SYMA®

14+

HD 8500WH
PRO-LIVE WiFi FPV DRONE

HD 1080P 8 MEGA PIXEL CAMERA EQUIPPED WITH WiFi 720P LIVE VIDEO FEED TO SMARTPHONE
4-CHANNEL PRESSURE FIXED POSITION HOVERING REMOTE CONTROL DRONE

USER MANUAL
OPERATING STANDARDS: GB/T26701-2011

This Drone exceeds maximum weight of 0.55 LBS and must
be registered with The FAA before first flight. Go to
https://registermyuas.faa.gov for registration.

MAIN FEATURES

• Utilizes the 4-axis structure, enabling the aircraft to be even more flexible,
speedy, and possessing a relatively stronger wind-withstanding capability.
It can fly both in large indoor spaces and outdoors.
• 8 Mega pixel HD 1080P Camera with 8 GB Micro SD Card and equipped
with WiFi for FIRST PERSON VIEW (FPV).
• WiFi real-time FPV live streaming video to Apple or Android
Smartphones. WiFi Range up to 130 feet.
• Built-in 6-axis gyro stabilizer to ensure accurate positioning in-flight.
• The structure uses a modular design which makes it easy to install the
prop guards, the landing gear and the battery pack.
• Headless function making it easy for directional control.
• Pressure-fixed-position hovering function for Auto Hover Mode.
• Auto Takeoff and Landing.
• Flight Range up to 330 feet.
• 360° stunt flip button.

Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: 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 the dealer or an experienced radio/TV technician for help.

"This device complies with FCC radiation exposure limits set forth for general population (uncontrolled exposure).

This device must not be collocated or operating in conjunction with any other antenna or transmitter."

Flight Limits and No-Fly Zones

All Unmanned aerial vehicle (UAV) operators should abide by all regulations set forth by government and regulatory agencies including the ICAO and the FAA.For safety reasons,flights are limited by default,which helps users operate this product safely and legally.Flight limitations include height limits,distance limits,and No-Fly Zones.

Keep the safe operation of the operating distance when there are peoples, but not in the crowd of people (12 people) over the flight.

Keep a recommended safe minimum operation distance of 20 feet from people, animals or objects.

Recommended minimum 5 miles from airport and other sensitive buildings

Prohibit operation in the no-drone zones

Comply with applicable restrictions in the restricted area (limited-drone zones)

Keep a safe distance and priority to avoid other aircraft

For video flight instruction visit www.skythunderrc.com

Safety guide

1. Please store the smaller-sized drone accessories in places that are out of reach of children.
2. This drone is very powerful. For all first-time flights, the left joystick must be slowly pushed up in order to prevent the drone from ascending too fast to avoid unnecessary collision and possible damage or injury.
3. When the flight is ended, first turn off the power of the remote control. Then turn off the power of the drone.
4. Avoid placing the batteries in places with high temperatures and exposure to heat.
5. Take extra precaution to ensure that the drone is at a minimum distance of 15 feet from the pilot, other people, and animals in order to prevent bodily injury during flight operation.
6. This drone is for people ages 14+. It must be flown always within the line of sight of the pilot (or instructor) and flown safely.
7. Non-rechargeable batteries are prohibited for recharging. When installing or changing the batteries, please take extra care on the polarities of the batteries. Do not mix new and old batteries or different types of batteries.
8. When the drone is not in use, please remove the batteries in the remote control.
9. The terminals & power supply cannot be short-circuited.

Care and Maintenance

1. Use dry and soft cloth to clean this product.
2. Avoid exposing this product to heat.
3. Do not immerse this product in water, otherwise, the electronic parts will be damaged.
4. Regularly check and inspect the plug and other accessories. If any damage is discovered, immediately stop using it until it is completely repaired in good working condition.

Package Description

The following items can be found in this product package:

- Aircraft
- Remote Control
- Instruction Manual
- Screwdriver
- Card Reader
- Main Blades
- Charger
- Protective Gear
- 8 Mega Pixel HD 1080P Camera With WiFi (Contains 8GB Micro SD Card)
- Camera Hanger
- Power Supply Cable

Installation/Removal Procedures For Protective Gear

Protective Gear Installation

1. Push the protective gear into the connector on the main body as shown.

Protective Gear Removal

1. Pull up the protective gear according to the figure and at the same time pull the protective gear outwards as shown.

Blade Installation/Removal

Blade installation:

1. Blade is inserted as shown.

2. Use a wrench to fasten the hexagonal nut under the base of the main axis, then press blade A onto the axis. Turn the blade counterclockwise to lock it in. Blade B is locked in by turning it clockwise.

3. Attach blade cover as shown.

Blade removal:

1. Remove the blade cover as shown.

2. Use a wrench to fasten the hexagonal nut under the base of the main axis, then press blade A onto the axis. Turn the blade clockwise to loosen it. Blade B is loosened by turning it counter-clockwise.

3. Remove the blade

   NOTE: Make sure to match the marking on the blade "A" or "B" with the body base marking "A" or "B".

Installation/Disassembly Steps For High-Definition Camera

Installation steps for high-definition camera:

| 1. Open camera hanger and put highdefinition camera into the connector by aiming at hanger. | 2. After putting high-definition camera into camera hanger, fasten the lock catch on the connector of camera hanger. | 3. Insert power supply cable of highdefinition camera into the socket of high-definition camera. | 4. Attach the high-definition camera to the drone by sliding the camera hanger into connector on bottom of drone. | 5. Insert power supply cable of highdefinition camera into the socket on the bottom of the drone. |

Disassembly steps for high-definition camera:

| 1. Pull out power supply cable of high-definition camera from the socket on the bottom of the drone. | 2. Press and hold the safe lock of camera hanger, and slide the camera hanger outward. | 3. Pull out power supply cable of highdefinition camera. | 4. Pull lock catch of camera hanger outward forcefully. | 5. Take out highdefinition camera from the hanger. |

Note: After switching on the power of the drone, do not insert or pull out the plug that connects to the drone on the high-definition camera.

WiFi REAL-TIME UPLOAD FUNCTION:
1.Downloading the installation software
Visit www.skythunderrc.com using your Android phone or scan the QR code
to download and install the SKYTHUNDER RC software.
For iOS Apple/Android phones, download and install the SKYTHUNDER RC
FPV App by visiting the App Store/Google Play or by scanning the QR code.
Reminder: QR codes are provided on the packaging box and at the bottom of
the user manual. Please visit website www.skythunderrc.com or the App
Store/Google Play to obtain the newest SKYTHUNDER RC FPV App.
2.How to connect
Connect the model to its power source, the camera indicator light should turn
red. Within 20 seconds, the red light will flash slowly and the camera will be
waiting for a connection with a smartphone. At this time, enter the "Settings"
option on your phone, and turn on WiFi. In the WiFi search list, look for a
network called "SKYCAM ****" and connect to it. Once connection has
been established, exit the "Settings" option. Open the SKYTHUNDER RC FPV
App, click the "START" icon to enter the control interface. The phone's screen
will display real-time images. A full bar in the WiFi signal icon indicates the
strongest possible signal.

The device should be installed and operated with a minimum distance of 20cm between the
radiator and your body.

Open the SKYTHUNDER RC FPV App.

Tap the "START" icon.

The phone's screen will display real-time images.

3.Real-time upload interface icon descriptions

1.Back
2.WiFi signal
3.View photos and videos
4.Record
5.Take photo
6.Recording time

A. Real-time aerial photography uploading:
Photo/Record: When the WiFi camera is operating normally, press the photo/record icon in the real-time upload interface to take photos/videos. (Photos/recordings that were taken can be viewed in the "View Photo and Video" folder)
Note: When using the real-time upload operation in the app, the range for the operating distance of the aircraft will reduce by half. The WiFi real-time upload function is optimal in spacious environments.
B. 1080P 8 mega pixel camera storage function:
When there is a Micro SD card installed in the HD 1080P 8 mega pixel camera,
photos and videos will be stored in both the phone's internal storage and in the micro SD card. When there is no storage card installed in the HD 1080P camera, photos and videos will only be stored in the phone's internal storage in 640P.

PHONE CLIP ATTACHMENT/REMOVAL METHOD:

Phone clip holder installation:

1.Insert the phone clip holder into the connector at the top of the remote control.
2.Press the spring clip to adjust for size.

Phone clip holder removal:
Push the phone clip holder upwards from behind the remote control.

Battery Changing And Charging Methods For Drone

1.Press the power button on the top of the drone to make sure the drone is turned "OFF".

2.Press and hold the fastening component underneath the battery and pull the battery out at the same time.

3. Connect the plug from the charger into the port in the battery, then connect the charger into the charging cradle. The indicator light will turn on while charging and turn off when charging is complete. It takes 150 minutes to completely charge the battery.

4. After the battery is fully charged, put the the battery back into the drone.

The charging time is about 150 minutes; Hover flight time is approximately 10 minutes.

Precautions as follows during charging of battery:

- Avoid placing the active batteries in places with direct exposure, sunlight and high temperatures. For example, naked light or electrical equipment installations; otherwise it may cause damages or explosions.
- Avoid immersing the batteries in the water. The batteries shall be stored in a cool and dry place.
- Avoid dismantling the batteries.
- During the charging of battery, avoid leaving the charging place.

Understanding Your Remote Control

Remote control's button function description:

Power ON/OFF

Left joystick - Keep pushing in for trimming. To clear all the trimming settings, keep pushing in and push the power button at the same time.

Right joystick - Push in over 3 seconds to enter headless mode then push in again to exit. Quickly push in and release to change high / low speed, (one beep means low speed and two beeps means high speed.)

Photo

Video

360° Stunt flip button

Push for auto takeoff and landing

Battery installation for remote control:

Battery cover

4 x AA Alkaline Batteries

1. Battery Installation Method: Open up the battery cover at the back of the remote control. Correctly place 4 x AA alkaline batteries in the battery box in strict adherence to the polarity instructions (the AA alkaline batteries are not included).

> 1. During the battery installation, it must be ensured that the polarities of the batteries are matched with that of the battery box. No battery shall be installed with the opposite polarity.
> 2. Do not use new and old batteries together.
> 3. Do not use different types of batteries together.
> 4. Do not use rechargeable batteries..

Product features

1. Low-voltage Protection:

When the four indicator lights at the bottom of the drone start flashing, it means that the drone's battery power is low. At this time, the drone will initiate the height-limiting function and will descend to a safe altitude.

2. Over-current Protection:

If the drone encounters a direct impact from a foreign object, or is obstructed, or if the blades are not rotating, the drone will go into over-current protection mode.

3. Level Calibration Function:

Place the drone on a level surface and at the same time, push both left and right joysticks to the lower right corners for 2 to 3 seconds; the led light indicator on the drone will blink rapidly, and it will return back to the normal status after about 2 to 3 seconds. The level calibration is successful.

4. Fast/Slow Speed Function:

Slow speed by default when first powered-on. Possible to switch the function mode of fast/slow speed by pressing in on the right joystick for a short time. It is switched into fast speed mode when two "beep" sounds come from the remote control, pressing in on the right joystick for a short time under fast speed mode and then one "beep" sound would come from the remote control, then it is then switched back into slow speed mode.

5. 360° Stunt Flip Function:

When you are familiar with the basic actions, you can proceed to explore even more exciting stunt actions. Fly the drone to a height of 20 feet above the ground, push the upper right corner button (Stunt Flip Button) on the remote control and simultaneously push the right joystick to the farthest position of Front/Back/Left/Right, the drone will now execute the Front/Back/Left/Right stunt flip action.
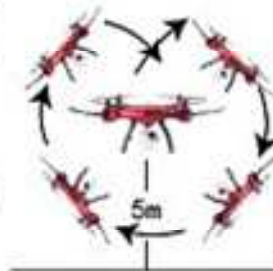
Note: Drone will have the best stunt flip action when the batteries are fully charged.

6. Auto Hover Function:

After using the left joystick (throttle) to control the ascending / descending flight of the drone, release the left joystick (accelerator) and the drone will hover at that height when the joystick is released.
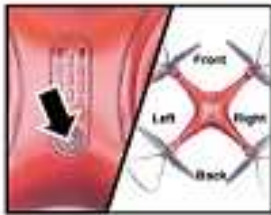
7. Headless function:

a. Defining forward direction:

1. Push on the power button of the remote control.

2. After connecting the drone to the power supply, push the switch to "ON" position, and adjust the specified direction of the aircraft's head under the headless mode as the new forward direction.


3. Push the left joystick (throttle) on the remote control up to the farthest position and then pull down to the farthest position. When the remote control issues a long beep sound, it means the frequency and defining forward direction functions are completed.

B. Toggling between headless function and normal function:

1. After the drone is matched with the corresponding frequency, the drone would be in normal pattern by default. At this time the indicator light on the drone would be in a state of on for a long time. After pressing in on the right joystick of the remote control for 2 seconds, the remote control would make a sound of "beep, beep, beep" to show that it has entered into a state of headless mode. Pressing in on right joystick for 2 seconds then a long sound of "beep" would be heard to show an exit status. (When under the state of headless mode, four indicator lights on the drone are led lights which flicker once every four seconds)
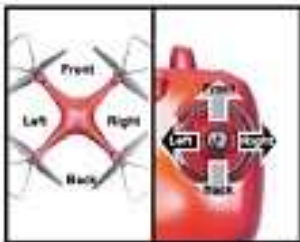
2. Under the headless mode, the operator does not need to differentiate the head position of the drone, and only needs to control the drone's direction front/back/left/right by using the right joystick direction on the remote control.

C. Calibration for the definition of the front:

1. When the drone encounters a direct impact with foreign objects in the headless mode, if there is an occurrence of deviation of the defined direction, it is only required to push both the left and right joysticks to the bottom left corners simultaneously after placing the flying direction of the drone in the correction position. When the led light indicator of the drone is in a long "ON" mode after slowly flashing for 3 seconds, it indicates the calibration is complete.

8. Photo/Video Instructions

1. Camera installation, turn the drone power on, the camera works normally when the RED indicator change from flashing to green and keep light on. If the RED indicator light only flashes on and off a few seconds later, it means the indicator light on is GREEN.

2. How to take photos and videos.

Take Photo :
Make sure camera is on, when pushing the button, camera will take a photo after a beep from transmitter and the GREEN indicator on camera will change to RED and flash one time.

Take Video :
Make sure camera is on, when pushing the top button, camera starts to take video after a beep from transmitter and the GREEN indicator on camera will change to RED and continue flashing. Press the button again, another beep from transmitter means video stopped and the RED flashing light on camera will be GREEN.

3. Camera has two modes of high definition (1080P) and (WiFi).
4. When the drone is installed with aerial photo, please ensure that surface of highdefinition lens is clean. If there is print, such as fingerprint, please wipe it off with a soft cleaning cloth.
5. The recording video format of this HD camera is MOV format. Please use a player that supports MOV format to play this video file.

Flight Preparation And Switching The Drone On And Off

1. Flight Preparation

Step 1: Push the power button of the remote control.

Step 2. Install the battery pack in drone.

Step 3. Press on the power button on the top of the drone to make sure the drone is turned "OFF".

Step 4: Push the left joystick (accelerator) up to the highest point and then push down to the lowest point. When the led indicator lights in the drone change from quick flashing to continuous light, it means that the drone goes into the flight standby mode.
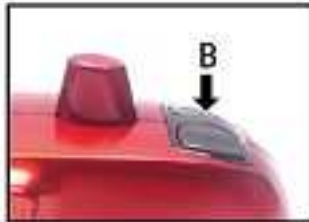
2. Turning on the drone

Method 1: push the left joystick (accelerator) to the highest point and then back to the center, the blades of the drone start rotating slowly.

Method 2: Move the left and right joysticks inwards in an internal loop of "8" for 1 second, the blades of the drone start rotating slowly.

Method 3: When the drone is stationary, press the B button, the drone automatically takes off and hovers at a certain height.

3. Turning off the drone

Method 1: Push the left joystick (Accelerator) to the lowest level and hold there for 2 to 3 seconds, the drone can then be turned off.

Method 2: Move the left and right joysticks inwards in an internal loop of "8" for 1 second, and the drone can be turned off.

Method 3: When the drone is in flight, press the B button, the drone will descend to the ground and lands.

Drone Controlling Diagram

Operating direction
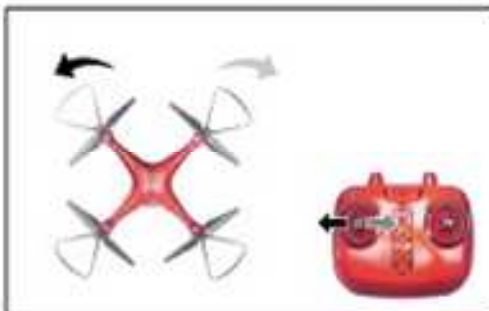
Ascending and descending control

When the left joystick (Accelerator) is pushed upwards or downwards, the drone will ascend or descend correspondingly.
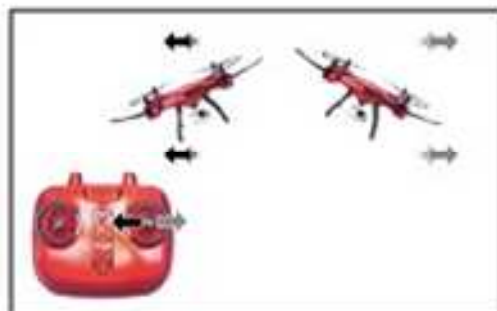
Forward and backward control

When the right joystick (Direction Rudder) is pushed upwards or downwards, the drone will advance forward or backward correspondingly.

Left turning and right turning control

When the left joystick (Accelerator) is pushed towards the left or right, the drone will turn left or right correspondingly.

Left side flying and right side flying control

When the right joystick (Direction Rudder) is pushed towards the left or right, the drone will fly sideways to the left or right correspondingly.

Trimming operation

Forward and backward trim control

While the drone is hovering in the air, it automatically flies forward/backwards, press in on the left joystick and at the same time push the right joystick forward/backward slightly to fine tune the direction. Don't release the left joystick until the drone is flying in a stable state.

Left/right side flight trim control

While the drone is hovering in the air and automatically flies left/right, press in on the left joystick and at the same time push the right joystick left/right slightly to fine tune the direction. Don't release the left joystick until the drone is flying in a stable state.

Left/right side turning trim control

While the drone is hovering in the air, when the drone automatically rotates and flies towards the left/right, press in on the left joystick and at the same time move joystick to the right or left to adjust the direction. Don't release the left joystick until the drone is flying in a stable state.
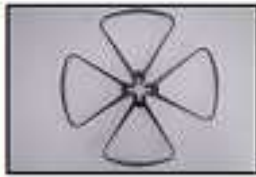
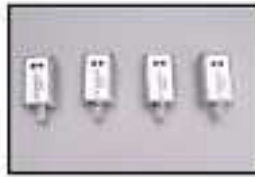# Accessories/Parts List

HD8500WH-01
Upper body

HD8500WH-02
Lower body

HD8500WH-03
Rotor Blades

HD8500WH-04
Landing gear

HD8500WH-05 **Protective Gear**	**HD8500WH-06** **Motors**	**HD8500WH-07** **Lamp Cover**	**HD8500WH-08** **Wrench**
HD8500WH-09 **Charger**	**HD8500WH-10** **Camera**	**HD8500WH-11** **Gears**	**HD8500WH-12** **LED Light Bar (red)**
HD8500WH-13 **Light Bar (green)**	**HD8500WH-14** **LiPo Battery**	**HD8500WH-15** **Card Reader**	**HD8500WH-16** **Plating Fitting**
HD8500WH-17 **Blade covers**	**HD8500WH-18** **Main stand**	**HD8500WH-19** **Blade lockstitch A**	**HD8500WH-20** **Blade lockstitch B**
HD8500WH-21 **Receiver Board**	**HD8500WH-22** **Base of dash**	**HD8500WH-23** **Power Supply Cable**	**HD8500WH-24** **Camera Hanger**
HD8500WH-25 **Remote Control**			
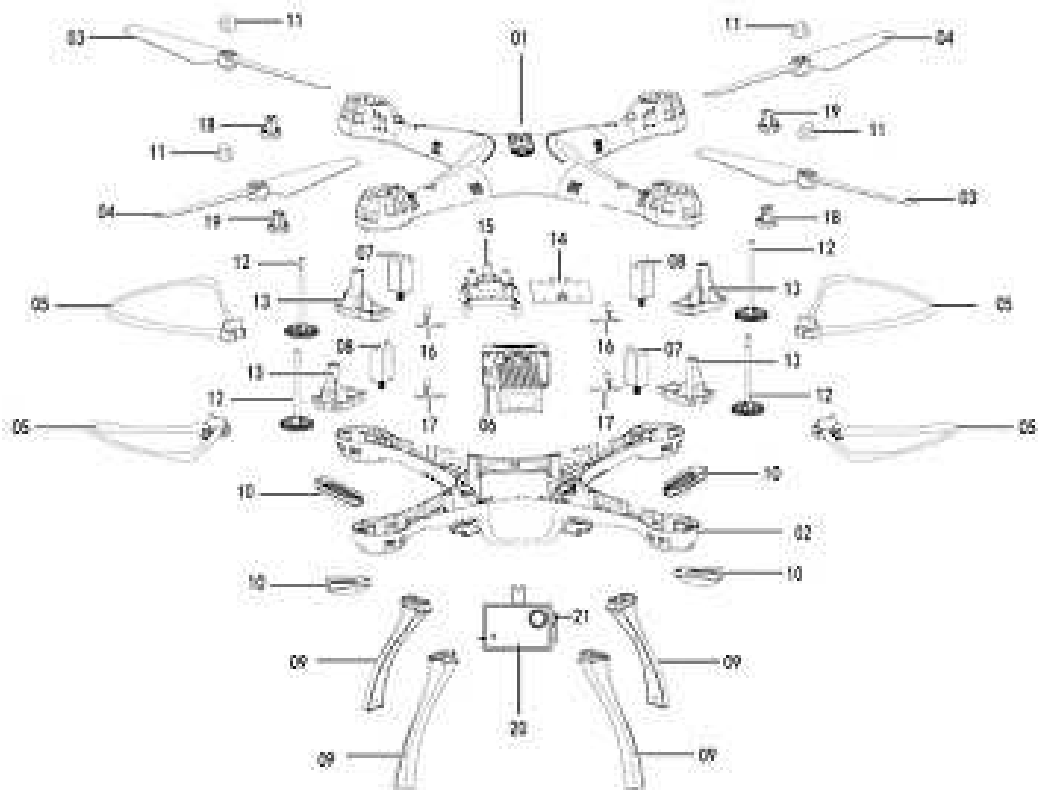
NO.	Product Name	Qty.	NO.	Product Name	Qty.
01	Top Main Body	1	12	Gears	4
02	Bottom Main Body	1	13	Main stand	4
03	Blades (Clockwise Direction)	2	14	Circuit Board	1
04	Blades (counter clockwise Direction)	2	15	Base of dash	1
05	Protective Gear	4	16	LED Light Bar (green)	2
06	Battery	1	17	LED Light Bar (red)	2
07	Motors (Clockwise Direction)	2	18	Blade lockstitch A	2
08	Motors (counter -clockwise Direction)	2	19	Blade lockstitch B	2
09	Landing gear	4	20	HD 1080P 8 mega pixel Camera	1
10	Lamp Cover	4	21	Camera Hanger	1
11	Blade cover	4			

This device complies with Industry Canada licence-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.
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 so chosen that the equivalent isotropically
radiated power (e.i.r.p.) is not more than that necessary for successful communication.
Conformément à la réglementation d'Industrie Canada, le présent émetteur
radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inf
érieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les
risques de brouillage radioélectrique à l'intention des autres utilisateurs, il
faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonn
ée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'é tablissement
d'une communication satisfaisante.
Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux
appareils radio exempts de licence. L'exploitation est autoris é e aux deux
conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2)
l'utilisateur de l'appareil doit accepter tout brouillage radioé lectrique subi,
m ê me si le brouillage est susceptible d'en compromettre le fonctionnement.