

IntelliHead User Guide

Installing, configuring and maintaining your IntelliHead



The IntelliHead is a self-contained, automatic, internet connected beverage pouring unit that is designed as a drop in replacement for traditional bar-top taps or as a mobile unit when combined with the IntelliKeg.

This User Guide will take you from mechanical installation of the unit on to connecting it to the internet and finally configuring it on the IntelliHub, IntelliCup's online management portal.

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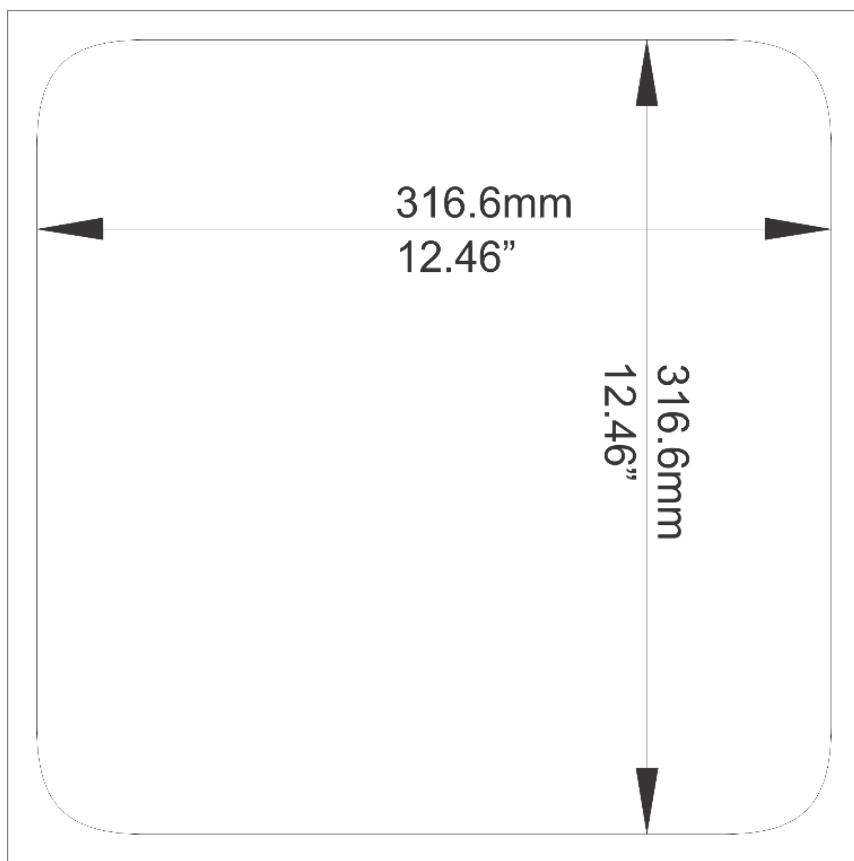
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Installing the IntelliHead

The IntelliHead is designed for easy installation into a bar counter with seamless integration into an existing cold chain. Should you not have an existing cold chain, the IntelliHead is compatible with industry standard chillers and fittings which can be installed with no further training by beverage industry service personnel.

Mechanical Installation

The IntelliHead is designed to drop into a countertop with a suitably sized cut-out and sufficient space below the unit for fittings. The dimensions are shown below:



Countertop cutout size in mm

IntelliCup recommends 150mm clearance below the bottom of the unit for easy installation of piping and cabling.

Counter Top Mounting

Place the complete assembly into the cut countertop. Fit the retaining brackets and screw in 6 off M6x45 screws to secure assembly to counter. See images below.



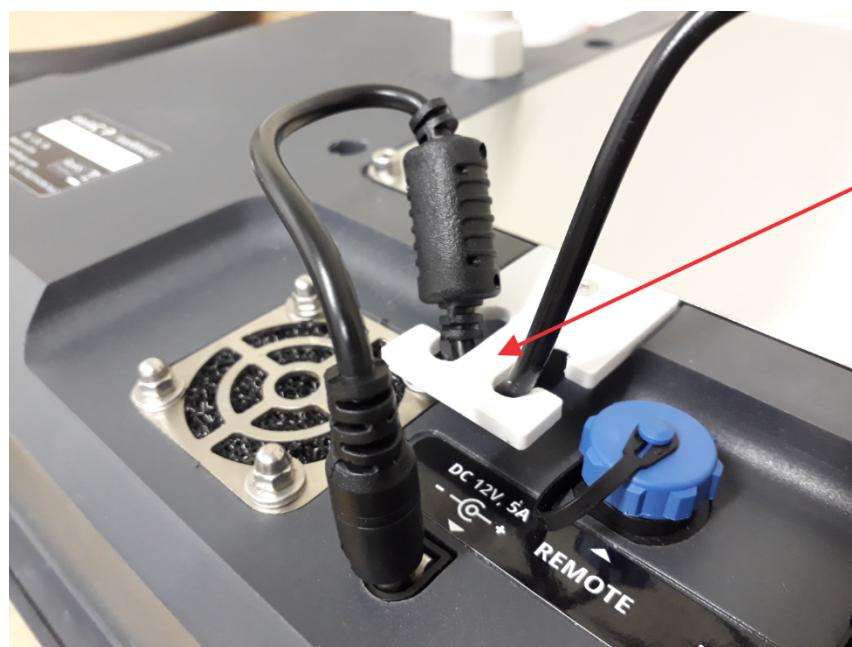
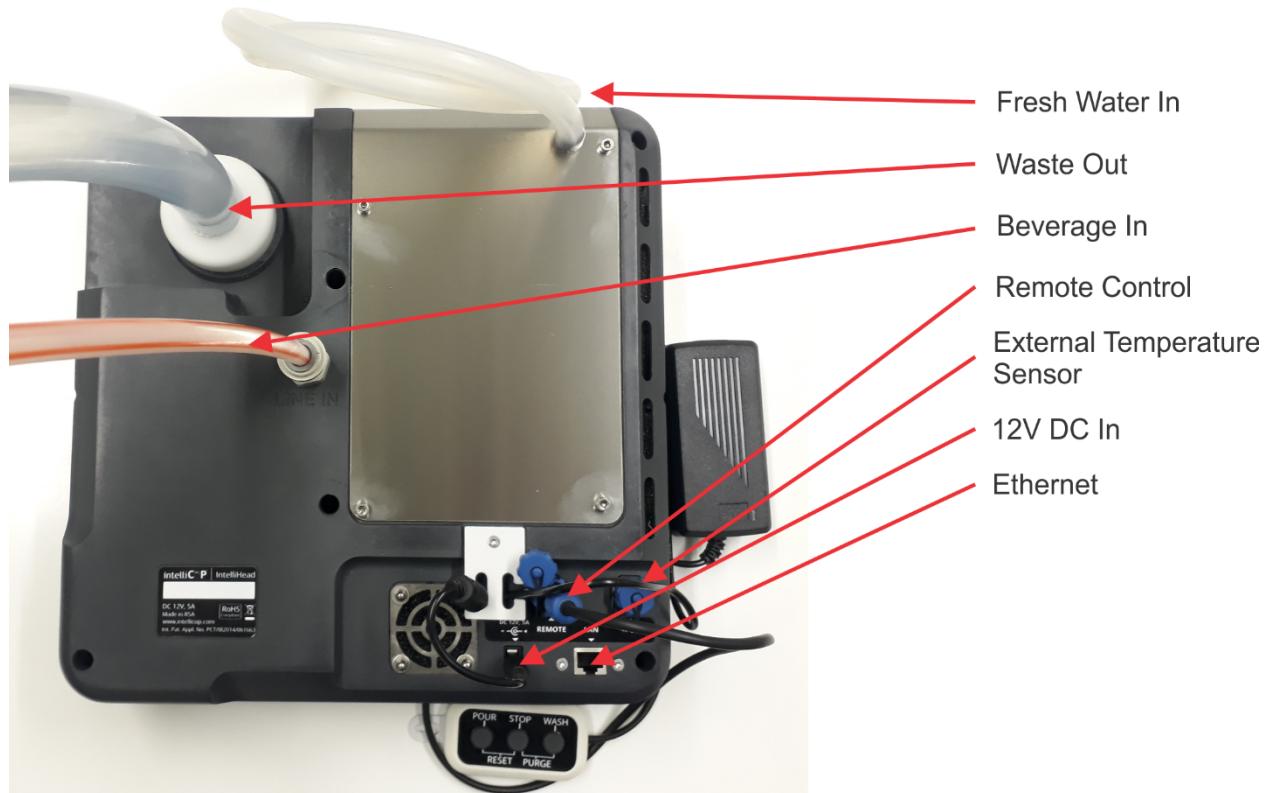
Assembly before dropping into countertop cut-out



Screws tightened to secure unit below countertop

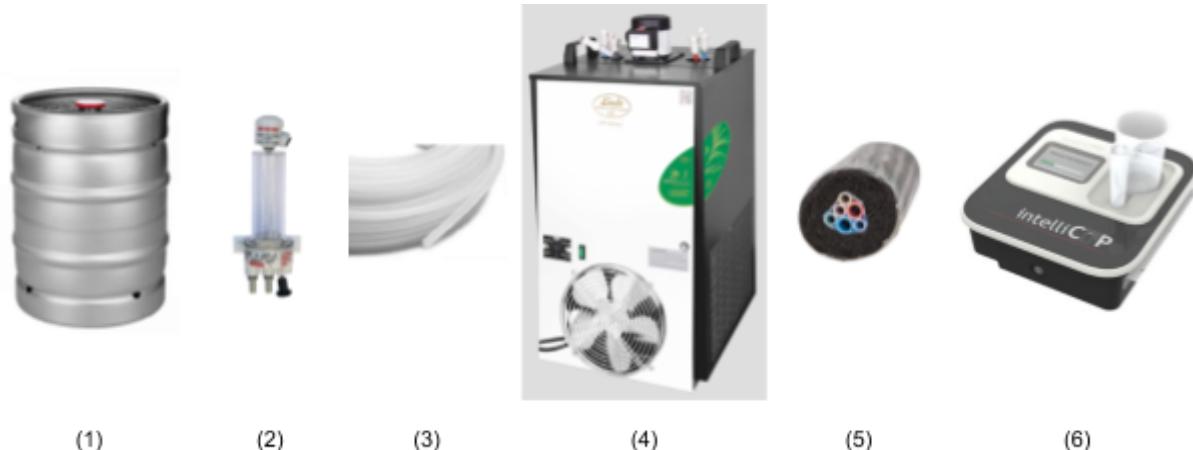
Piping and wiring

The IntelliHead has three compulsory piping connections (beverage in, fresh water in and waste out), two compulsory wiring connections (12V DC in and remote control) and two optional wiring connections (ethernet and external temperature probe).



Beverage In

The IntelliHead has a $\frac{3}{8}$ " John Guest input for the beverage in line on the bottom of the unit. For beer dispensing, the beer is supplied by a keg which is connected to a refrigeration/chiller unit and then to the IntelliHead. The recommended cold chain setup is illustrated below:



(1) Beer Keg (2) Foam Stopper (FOB) (3) $\frac{3}{8}$ " Beer Tubing (4) Refrigeration Unit (5) Insulated $\frac{3}{8}$ " Beer Piping with Active Cooling (Python) (6) IntelliHead

To eliminate any excessive foaming, IntelliCup requires a refrigeration unit with at least a 40m long internal beer coil. An example of such a cooler can be found [here](#) or in the Addendum.

IntelliCup also requires that the piping between the refrigeration unit and the IntelliHead be insulated and actively cooled. This is standard in the beverage industry and is called a 'Python'. Pythons can be bought cut to length from beverage suppliers. A Python consists of at least one beverage line coming out of the refrigeration unit, one cold water line in and one cold water return line. The water lines form a constantly running cooling loop that is fed from the chiller's own water and keeps the beer in the line at the same temperature as the beer in the chiller. These are then wrapped in thick insulation as pictured in (5) above.

Finally, IntelliCup requires a foam control unit also known as a Foam on Beer (FOB) stopper. This stops foam from an empty keg from entering the line by sealing the output when the FOB stopper fills with foam. Once a new keg is connected, the foam is vented through a vent pipe, the FOB stopper fills with beer again and the output is re-opened. These can be purchased from beverage supply stores.

Fresh Water In

The IntelliHead has an internal cleaning mechanism which washes the cup dock and injector area with clean water at regular intervals. This clears any debris from the cup dock area and minimizes bacterial transfer from cup to cup via the injector.

The cleaning mechanism has its own pump and simply requires a 1-5 litre container filled with fresh water. Connect the included silicone pipe to the side of the unit and drop the other end so it is immersed in water at the bottom of the container.

Waste Out

The IntelliHead cup dock area has a drain hole to drain away water from the washing process, to quickly drain away any overflow from an unsuccessful pour and to drain away the waste in the purging and priming process.

Connect the included drain pipe to the drain hole on the bottom of the unit and route the pipe into a 5 litre or larger container. Make sure that the pipe is angled down the entire way from the IntelliHead to the container otherwise waste will pool in the pipe and may cause bad odours.

12V DC In

The IntelliHead is powered by the included 12V DC power supply. Plug the power supply into a 110V-240V AC wall socket and plug the other end into the bottom of the Intellihead. Keep the power supply away from areas where it may come into contact with liquids.

Remote Control

The IntelliHead can be manually controlled using the included external remote control. The remote control allows staff to manually pour, purge, wash and reset the unit.

To connect the remote control, plug its four pin plug into the appropriate socket on the bottom of the unit and tighten the plug to the socket by screwing the housing with your fingers.

Note: The IntelliHead has two similar sockets on the bottom of the unit. The plug should not require any force to insert. Attempting to plug into the incorrect socket may damage your IntelliHead and void your warranty.

External Temperature Sensor (Optional)

The IntelliHead can be paired with an external temperature sensor that is fitted between the keg and the chiller to monitor the input temperature of the keg.

To connect the external temperature sensor to the beverage line, cut the $\frac{3}{8}$ " beverage pipe in between the chiller and the keg and fit the external temperature sensor in between using the John Guest fittings on each end of the sensor.

To connect the external temperature sensor to the IntelliHead, plug its five pin plug into the appropriate socket on the bottom of the unit and tighten the plug to the socket by screwing the housing with your fingers.

Note: The IntelliHead has two similar sockets on the bottom of the unit. The plug should not require any force to insert. Attempting to plug into the incorrect socket may damage your IntelliHead and void your warranty.

Ethernet (Optional)

Ethernet is one of the three methods provided in the IntelliHead to connect to the internet. Consult [Connecting the IntelliHead to the Internet](#) for detailed information on the ethernet connection.

Sim Card (Optional)

Use of a sim card is one of the three methods provided in the IntelliHead to connect to the internet. Consult [Connecting the IntelliHead to the Internet](#) for detailed information on the sim card connection.

To insert sim card unscrew the sim card cover and remove to expose the sim card slot. Insert sim card in the large slot and replace cover plate, see image below.



Priming and Pouring

When the IntelliHead is installed for the first time, the beverage lines need to be *primed*. Priming is the process of filling the beverage lines with liquid, thereby removing all the air pockets from the system. This keeps the pour consistent and allows the IntelliHead to maintain the Perfect Serve.

To prime your IntelliHead, first make sure you have completed every item on the following list:

- Make sure the chiller has already reached temperature
- Make sure all inline valves are in the 'open' position
- Make sure that your CO2 supply is on and your CO2 regulator is set to the correct pressure as defined by your brewer
- Make sure your chiller beverage coil is at least 40m in length

Once you are happy that the list has been satisfied, you can begin to prime the system. The system should be primed using an IntelliCup with the chip removed in order to keep the area clean and to be able to discern the quality of the pour. An IntelliCup with a chip in the handle will interfere with the priming process.

First, insert the IntelliCup into the IntelliHead docking area making sure it is sitting correctly. Then, using the included remote control, press and hold the button combination marked **Purge**. This will cause the injector to engage and the valve to open. Air and foamy liquid will start to pour into the cup. Keep the **Purge** buttons pressed until the cup fills, then let go of the **Purge** buttons to stop pouring. Repeat this process, pouring out the contents of the IntelliCup each time until the beverage is no longer foamy and bursts of foam and air are no longer coming out of the injector.

All of the air should now be out of the lines and the system is primed and ready for use by customers.

Using the Remote Control

Purge

Please consult [Priming and Pouring](#).

Manual Pour

In the event of dissatisfactory pour for a customer or in a demo situation, the operator can perform a Manual Pour. A Manual Pour will fill an IntelliCup up to the volume limit set on the IntelliHub and will be recorded as a Manual Pour in the pour history alongside the volume. To perform a manual pour, hold down the *Pour* button on the remote control and place the cup into the IntelliHead. The IntelliHead will pour until you release the *Pour* button or the volume setpoint is reached.

Wash

To manually clear dirt and debris from the IntelliCup dock area, hold down the *Wash* button until the dirt and debris has been washed away.

Stop

In the event of a malfunction or dissatisfactory pour, pressing the *Stop* button will stop the IntelliHead pouring and retract the injector.

Reset

To reset the IntelliHead, simply press the *Pour* and *Stop* buttons simultaneously. The IntelliHead will reboot just as if the power supply had been removed and reconnected.

Connecting the IntelliHead to the Internet

The IntelliHead needs an active internet connection in order to function. This section will guide you through choosing your preferred connection method, connecting to the IntelliHead Configuration Utility and finally connecting your IntelliHead to the internet.

Choosing Your Connection Method

The IntelliHead has three methods of connecting to the internet, namely via Ethernet (LAN) cable, Wi-Fi or the cellular modem.

Your choice of connection method depends on your available infrastructure, however, for the most stable results IntelliCup recommends an Ethernet connection from the IntelliHead directly to a fixed line modem (Cable, Fibre, ADSL, etc.). Consult the table below to assist you in choosing your preferred connection method.

Connection Method	Pros	Cons	Stability
Ethernet (LAN)	Low delay No interference	Requires running permanent or semi-permanent cabling	Excellent
Wi-Fi	Wireless Allows easy repositioning of the IntelliHead (as long as it is in range) Stable if connected to a fixed line modem (Cable, Fibre, ADSL, etc.)	Subject to congestion and interference from multiple devices on the same network Stability decreases as the signal weakens further away from the Wi-Fi access point	Average to Good <i>Signal strength and congestion dependent</i>
Cellular	Truly mobile - unit can travel anywhere with network service	Subject to congestion and interference from multiple devices on the cellular network Requires one SIM loaded with data per IntelliHead	Average

Once you have decided your preferred method, consult the relevant section below.

Mobile IntelliHeads

If your IntelliHeads are moving from venue to venue, IntelliCup recommends that you choose a connection method that is in your control such as purchasing a stand-alone mobile hotspot or, for a truly mobile set-up, buying a SIM with a data contract for each IntelliHead. IntelliCup does not recommend relying on WiFi provided by venues as the infrastructure is not in your control and your set-up time may be limited should incompatibilities occur.

Connecting Your Device to the IntelliHead

The IntelliHead Configuration Page can be accessed on any device with WiFi capabilities and an internet browser. This includes almost all modern PCs, laptops, smartphones and tablets.

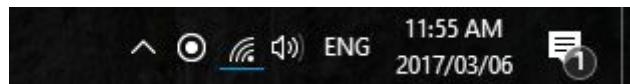
The IntelliHead creates its own Wi-Fi Access Point (AP) to which you can connect your device. The name of the AP is the same as the serial number of your IntelliHead, e.g. IntelliHead-12. The network password (also known as the security key, WPA key or PSK) was emailed to you on delivery of your IntelliHead.

Find your device in the list below and follow the connection instructions.

Note: Once connected to the IntelliHead AP, your device will lose internet access.

Windows 10

Click on the network icon in the bottom right of your screen as underlined in blue below:

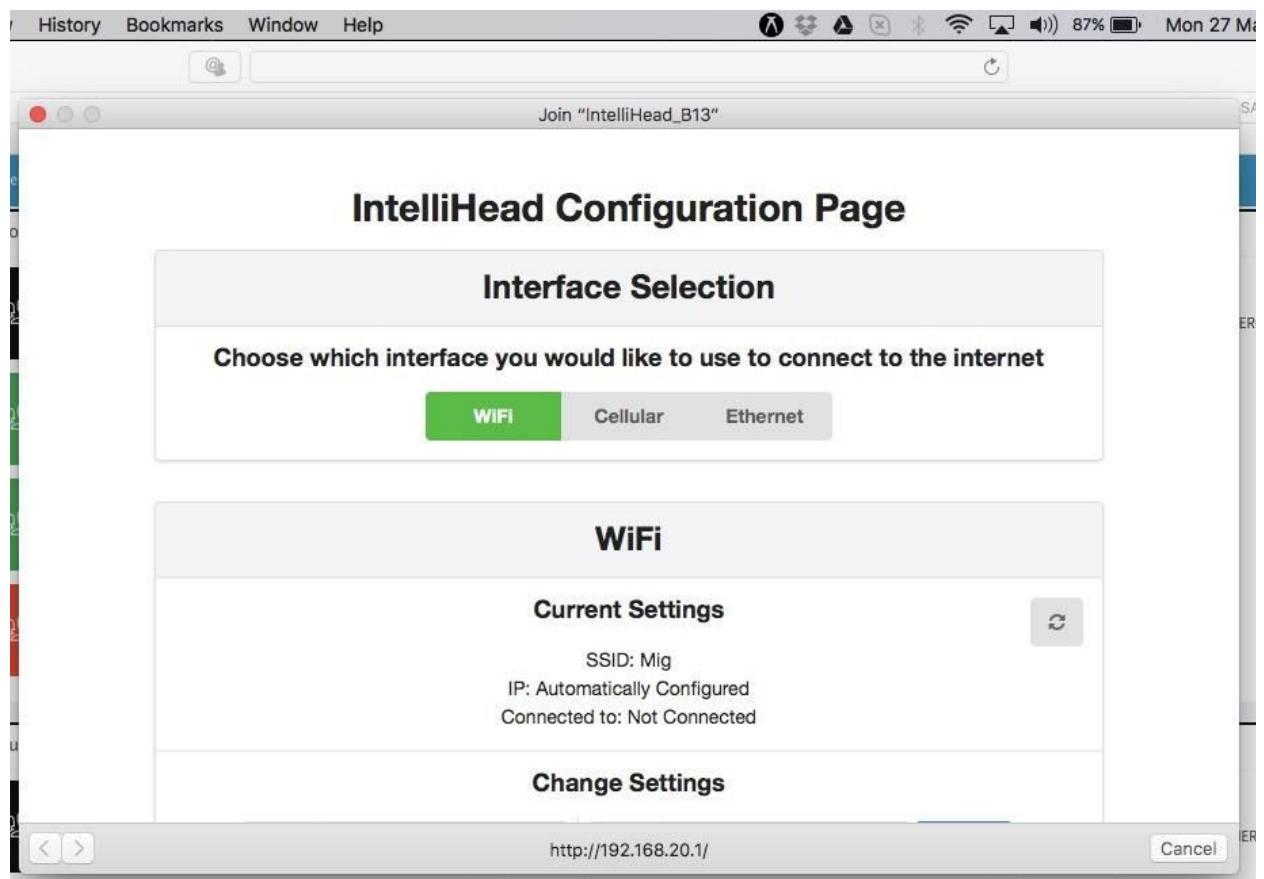


Find the WiFi name of your IntelliHead in the WiFi list as in the image on the right. Click connect, enter the network security key and then press “Next”.



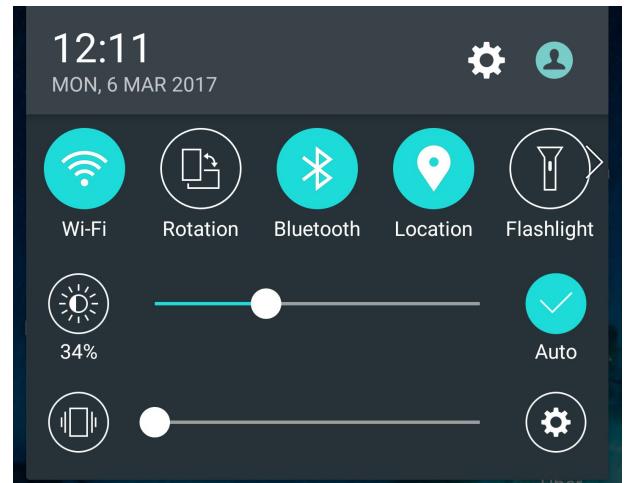
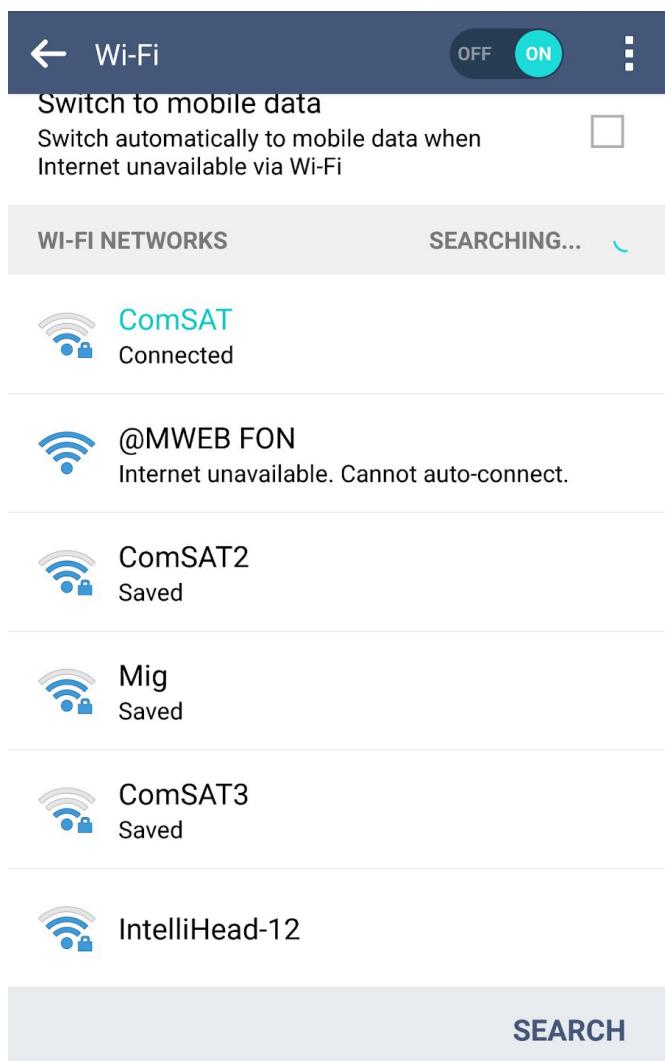
Mac OS (formerly OSX)

Click on the network icon in the menu bar (the bar on top of your screen). Find the name of your IntelliHead in the Wi-Fi list and click on it as shown to the right. Enter your password in the following screen and click 'Join'. Once joined, the screen below should appear and you can move to the next step.

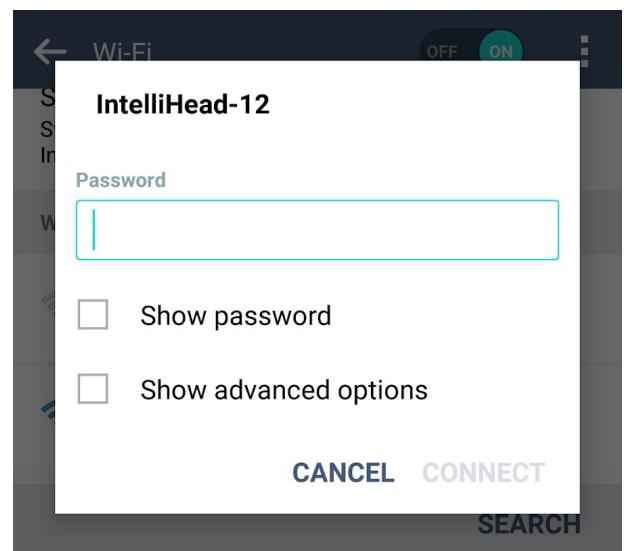


Android (Samsung, LG, Sony, etc)

Pull down from the top of your screen to bring up the notification and quick settings shade as in the image on the right. Then long press on the Wi-Fi button to bring up the Wi-Fi settings menu as below.



Next, find your IntelliHead's name in the list and tap on it, bringing up the screen



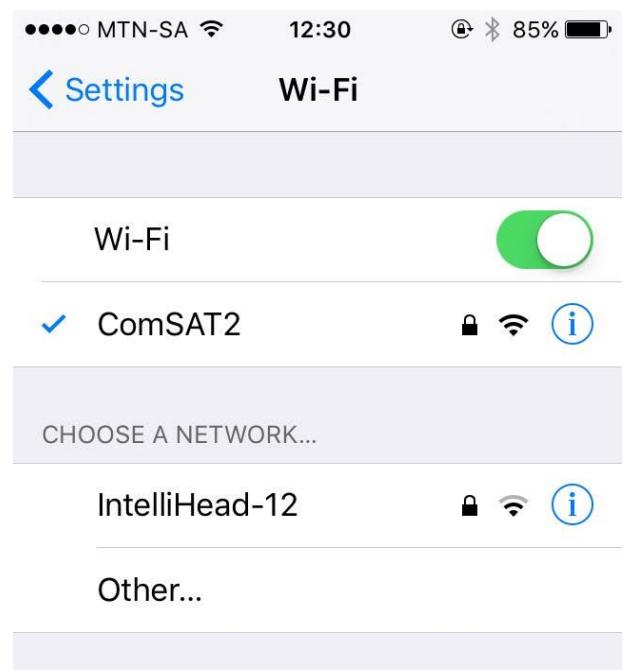
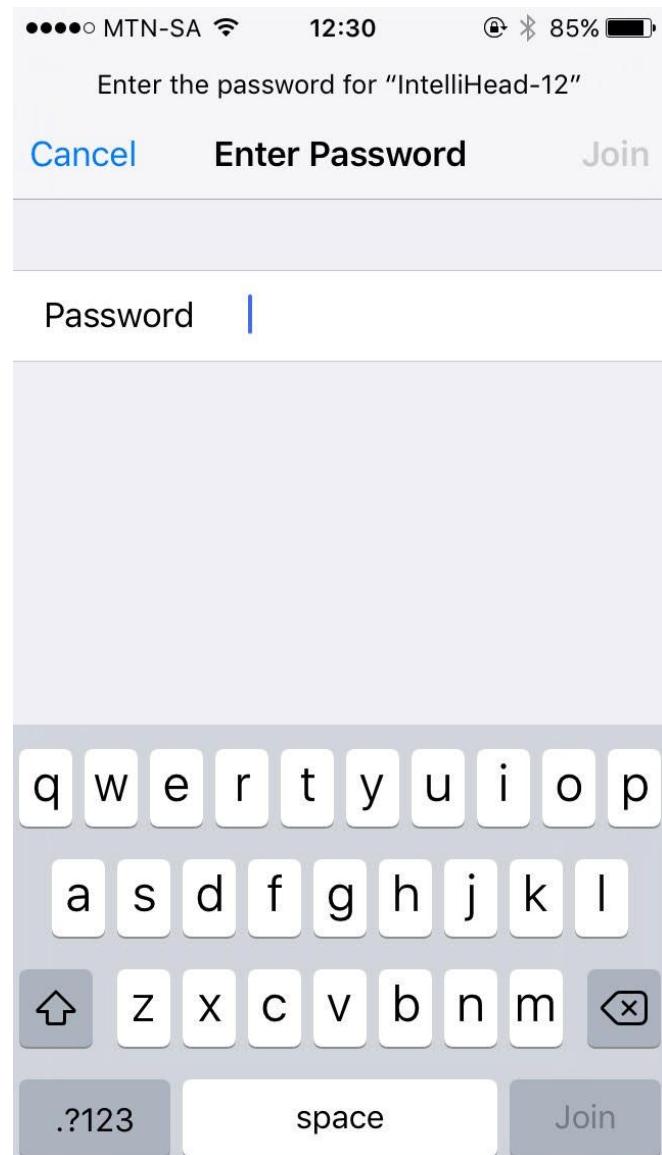
below.

Enter your password as provided and click CONNECT.

iOS (iPhone)

On the **Homescreen**, tap on the **Settings** icon. Then in the Settings menu, tap on **Wi-Fi**, bringing up the menu on the right.

Find your IntelliHead's name in the **CHOOSE A NETWORK** list and tap on it to bring up the screen below.



Enter your password as provided and click **Join** in the top right corner.

Accessing the IntelliHead Config Page

On some systems, once your device is connected it will open up a browser window directly to the Configuration Page below. If this does not occur, open up your internet browser.

Depending on your platform this may be named Internet Explorer, Safari, Chrome, Firefox or simply Internet.

In the address bar of your internet browser (normally a text box at the top of the application), enter the web address 192.168.20.1. If successful, the web page below should load.

IntelliHead Configuration Page

Interface Selection

Choose which interface you would like to use to connect to the internet

WiFi Cellular **Ethernet**

Ethernet

Current Settings

IP: Automatically Configured

IP Settings

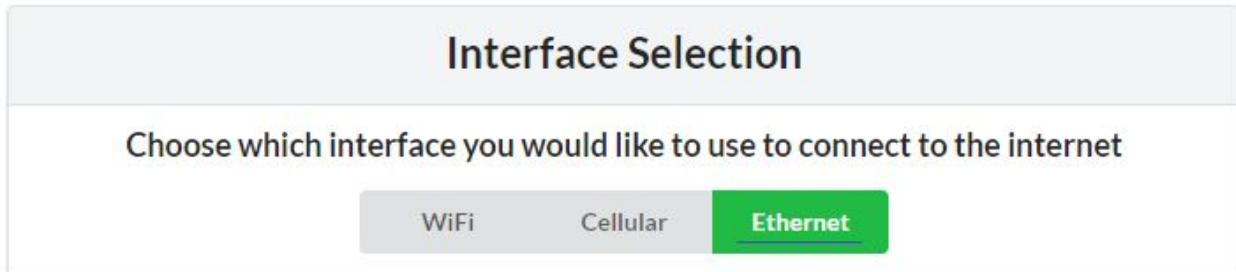
DHCP Static

IP	eg: 192.168.0.10
Gateway	eg: 192.168.0.1
DNS	eg: 8.8.8.8

Save

Ethernet

1. Connect one end of an Ethernet cable (not included) to your router/modem/network switch and the other end to the bottom of your IntelliHead.
2. On the **IntelliHead Configuration Page** that you accessed in the previous section, click on the button labelled **Ethernet**, as underlined in blue below. This should turn it green.



Interface Selection

Choose which interface you would like to use to connect to the internet

WiFi Cellular **Ethernet**

3. Make sure that that **DHCP** is checked in the **IP Settings** sections. If not, check it and click the **Save** button.
4. Wait 60 seconds.
5. Check the IntelliHead display to see whether the “Connectivity Lost” screen is not longer displayed. If it is, restart the unit by simultaneously pressing the **Purge** and **Stop** buttons on the IntelliHead remote. If once restarted the IntelliHead still shows “Connectivity Lost”, consult the Ethernet Advanced section.

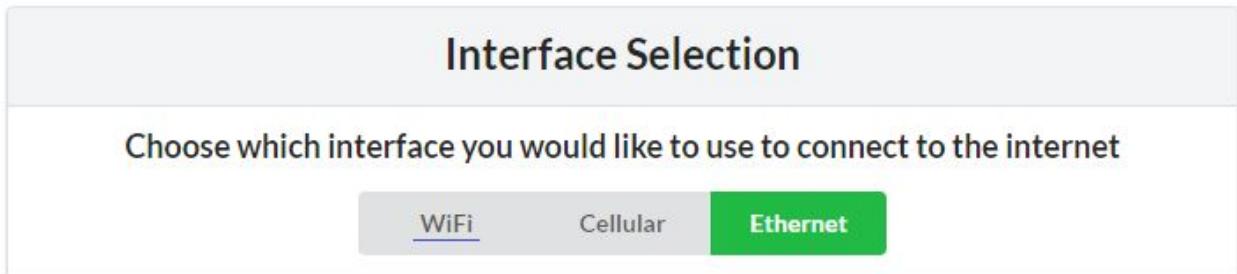
Ethernet - Advanced

Some networks (especially corporate and academic networks) require specialised settings in order for devices to connect to the internet through them. The IntelliHead configuration page has a **Static** IP option to accommodate these networks.

Consult your IT Support to see whether this is necessary. If so, request a static IP, Gateway and DNS from your IT Support, check **Static** in the **IP Settings** section and enter them in the relevant text boxes. Once you have entered them, click the **Save** button and refer to *Step 4* above.

Wi-Fi

1. On the **IntelliHead Configuration Page** that you accessed in the previous section, click on the button labelled **WiFi**, as underlined in blue below. This should turn it green.



2. In the **Change Settings** section, click on the **Search** button. After a few seconds, a list of WiFi APs in range should appear. Click on the name of the network you would like to connect to and it will be copied automatically to the text box labeled **SSID**.
3. Type your WiFi password into the text-box labelled **PSK**.
4. Click **Save**.
5. Make sure that that **DHCP** is checked in the **IP Settings** sections. If not, check it and click the corresponding **Save** button.

After a few seconds, the first line in the **Current Settings** section should display **SSID**: and then the name of your network. Wait 30 seconds, then press the refresh button in the top right of the **Current Settings**. If it has connected successfully, the last line should read **Connected to**: and then the name of your network. If the connection fails, re-check your credentials, click the "Save" button, wait for the loading icon to stop and click the save button again. Wait 10 seconds then refresh the "Current Settings" block.

Wi-Fi - Advanced

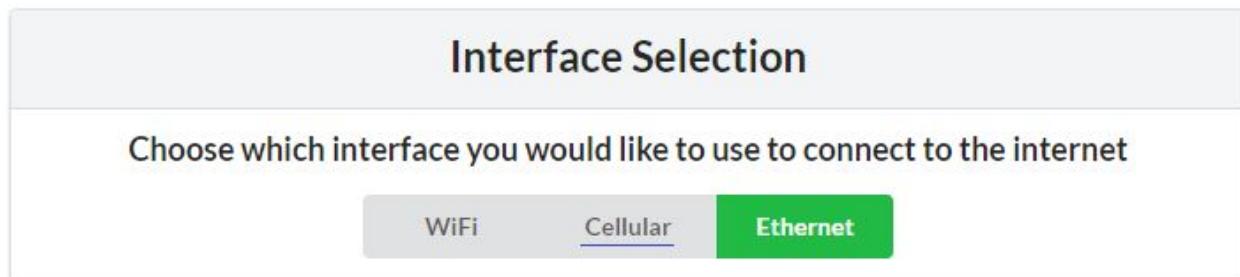
If your Wi-Fi Access Point is a *hidden* access point or if you would like to configure your Wi-Fi settings in preparation for an event you can manually type in your Wi-Fi name into the **SSID** text-box and your password into the **PSK** text-box.

Some networks (especially corporate and academic networks) require specialised settings in order for devices to connect to the internet through them. The IntelliHead configuration page has a **Static** IP option to accommodate these networks.

Consult your IT Support to see whether this is necessary. If so, request a static IP, Gateway and DNS from your IT Support, check **Static** in the **IP Settings** section and enter them in the relevant text boxes. Once you have entered them, click the **Save** button.

Cellular

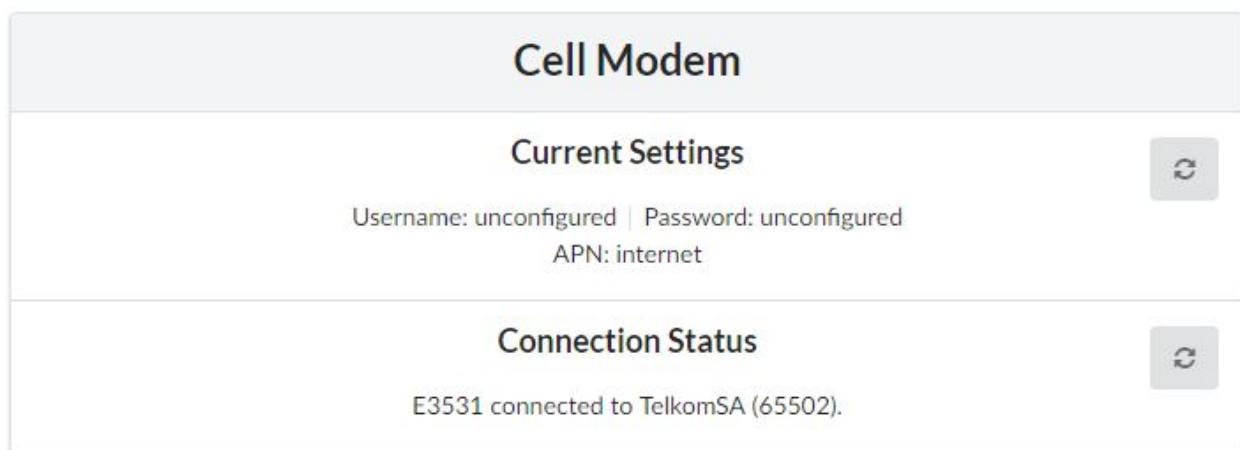
1. On the **IntelliHead Configuration Page** that you accessed in the previous section, click on the button labelled **Cellular**, as underlined in blue below. This should turn it



green.

2. Insert a SIM into the supplied USB dongle or SIM slot on the base of the unit. The IntelliHead does not support PIN protected SIMs and thus the SIM must not be PIN protected. If it is, insert it into a mobile phone and remove the PIN protection in the device settings. Consult your mobile phone manual for more info.
3. If your network provider requires a custom **APN**, enter it in the text-field labelled **APN** in the **Change Settings** section. Consult your network provider to see whether this is necessary. A blank text-field will default to the APN, *internet*.
4. If your network provider requires you to log in with a **Username** and **Password**, type these into the text-fields of the same name. If not, leave the text-fields blank.
5. Click **Save** to connect.

Connecting may take some time during which a loading screen will fill the page. Once the attempt is complete, the page is shown again and the result of the connection is shown in the **Connection Status** section. Pressing the refresh icon in the **Connection Status** section after successfully connecting will display more information about your connection. An example of a successful connection is shown below.



*Note: The **Save** button needs to be pressed after changing to **Cellular** from either **Wi-Fi** or **Ethernet** before the modem will attempt to connect.*

Updating the Firmware

In order to keep your IntelliHead secure and with the latest features, IntelliCup employs automatic Over the Air (OTA) updates to all IntelliHeads. The update procedure takes seconds and will not be noticeable to you or your customers and will take place as soon as the update is made available or next time the IntelliHead is brought online.

IntelliHub: Managing your IntelliHead online

The IntelliHub is the cloud based web portal that allows Merchants to use IntelliCup system to manage and monitor their assigned IntelliHeads online.

For detailed instructions refer to the IntelliHub User Guide – Merchant

https://docs.google.com/document/d/1i_eSgpZt5ZXjfKctI5bJLlb8rmQJbz60GDKob-MWFc8/edit?usp=sharing

Troubleshooting

Pour Troubleshooting

There is excessive foaming while pouring

- Make sure your chiller has reached temperature, warm beer releases carbon dioxide more readily
- Make sure your CO2 pressure is within the brewer's specification. A common pressure for pure CO2 is 2.5 bar (36 PSI).
- Make sure your chiller coil is minimum 40m long internally.
- Check whether your beer has spoiled. Spoiled beer releases excessive CO2.

The injector injects into the cup but does not pour

- Listen for an audible *click* once the injector has injected. If you can't hear the click, check the pressure in the line: The internal valve cannot operate above 4 bar (58 PSI). Drop the pressure and try again.
- If the *click* is audible but the IntelliHead still won't pour
 - Check all inline valves and make sure they are open
 - Make sure the FOB is not sealed
 - Check that the keg is coupled correctly and not empty
 - Check that your chiller has not dropped below the freezing point of beer, ~2°C (~27°F)

Network Troubleshooting

The IntelliHead Configuration Page is inaccessible

- Make sure your device shows that it is connected to the correct WiFi network (It should be the same as your IntelliHead's serial number)
- Type in the address 192.168.20.1 directly
- If the issue persists disconnect and reconnect your device to the IntelliHead's WiFi network
- If the issue is still not resolved, power off the IntelliHead, leave it off for a minute and power it back on and restart your device as well

The Wi-Fi "Current Settings" block shows "Not Connected"

- Refresh the "Current Settings" block
- Re-enter your network credentials making sure they are correct. Click the "Save" button, wait for the loading icon to stop and click the save button again. Wait 10 seconds then refresh the "Current Settings" block

The IntelliHead screen displays “no connectivity”

- Check that the correct interface is selected in the IntelliHead Config Page
- If using Wi-Fi, refresh the Current Settings and see whether the correct network is shown after “Connected to:”
- If using Wi-Fi, check that the Wi-Fi AP has a working internet connection using another device (smartphone, laptop, etc.)
- If using Ethernet and DHCP, make sure that your network supports DHCP and that your network doesn’t have a MAC filter.
- If using Wi-Fi or Ethernet, make sure that your network doesn’t have a firewall blocking port 8883 outgoing TCP

The IntelliHead screen displays “no connectivity” when using GSM interface

- Refresh the “Connection Status” block, if not connected
 - Re-enter your credentials and click “Save” again
 - Make sure your SIM card has the PIN lock disabled
 - Make sure you have entered the correct APN for your SIM card (contact your SIM provider for assistance)
 - Make sure a) your SIM doesn’t require a username and password or b) you have entered your correct username and password
- If connected
 - Make sure your SIM is provisioned for data access and that you have a working data contract/prepaid bundle

The Wi-Fi scan returns no results and the IntelliHead shows “no connectivity”

- Power off the unit, wait 1 minute then power on again. The issue should resolve itself. You may need to re-enter your Wi-Fi credentials.

The WiFi password is correct/there is no WiFi password but the IntelliHead won’t connect to the WiFi

- Some WiFi networks (especially ‘public’ or ‘open’ WiFi and corporate WiFi) have certain built in limitations such as requiring user input, limiting time/data, requiring whitelisting, etc. These networks may not support smart devices such as the IntelliHead. In general, IntelliCup recommends steering clear of ‘public’ or ‘open’ networks for a variety of reasons. For installation into managed corporate networks, IntelliCup recommends that IT management contacts IntelliCup Support directly in order to go through the connection options.

If your issue is not listed above, power off the unit, wait 1 minute then power it on again. If this fails to resolve the issue or it re-occurs frequently, contact your IntelliCup representative and they will put you in touch with the IntelliCup technical team who will gladly assist you.

FCC part 15 Statements for User's Manual

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.

Warning: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this 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 equipment uses the following Antennas and may not be used with other antenna types or with antennas of higher gain:

LTE antenna

Mfg.:Antenova

Type: FPC Self-adhesive 3M 468P

Gain: peak 3.5 dBi

GPS Antenna

Mfg.:Antenova

Type: FPC Self-adhesive 3M 468MP

Gain: peak 4.0dBi

NFC antenna

Mfg: Skeg Product development

Type:NCF loop antenna

Gain:-54.1 dB

Note: The IntelliHead NFC Module is not intended for other OEM integrators or end users. The module is intended to be integrated by grantee authorized installers at the grantee manufacturing facility.

Labeling Instructions for end product:

The end product must be labeled, in a visible area, with the following:

Contains FCC ID: 2AQ2P-IHB

Contains IC: 24263-IHB

ISED Required User Manual Statements for Certification

NOTE: these statements are required to be listed in both English and French Languages

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.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

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 inférieur) 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 rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.

This equipment complies with the ICES RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20cm between the radiator and any part of the human body.

Cet équipement est conforme aux limites d'exposition aux radiations ICES définies pour un environnement non contrôlé . Cet équipement doit être installé et utilisé à une distance minimale de 20 cm entre le radiateur et une partie de votre corps.