrect settings, may result in damage to the battery or even fire resulting in property damage and/or personal injury.

Please follow these steps to charge the LiPo battery with the included charger:

❑ **Using the included power cable/cord connect the Dual Port DC USB charger to a suitable 5V USB port on a computer, other device or the USB port on the bottom of the transmitter. Another option is to plug the optional 5005PS 100-240V AC to 5V DC USB, 0.5-Amp Power Supply (AZSC5005PS) into a compatible 100-240V AC outlet then to connect the charger to the power supply/AC adapter accordingly. The power supply/AC adapter is powered on when the LED indicator glows solid green.**

NOTE: The AA batteries included to power the transmitter are not intended to be used to power the included charger (to charge the LiPo flight battery) through the built-in USB port on the transmitter. If you'd like to power the included charger through the USB port on the transmitter we recommend replacing the AA batteries with Energizer® MAX brand or equivalent capacity (~2800mAh per cell) alkaline/rechargeable AA batteries. These AA batteries can deliver enough power to charge a fully discharged (not over-discharged) LiPo flight battery up to 5-7 times before they need to be replaced. Also, as the voltage of the AA batteries drops it will take more time to charge the LiPo flight battery.

❑ **Connect the white 2-pin 'Micro A' connector on the battery to one of the mating connectors on the charger. YOU MUST BE CAREFUL TO ENSURE PROPER POLARITY BEFORE MAKING THE CONNECTION by ensuring the red color positive (+) wire lead is aligned with the positive (+) marking on the housing of the charger. While the Micro A connectors are 'keyed' to minimize the risk of a reverse polarity connection, if you force them it is possible to make connection with the incorrect polarity potentially causing damage to the battery and/or charger. When the red wire lead is properly aligned with the positive (+) marking on the housing of the charger, connecting the Micro A connector should require only a minimal amount of pressure to achieve the light 'click' that indicates secure connection.**

❑ When the battery is connected to the charger securely and with the proper polarity the LED indicator on the charger will glow solid red. The battery will be charging anytime it's connected to the charger and the LED indicator is glowing solid red

❑ It will take approximately 50-60 minutes to charge a fully discharged (not over-discharged) battery from a suitable power source. And when the battery is fully charged the LED indicator will stop glowing red entirely. When the LED indicator is no longer glowing you can disconnect the battery from the charger as it is now fully charged and ready for use.

NOTE: When using both charge ports at the same time to charge two (2) fully discharged (not over-discharged) batteries, the charge time may increase by approximately 30 minutes per battery (or more) depending on the amount of power available from your source. Also, we do NOT recommend charging two (2) batteries when the charger is connected to the transmitter as a power source as even the highest capacity AA batteries will not deliver adequate power/life.

NOTE: The LiPo battery included with your model will arrive partially charged. For this reason the initial charge may only take approximately 25-30 minutes.

NOTE: It's safer and better for the longevity of the battery to store it only partially charged for any length of time. Storing the battery at approximately 50% charged (which is approximately 3.85V per cell) is typically best; however, it will take some careful management of the charge time and the use of a volt meter to achieve this voltage.

If you have the equipment and skills to achieve the 50% charge level for storage it is recommended. If not, simply be sure to not store the battery fully charged whenever possible. In fact, as long as the battery will be stored at approximately room temperature and for no more than a few weeks before the next use, it may be best to store the battery in the discharged state after the last flight (as long as the battery was not over-discharged on the last flight).

Installing the Transmitter Batteries

Install the six included AA batteries in the back of the transmitter by removing the screw securing the battery compartment cover/door using the included screwdriver then remove the battery compartment cover/door. Ensure proper polarity of the batteries before installing them as indicated by the markings molded into the battery compartment, then re-install the compartment cover/door and screw.

Check for proper operation of the transmitter by sliding the power switch to the ON position (slide it to the right). The red LED indicator at the top of the transmitter will begin to blink and the LCD screen will power on. This indicates the transmitter is powered on and the AA batteries are installed correctly.

NOTE: The LED indicator will not glow solid red, and the LCD screen will not display the current control stick/trim positions and other typical data/information, until after the quadcopter has been powered ON and the binding/linking process is complete (please see 'Control Unit Initialization and Arming' and the 'Transmitter and Receiver Binding/Linking' sections of this manual for more information).

Transmitter Details

The Ethos QX 75 includes an M4LPQ Micro 4-Channel LP Quadcopter Transmitter equipped with 2.4GHz technology, dual rates, digital trims and an LCD screen.

The unique LCD screen displays a variety of data when the transmitter is powered on:
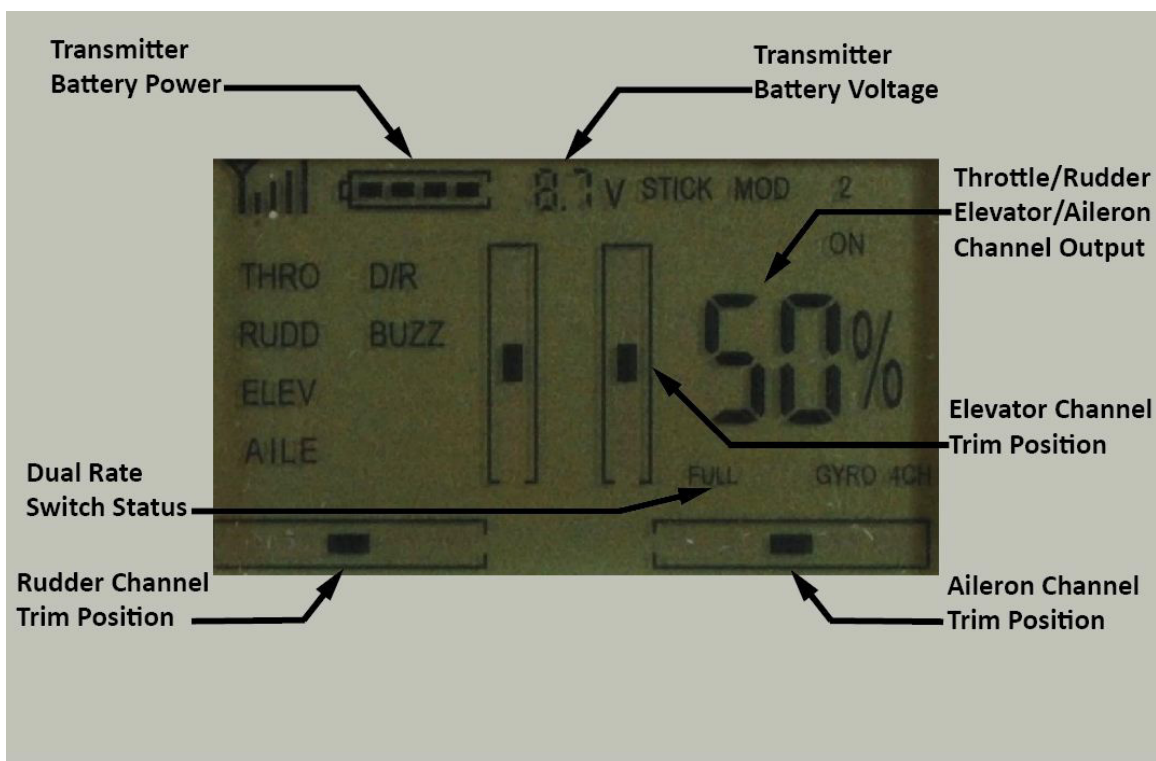
Dual Rate Status Indicator

This indicator shows the control rate mode currently selected; 'FULL' for high rate and 'HALF' for low rate (please see the 'Transmitter Dual Rates' section of this manual for more information).

Battery Power Indicator

This indicator shows the approximate amount of AA battery power remaining for the transmitter. We suggest replacing the AA batteries in the transmitter anytime there are only one or two rectangles showing (around 7.2– 7.5V).

Throttle, Rudder, Elevator and Aileron Channel Output/Stick Position Value

This value indicates the approximate percentage (%) of channel output/stick position or trim position for a given channel/function. The value shown is from the most recent control stick movement or trim button press; for example, after moving the left-hand/throttle stick down to the lowest possible position the value shown will be '00%'.

Rudder Channel Trim Position Indicator

This indicator shows the approximate rudder channel trim position. The trim position should be adjusted as needed during flight to ensure the nose of the quadcopter does not constantly turn (yaw) left or right when 'hovering' and without any rudder/left-hand stick input. The percentage value for the trim position is also shown on the right side of the LCD screen after pressing either of the trim buttons (and only prior to the next control stick movement or trim button press).

Elevator and Aileron Channel Trim Position Indicators

These indicators show the approximate elevator and aileron channel trim positions. The trim positions should be adjusted as needed during flight to ensure the quadcopter does not constantly 'drift' forward/backward (elevator) or left/right (aileron) when hovering and without any right-hand stick input. The percentage value for the corresponding trim position is also shown on the right side of the LCD screen after pressing either of the trim buttons (and only prior to the next control stick movement or trim button press).In general these trim positions will not often change after they've been set correctly.

NOTE: The unique position of the elevator trim buttons is due to the ergonomic design of the transmitter. The functions of these buttons are clearly noted on the corresponding label and it will not typically be necessary to adjust the elevator trim position after it's been set correctly.

Installing the LiPo Flight Battery

IMPORTANT NOTE: You must ALWAYS turn the transmitter on first, BEFORE installing/connecting the LiPo flight battery. And before proceeding with the following steps please be sure the transmitter is powered on and that the left-hand/throttle stick is in the lowest possible position.

IMPORTANT NOTE: It's important that you do not move the left-hand/throttle stick up and down after the transmitter is powered on and before the 4-in-1 control unit installed in the quadcopter is powered on as doing so will prevent the transmitter from binding/linking to the receiver/control unit.

NOTE: While the 'Micro A' connectors installed on the wire leads of the battery and the 4-in-1 control unit are 'keyed' to minimize the risk of a reverse polarity connection, if you force them it is possible to make connection with incorrect polarity potentially causing damage to the control unit and/or battery. When the connectors are properly aligned for correct polarity, connecting the Micro A connectors should require only a minimal amount of pressure to achieve the light 'click' that indicates secure connection.

After the LiPo battery has been fully charged it's ready to be installed in the quadcopter. Install the flight battery by sliding it into the battery mount (located on the bottom of the main frame) with the wire leads and connector oriented towards the back of the quadcopter.

IMPORTANT NOTE: You should always position the battery so it's approximately 'centered' relative to the front and back of the battery mount. This helps to ensure proper Center-of-Gravity (CG) for the quadcopter and will minimize or eliminate the need to adjust the elevator channel trim position after installing a different battery.

YOU MUST BE CAREFUL TO ENSURE PROPER POLARITY BEFORE CONNECTING THE BATTERY TO THE 4-IN-1 CONTROL UNIT. By orienting/aligning the wire leads of the battery and control unit so they're 'red to red' and 'black to black' you'll be able to make the connection with correct polarity.

IMPORTANT NOTE: ONCE THE BATTERY IS CONNECTED TO THE CONTROL UNIT IT'S IMPORTANT TO QUICKLY SET THE QUADCOPTER DOWN ON A STABLE, FLAT AND LEVEL SURFACE IN ORDER FOR THE 3-AXIS GYRO SYSTEM TO INITIALIZE/CALIBRATE PROPERLY. FAILURE TO QUICKLY SET THE QUADCOPTER DOWN CAN PREVENT THE GYRO SYSTEM FROM INITIALIZING/CALIBRATING PROPERLY RESULTING IN UNSTABLE (OSCILLATING) FLIGHT PERFORMANCE. Alternatively you can connect the battery to the control unit while the quadcopter is set on a stable, flat and level surface.

When the battery is connected securely carefully 'tuck' the wire leads and connectors into the body/canopy of the quadcopter. **YOU MUST ENSURE THE WIRE LEADS AND CONNECTORS WILL NOT COME INTO CONTACT WITH THE PROPELLERS/ROTOR BLADES WHEN THEY SPIN.**

To remove the LiPo flight battery carefully disconnect it from the 4-in-1 control unit then remove it from the battery mount. DO NOT turn off the transmitter until the LiPo flight battery is removed from the quadcopter and the 4-in-1 control unit is powered off. **REMEMBER: The transmitter is always on first and always off last!**

Control Unit Initialization and Arming

The Ethos QX 75 is equipped with a compact and advanced 4-in-1 control unit. The control unit is a lightweight combination of 2.4GHz receiver, four electronic speed controls (ESCs), mixer and 3-axis gyro. The control unit is also equipped with LEDs that provide various indications.

This checklist includes the steps you must follow to ensure proper initialization, arming and operation of the control unit:

- ❑ **Before each flight you must always turn the transmitter on before connecting the flight battery to the control unit. Never connect the flight battery to the control unit before powering the transmitter on first. After each flight you should always disconnect the flight battery from the control unit before turning the transmitter off.**

- ❑ **The left-hand/throttle stick must be set in the lowest possible position in order for the control unit to arm properly. Failure to lower the stick to the lowest possible position can prevent the ESCs from arming and/or the 3-axis gyro system from initializing properly resulting in unstable (oscillating) flight performance.**

  NOTE: It's important that you do not move the left-hand/throttle stick up and down after the transmitter is turned on and before the 4-in-1 control unit installed in the quadcopter is powered on as doing so will prevent the transmitter from binding/linking to the receiver/control unit.

Lower the throttle stick to the lowest possible position

❑ Power the transmitter on and confirm that the LED indicator is blinking red. Then, slide the flight battery into the battery mount (located on the bottom of the main frame) and connect it to the control unit.

NOTE: If this will be the first flight, or the first flight following repairs, you should 'center' the rudder, elevator and aileron channel trims. Use the digital trim buttons to determine the center trim position by referencing the percentage value indicated on the LCD screen (please see the 'Transmitter Details' section of this manual for more information).

❑ With the flight battery connected to the control unit the LED indicator on the control unit will glow solid green.

IMPORTANT NOTE: ONCE THE BATTERY IS CONNECTED TO THE CONTROL UNIT IT'S IMPORTANT TO QUICKLY SET THE QUADCOPTER DOWN ON A STABLE, FLAT AND LEVEL SURFACE IN ORDER FOR THE 3-AXIS GYRO SYSTEM TO INITIALIZE/CALIBRATE PROPERLY. FAILURE TO QUICKLY SET THE QUADCOPTER DOWN CAN PREVENT THE GYRO SYSTEM FROM INITIALIZING/CALIBRATING PROPERLY RESULTING IN UNSTABLE (OSCILLATING) FLIGHT PERFORMANCE. Alternatively you can connect the battery to the control unit while the quadcopter is set on a stable, flat and level surface.

If you do not set the quadcopter down quickly after the battery is connected you must disconnect it from the control unit and repeat the initialization/calibration process.

❑ **When the LED indicator glows solid green the control unit is initialized and ready for flight. Use caution as all four propellers/rotor blades will now spin with left-hand/throttle stick input!**

In case the LED indicator does not glow solid green:

• If the red and green LED indicators blink rapidly you do not have a positive radio frequency (RF) link between the transmitter and receiver of the control unit. First, check to be sure the transmitter is powered on and the LED indicator on the transmitter is blinking red. If the transmitter is powered on and functioning properly, disconnect the flight battery from the control unit. Then reconnect the flight battery and now the control unit should initialize properly. Or, in some cases, it may be necessary to power the transmitter off then on again before reconnecting the flight battery to ensure proper initialization.

• If the red LED indicator is blinking slowly you have a positive RF link between the transmitter and receiver of the control unit but the ESCs/motors did not 'arm' because the left-hand/throttle stick may not be set to the correct position. Check to be sure the left-hand/throttle stick is in the lowest possible position, and once in the correct position the green LED indicator will glow solid indicating the ESCs/motors are now armed.

After confirming the control unit is initialized and the ESCs/motors have armed properly your Ethos QX 75 is ready to fly. However, please review the following sections of the manual BEFORE proceeding with the first flight.

Transmitter Dual Rates

The M4LPQ transmitter is equipped with a 'dual rate' feature. This feature allows you to toggle between the 'High' (HI/FULL) and 'Low' (LO/HALF) control rates available for the aileron and elevator channels. You can toggle between the high and low rates by pressing the dual rate button (the right side of the rocker switch) located on the top left 'corner' of the transmitter. You should feel a 'click' and also hear an audible beep/tone that indicates which control rate mode you are in. Two (2) beeps/tones means you've selected high/'FULL' rate mode and one (1) beep/tone means you've selected low/'HALF' rate mode. Also, the selected rate mode will be displayed as 'FULL' for high rate and 'HALF' for low rate on the LCD screen.

NOTE: The transmitter will remember the last rate mode you selected even if it's turned off then on again. This means each time the transmitter is powered on it will automatically be in the rate mode that was selected before it was powered off.

In the FULL/high rate mode the controls are allowed to reach their maximum values. This mode is typically preferred by experienced pilots interested most in maximum control authority.

By pressing the dual rate button (the right side of the rocker switch) located on the top left 'corner' of the transmitter while in the FULL/high rate mode you'll switch to the HALF/low rate mode. You'll know you've switched to the 'HALF'/low rate mode after feeling a 'click' and hearing a single beep/tone.

The HALF/low rate mode is typically preferred by (and recommended best for) first-time, low-time and other pilots interested most in a reduced amount of control authority that allows for even smoother and more easily controlled hovering and flying.

If you ever switch to the HALF/low rate mode you'll know you've switched back to the FULL/high rate mode by pressing the dual rate button (the right side of the rocker switch), feeling the click and also hearing two (2) beeps/tones.

Flight Controls and Trimming

In the event you are not familiar with the controls of the Ethos QX 75 please take the time to familiarize yourself with them as follows and before attempting your first flight:

The left-hand stick on the transmitter controls both throttle (climb/descend) and rudder (yaw left/right). When the left-hand stick (also known as the 'throttle' stick) is in the lowest possible position the propellers/rotor blades will not spin. Moving the stick upward will increase the speed of the propellers/rotor blades. Increasing the speed of the propellers/rotor blades will cause the model to climb.

Decreasing the speed of the propellers/rotor blades by lowering the left-hand stick will cause the model to descend.

After lifting the model off the ground you can 'hover' by carefully moving the left-hand stick up and down slightly as needed so the model will maintain altitude without climbing or descending.

Moving the left-hand stick to the left will turn (yaw) the nose of the quadcopter to the left about the vertical axis. This is accomplished by increasing the speed of the left-front and right-rear propellers/rotor blades while decreasing the speed of the right-front and left-rear propellers/rotor blades.

Moving the stick to the right will turn (yaw) the nose of the quadcopter to the right about the vertical axis. This is accomplished by increasing the speed of the right-front and left-rear propellers/rotor blades while decreasing the speed of the left-front and right-rear propellers/rotor blades.

The rudder trim is used to help keep the nose of the quadcopter from turning (yawing) to the left or right when 'hovering' and without any rudder/left-hand stick input. For example, if the nose of the quadcopter turns to the right when hovering add left rudder trim by pressing the left-hand rudder trim button until the nose of the quadcopter stays as close to straight as possible with no further input.

The right-hand stick controls both elevator (pitch fore/aft) and aileron (roll). Pushing the stick forward will pitch the nose of the quadcopter downward, allowing it to be flown forward.


Pulling the stick backward will pitch the tail the quadcopter downward, allowing it to be flown backward.

The elevator trim can be used to help keep the quadcopter from drifting forward or backward when hovering and with no right-hand stick input. For example, if the quadcopter drifts forward when hovering add backward (up) elevator trim by pressing the right-hand elevator trim button (the right side of the rocker switch) located on the top right 'corner' of the transmitter until the quadcopter hovers as level as possible with no forward drifting.

Moving the stick to the left will roll the quadcopter to the left, allowing it to be flown to the left.
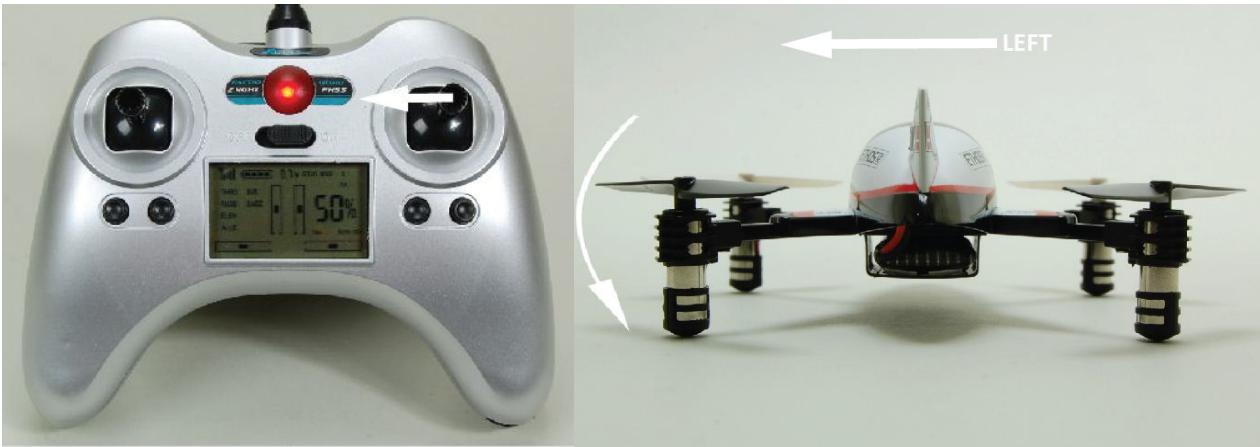
Moving the stick to the right will roll the quadcopter to the right, allowing it to be flown to the right.

The aileron trim can be used to help keep the quadcopter from drifting left or right when hovering and with no right-hand stick input. For example, if the quadcopter drifts to the right when hovering add left aileron trim by pressing the left-hand aileron trim button until the quadcopter hovers as level as possible with no drifting to the right.

And once you're familiar with the primary controls of the quadcopter you're almost ready to fly!

Selecting a Flying Area

The relatively small size and light weight of the Ethos QX 75 makes it ideal for flying indoors. We suggest an area with approximately 10-feet by 10-feet of floor space and with 8+ foot high ceilings for your first few flights. The powerful direct drive coreless motors and fully proportional 4-channel controls also offer plenty of power and control to fly the Ethos QX 75 outdoors in calm to light wind conditions.

Also, if you are a first-time or low-time quadcopter pilot we highly recommend allowing a more experienced pilot to test fly and properly trim the model before attempting your first flight. A proven flyable and properly trimmed model is significantly easier and more enjoyable to fly!

When you're ready to make your first flights you'll want to select a suitable open area free of people and obstructions. And after you've properly trimmed the quadcopter and become familiar with its handling/capabilities you'll be able to fly in smaller and less open areas.

NOTE: If you plan to perform 'flips' we suggest practicing them outdoors first, preferably over grass, whenever possible. Otherwise we suggest an indoor area with approximately 15+ feet by 15+ feet of floor space and 15+ foot high ceilings. Then, after you've become familiar with the handling/capabilities of the quadcopter when performing flips you'll be able to perform them in smaller indoor spaces (please see the 'Automatic Flip Mode' section of this manual for more information).

Flying

Now that you've selected a suitable flying area you're ready to fly! And when making your first flights we suggest following these steps:

- With the left-hand/throttle stick still in the lowest possible position, press the dual rate button (the right side of the rocker switch) located on the top left 'corner' of the transmitter to enter the HALF/low rate mode (you should feel a 'click' and also hear a single beep/tone as noted in the 'Transmitter Dual Rates' section of this manual).

- **Increase the speed of the main rotor blades until the model begins to lift off by raising the left-hand/throttle stick SLOWLY. DO NOT raise the stick too quickly as the model could climb too fast causing you to lose control and/or make contact with the ceiling or other objects above (this is one of the most common ways most first-time pilots crash).**

- Lift the model off the ground approximately 12-16 inches and concentrate on balancing the left-hand/throttle stick position so the quadcopter holds a steady hover altitude. It may also be helpful to make a few short 'hops' to an altitude of just a few inches until you're familiar and more comfortable with the control inputs and trim settings required to maintain a steady hover and altitude. However, keep in mind that when only a few inches off the ground you'll be in 'ground effect' which will cause the quadcopter to move around more than it typically would at approximately 12-16 inches of altitude.

- You'll find that it sometimes takes minor throttle adjustments to maintain altitude in hover. Remember to keep these adjustments as minimal as possible as large adjustments could result in a loss of control and/or a possible crash.

- While attempting to establish a low-level hover out of ground effect (approximately 12-16 inches high or higher) you can check to see if any trim adjustments are required to help keep the quadcopter from constantly drifting in various directions. If you find the quadcopter constantly drifts without any directional control input it may be best to land the model before making any adjustments to the trim positions using the trim buttons on the transmitter (you can find more information regarding the location and function of the trim buttons in the 'Transmitter Details' and 'Flight Controls and Trimming' sections of this manual):

  o If the nose of the quadcopter is drifting to the left or right adjust the rudder trim.

  o If the quadcopter is drifting forward or backward adjust the elevator trim.

  o If the quadcopter is drifting to the left or right adjust the aileron trim.

  It's important to continue making trim adjustments as needed until the quadcopter can hover at an altitude of approximately 12-16 inches (or higher) with very little drifting or directional control input. And while it's not possible to eliminate all drifting completely using the trims it is possible to get very close. Also, if this is your first quadcopter model it may be best to enlist the help of an experienced quadcopter or helicopter pilot to trim the model for you before making your first flight.

- When the quadcopter is properly trimmed, maintain a stable hover and practice using the rudder, elevator and aileron controls to get a feel for how the quadcopter responds to various control inputs. Remember to keep the control inputs as minimal as possible to prevent over-controlling the quadcopter.

- Continue to practice until you're comfortable hovering the quadcopter at approximately 12-16 inches high. Then you can transition to hovering the quadcopter at higher altitudes of approximately three to four feet.

- Don't be afraid to set the quadcopter down on the ground quickly by lowering the throttle when approaching walls or other obstacles to help prevent an impact.

- **IN THE UNFORTUNATE EVENT OF A CRASH, NO MATTER HOW MAJOR OR MINOR, YOU MUST LOWER THE LEFT-HAND/THROTTLE STICK TO THE LOWEST POSSIBLE POSITION AS QUICKLY AS POSSIBLE TO PREVENT DAMAGE TO THE ESCS OF THE CONTROL UNIT.**

   If you do not lower the left-hand/throttle stick to the lowest possible position in the event of a crash it can result in damage to the ESCs of the control unit which may require replacement of the control unit.

   Note: Crash damage is not covered under warranty.

- Once you've gained experience and confidence hovering your quadcopter you can attempt more advanced maneuvers including these:

   Forward Flight   Pirouettes
   Backward Flight   Spot Landings

Automatic Flip Mode

After gaining experience and confidence performing advanced maneuvers such as forward flight, backward flight and pirouettes, you can use the innovative 'Automatic Flip Mode' to perform even more advanced maneuvers with your quadcopter including:

   Stationary Forward/Backward Flips   Stationary Left/Right Rolls/Flips
   'Traveling' Forward/Backward Flips   'Traveling' Left/Right Rolls/Flips

IMPORTANT NOTE: It's important that you ONLY attempt these maneuvers with enough altitude to allow the model to recover after performing the maneuver and until you are familiar with the handling/capabilities of the quadcopter. We also suggest flying the model and first practicing flips outdoors in calm wind conditions, over grass and at an altitude of at least 10+ feet high. Then, after you've become familiar with the handling/capabilities of the quadcopter when performing flips you'll be able to perform them successfully from lower altitudes, in smaller areas and even indoors.

The Automatic Flip Mode (AFM) is activated by pressing the 'AUTO FLIP MODE' button (the left side of the rocker switch) located on the top left 'corner' of the transmitter. You will feel a 'click' and also hear continuous audible beeps/tones that indicate you've activated AFM after pressing the button. At the same time the LED indicator on the 4-in-1 control unit will switch from glowing solid green to glowing solid red.

When AFM is activated you can control the timing and direction of the flip with the (right-hand stick) elevator and aileron controls. ALSO, IT'S VERY IMPORTANT TO NOTE THAT ONCE YOU MOVE THE RIGHT-HAND STICK MORE THAN APPROXIMATELY 3/4 OF THE AVAILABLE TRAVEL IN ANY DIRECTION THE QUADCOPTER WILL AUTOMATICALLY PERFORM A FULL 360 DEGREE FLIP IN THAT DIRECTION. AS A RESULT WE STRONGLY RECOMMEND THAT YOU ONLY ACTIVATE AFM AFTER PLACING THE QUADCOPTER IN THE POSITION AND AT THE ALTITUDE YOU PREFER, AND AFTER ESTABLISHING A STATIONARY HOVER (later on you can experiment with 'traveling' flips that occur during forward/backward or left/right sideways flight but for at least the first few flips it's best to keep them 'stationary').

PRO TIP: It's typically helpful to add some amount of throttle above the position required to maintain hover right before and right after the flip is performed to minimize loss of altitude. In fact, with the right timing and application of throttle before and after the flip it's actually possible to eliminate most or even all loss of altitude in some cases (however, please note that the timing, amount of throttle and the loss of altitude can vary based on the performance of a given model and flight battery, the current weather conditions, altitude, etc.).

After activating AFM:
Pushing the right-hand/elevator stick forward to the highest possible position will cause the quadcopter to automatically flip a full 360 degrees forward from the starting position.

Pulling the right-hand/elevator stick backward to the lowest possible position will cause the quadcopter to automatically flip a full 360 degrees backward from the starting position.

Moving the right-hand/aileron stick all the way to the left will cause the quadcopter to automatically flip a full 360 degrees to the left from the starting position.

Moving the right-hand/aileron stick all the way to the right will cause the quadcopter to automatically flip a full 360 degrees to the right from the starting position.

After the 360 degree flip is complete the transmitter will automatically deactivate AFM and the audible beeps/tones will stop (indicating AFM is no longer active). You can continue to fly 'normally' until you're ready to perform your next flip by pressing the AFM button again.

Transmitter and Receiver Binding/Linking

Binding/linking is the process of programming the receiver in the control unit to recognize the Globally Unique Identifier (GUID) code of a single specific transmitter.

The Ares Ethos QX 75 features user-friendly technology that automatically binds/links your receiver to the transmitter by simply turning the transmitter on first then plugging the flight battery in to power on the receiver/control unit (please see the 'Control Unit Initialization and Arming' section of this manual for more information).

Replacement Parts List

Item Number	Description
AZSC5005PS	5005PS 100-240V AC to 5V DC USB, 0.5-Amp Power Supply
AZSH1203	DC USB Power Cable/Cord for Dual Port Charger: Ethos QX 75
AZSH1204	1-Cell/1S 3.7V LiPo, 0.4A Dual Port DC USB Charger: Ethos QX 75
AZSH1205	300mAh 1-Cell/1S 3.7V 15C LiPo Battery, Micro A Connector: Ethos QX 75
AZSH1206	4-in-1 Control Unit, Rx/ESCs/Mixer/Gyros: Ethos QX 75
AZSH1208	M4LPQ Micro 4-Channel LP Quadcopter Transmitter, Mode 2: Ethos QX 75
AZSH1209	Clockwise Rotation Motor, Mount and Boom Assembly: Ethos QX 75
AZSH1210	Counter-Clockwise Rotation Motor, Mount and Boom Assembly: Ethos QX 75
AZSH1211	Complete Propeller/Rotor Blade Set: Ethos QX 75
AZSH1212	Main Frame: Ethos QX 75
AZSH1213R	Body/Canopy, Red: Ethos QX 75
AZSH1213Y	Body/Canopy, Yellow: Ethos QX 75

Warranty, Support and Service

With the purchase of this product you purchased at the same time a two-year warranty from date of purchase. The guarantee applies only to the already existing material on the purchase of the product and / or functional defects.

Excluded from the guarantee:

· Damage caused by incorrect use

· Damage caused by neglect of duty of care

· Damage caused by improper handling and maintenance errors

· Liquid damage

For warranty claims, please contact your local dealer.

Should it be necessary to send the product, you must enclose a copy of the invoice and a repair order. You can download it at www.robitronic.com. With direct sending to the service department must be consulted beforehand (held by telephone or e-mail).

The postage costs borne by the consignor. Paid packages are not accepted. Everyone sent in warranty case is first examined by our service department on admissibility. For reject warranty claims will be charged back to a control and processing fee before we return the product. Repairs not covered under warranty, before the start of the repair must be paid.

Exploded View Parts Listing

Exploded View #	Description (Quantity Required)	Included In Item #
001	Body/Canopy (1)	AZSH1213R or AZSH1213Y
002	Black Counter-Clockwise Rotation Propeller/Rotor Blade (1)	AZSH1211
003	4-in-1 Control Unit (1)	AZSH1206
004	Motor Mount (4)	AZSH1209 or AZSH1210
005	Counter-Clockwise Rotation Motor (2)	AZSH1210
006	Boom (4)	AZSH1209 or AZSH1210
007	1.5 x 3.5mm Countersunk Screw (4)	AZSH1209 or AZSH1210
008	Motor Cap/Cover (4)	AZSH1209 or AZSH1210
009	1.5 x 3.5mm Countersunk Screw (4)	AZSH1212
010	1.5 x 3.5mm Countersunk Screw (4)	AZSH1212
011	Black Clockwise Rotation Propeller/Rotor Blade (1)	AZSH1211
012	Boom (4)	AZSH1209 or AZSH1210
013	Motor Mount (4)	AZSH1209 or AZSH1210
014	Clockwise Rotation Motor (2)	AZSH1209
015	1.5 x 3.5mm Countersunk Screw (4)	AZSH1209 or AZSH1210
016	Motor Cap/Cover (4)	AZSH1209 or AZSH1210
017	Main Frame (1)	AZSH1212
018	1.5 x 3.5mm Countersunk Screw (4)	AZSH1212
019	1.5 x 3.5mm Countersunk Screw (4)	AZSH1212
020	White Clockwise Rotation Propeller/Rotor Blade (1)	AZSH1211
021	Motor Mount (4)	AZSH1209 or AZSH1210
022	Boom (4)	AZSH1209 or AZSH1210
023	Clockwise Rotation Motor (2)	AZSH1209
024	1.5 x 3.5mm Countersunk Screw (4)	AZSH1209 or AZSH1210
025	Motor Cap/Cover (4)	AZSH1209 or AZSH1210
026	Boom (4)	AZSH1209 or AZSH1210
027	White Counter-Clockwise Rotation Propeller/Rotor Blade (1)	AZSH1211
028	Motor Mount (4)	AZSH1209 or AZSH1210
029	Counter-Clockwise Rotation Motor (2)	AZSH1210
030	1.5 x 3.5mm Countersunk Screw (4)	AZSH1209 or AZSH1210
031	Motor Cap/Cover (4)	AZSH1209 or AZSH1210

Exploded View
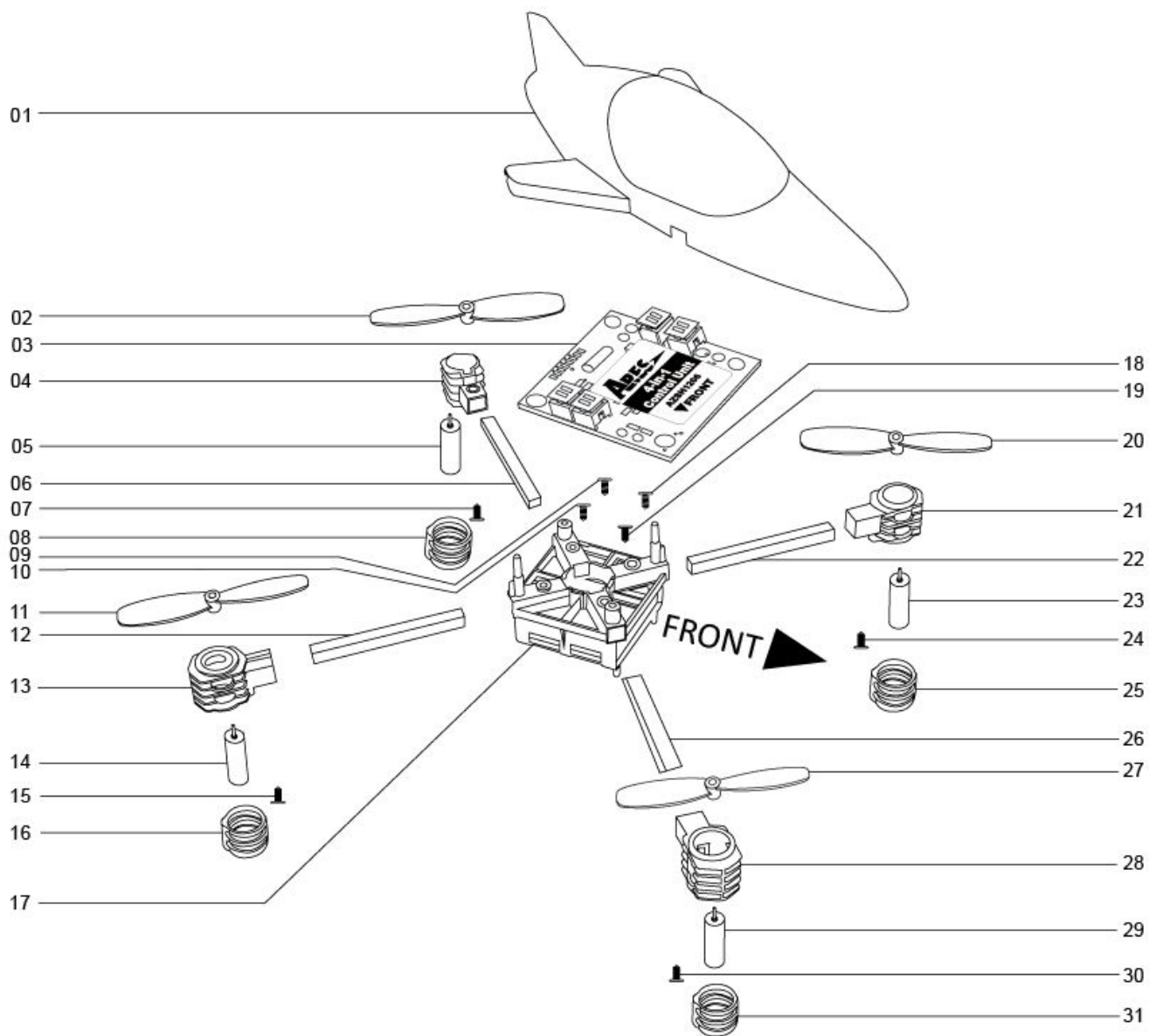
www.Ares-RC.com

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Technical specifications, features and design are subject to change.

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Disposal

Electronic products are raw materials and do not belong in the trash. If the device is at the end of its useful life, dispose the device in accordance with applicable statutory regulations at the municipal collection points. Disposing of household waste is prohibited.

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