NORTH OF YOU

Arsenal 2 User’s Manual

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1. Document Overview

This document contains the specifications and features of Arsenal 2 - The Intelligent Camera Assistant. It also contains setup and maintenance instructions.

2. Document Revision History

Date	Revision	Revision Changes
2020/03/25	0.1	Initial creation of the document.
2020/11/18	0.2	Updated Section 13.
2020/12/13	0.3	Updated Section 13.

3. Arsenal 2 Overview

Arsenal 2 is an intelligent camera assistant. It connects to a DSLR or mirrorless camera over USB and allows for remote control of the camera from a smartphone via WIFI. Arsenal 2 provides tools to assist in photo stacking, timelapses, and producing long exposures. Lastly, it uses machine learning to suggest settings to the user based on the current subject being photographed and data from the camera and sensors.

4. Arsenal 2 Specifications

a. Input Power

Charger	
Input Power	**Rating**
AC Power	100-240VAC 50/60Hz Max 0.3A
Arsenal 2	
Input Power	**Rating**
USB Charger Connection	5VDC Max 1.0A

b. Operating Environment

Factor	Metric	US
Temperature	0°C to 35°C	32°F to 95°C
Humidity	10% to 90%	10% to 90%

5. What's included with Arsenal 2?

a. Arsenal 2

b. Coiled USB Cable

c. Charger and Charger Cable

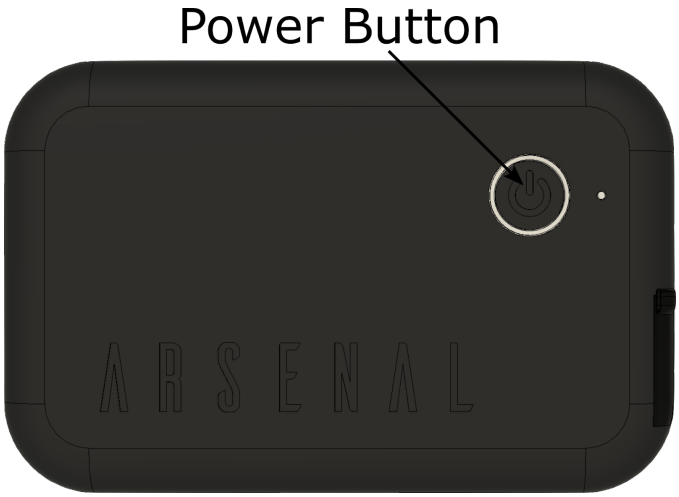
i. Note: Not included in non-US models.

d. Phone App

i. Downloaded from the Google Play Store or Apple App Store.

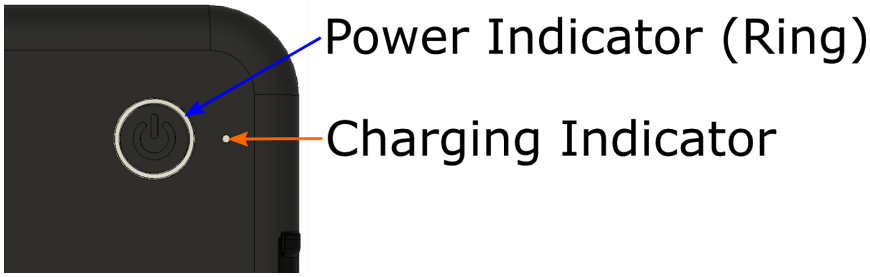
6. Quick Tour of Arsenal 2

a. *Power Button*



i. Button to power On and power Off Arsenal 2.
ii. If Arsenal 2 is Off, a single momentary short press will power On Arsenal 2. The ring around the button will illuminate and the LED Bar will display an animation after Arsenal 2 has booted.
iii. If Arsenal 2 is On, a single momentary short press will power Off Arsenal 2. The LED Bar on Arsenal 2 will display a short animation before powering off.

b. *Status Indicators*



Power Indicator	
Off	Arsenal 2 Powered Off
On	Arsenal 2 Powered On

Charging Indicator	
Off	Arsenal 2 not charging
On	Arsenal 2 charging
Blinking	Charger problem

c. Charger Connector

i. Used to charge Arsenal 2 with the provided Charger and Charger Cable.

d. Camera Connector

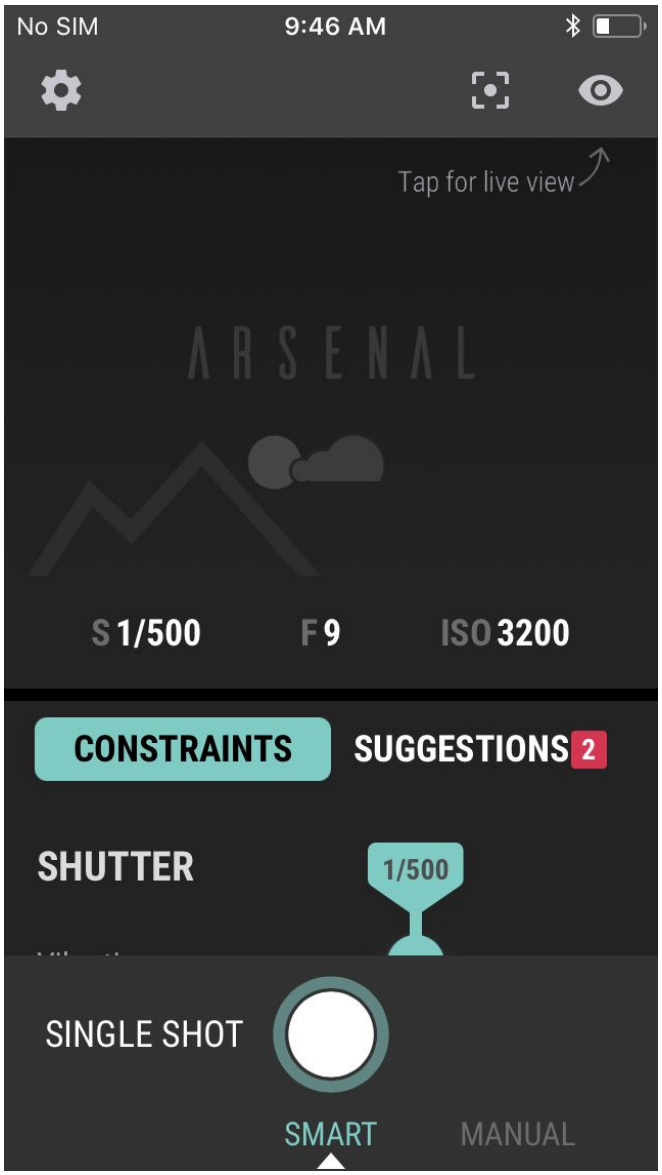
i. Used to connect Arsenal 2 to the Camera with the Coiled USB Cable.

e. Hot Shoe Slide

i. Used to secure Arsenal 2 to the Hot Shoe on a DSLR or mirrorless camera.

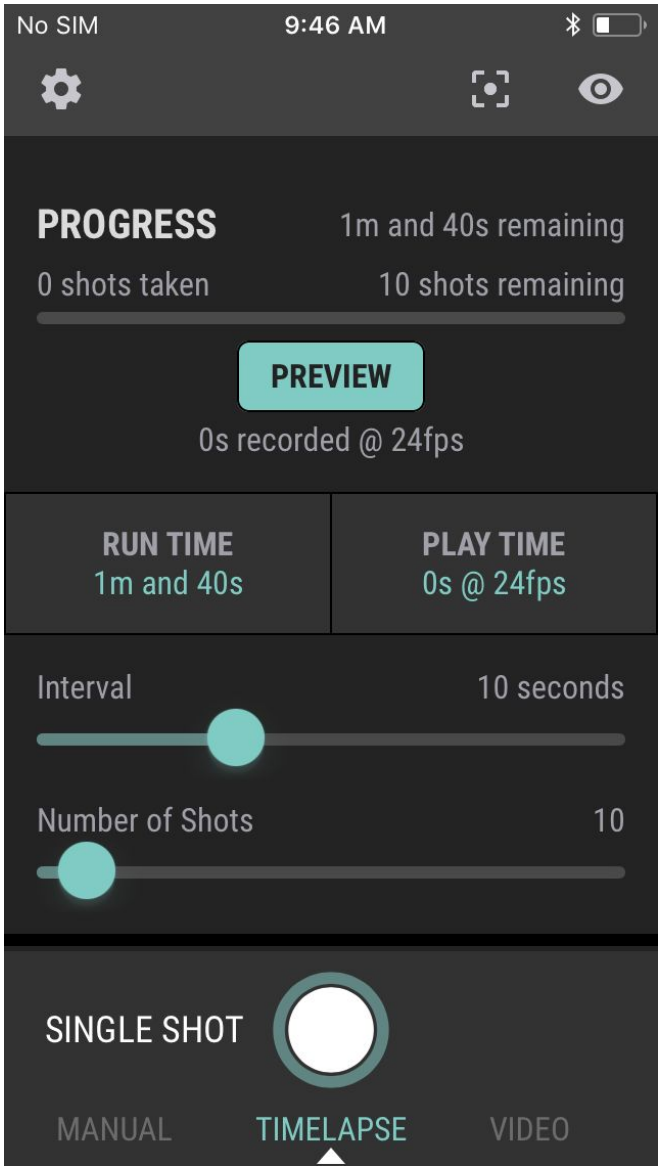
7. Quick Tour of App

a. Smart Mode

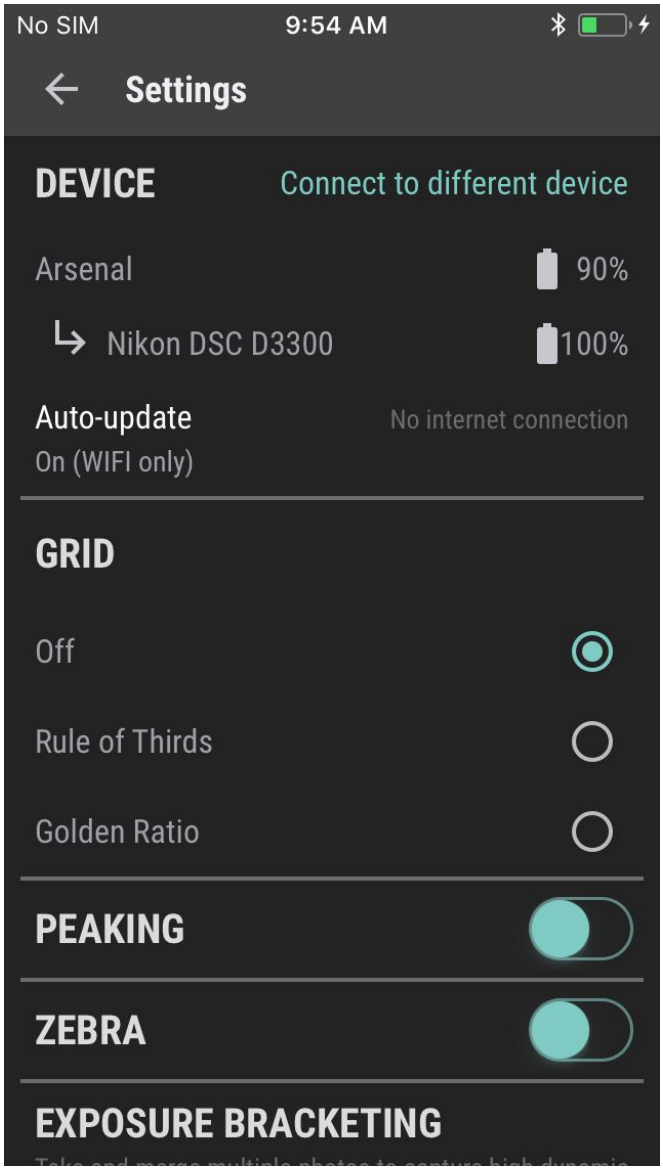


b. Manual Mode

c. Timelapse


No SIM
9:46 AM
PROGRESS
1m and 40s remaining
0 shots taken
10 shots remaining
PREVIEW
0s recorded @ 24fps
RUN TIME
1m and 40s
PLAY TIME
0s @ 24fps
Interval
10 seconds
Number of Shots
10
SINGLE SHOT
MANUAL
TIMELAPSE
VIDEO

d. Settings


No SIM
9:54 AM
Settings
DEVICE
Connect to different device
Arsenal
90%
Nikon DSC D3300
100%
Auto-update
No internet connection
On (WIFI only)
GRID
Off
Rule of Thirds
Golden Ratio
PEAKING
ZEBRA
EXPOSURE BRACKETING

8. Setup Instructions

a. Instructions

i. Slide the Arsenal 2 into the Hot Shoe of the Camera.

ii. Connect the Coiled USB Cable to the Arsenal 2 and USB Connection on the Camera.

iii. Turn the Arsenal 2 On and allow it to boot. This will take about 15 seconds.

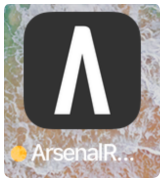
iv. Set the Camera to Aperture Mode and turn it On.

v. On the Phone, open Settings and select WiFi.

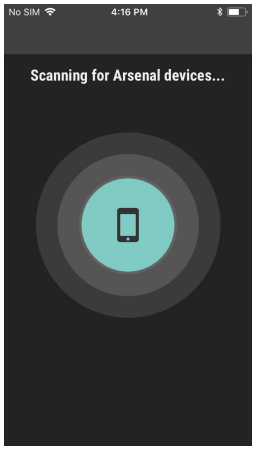
vi. Connect to the WIFI network named "arsenal."

   1. Note: If needed, the password is "arsenal1234"

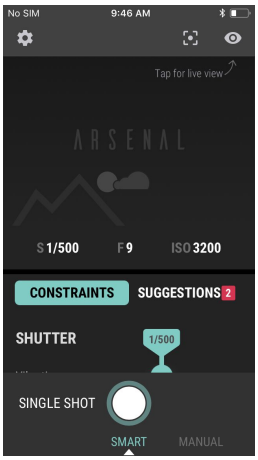
vii. Close Settings, and open the Arsenal App.



viii. The Arsenal App should momentarily state "Scanning for Arsenal devices..." before connecting to Arsenal 2.



ix. After the Phone has connected to the Arsenal 2, the screen will update to the main application screen. Arsenal 2 is now ready to use.



9. Charging Instructions

Arsenal 2 can be charged by any standard 5V USB Port.

a. To charge:

i. Connect the provided Charger* to a compatible wall outlet.
ii. Connect the provided Charger Cable to the Charger.
iii. Connect the other end of the Charger Cable to the Charger Connector on Arsenal 2. If Arsenal 2 was already On, the Amber Charging Status Indicator will illuminate. If Arsenal 2 was Off, it will momentarily turn On and display a brief animation before turning back Off, but the Amber Charging Status Indicator will remain illuminated.
iv. Allow 2 to 3 hours to fully change. Arsenal 2 is fully charged when the Amber Charging Status Indicator turns Off. Disconnected the Arsenal 2 from the charger when complete.
v. Note: Do not leave Arsenal 2 connected to the Charger for extended periods of time.
*Charger only provided in US models.

10. Important Handling Information

a. USB Ports and Button

i. Never force a plug into a port or apply excessive pressure to a button, because this may cause damage. If the plug and port don't join with reasonable ease, they probably don't match or the plug is backwards. Check for obstructions and make sure that the plug matches the port and that you have positioned the plug correctly in relation to the port.

b. Arsenal 2 Temperature

i. Arsenal 2 is designed to work in ambient temperatures between 32° and 95° F (0° and 35° C). Arsenal 2 can be damaged and battery life shortened if operated outside of these temperature ranges. Avoid exposing Arsenal 2 to dramatic changes in temperature or humidity.

ii. When using Arsenal 2 or charging the battery, it will get warm. You will notice that your device feels warmer in these situations:
   1. When you set up your device the first time
   2. Performing CPU/GPU intensive image processing tasks, such as Focus Stacking.
   3. Transferring a large number of photographs between your Camera and Arsenal 2.
   4. Transferring a large number of photographs between Arsenal 2 and your Phone.
   5. Charging the battery.

iii. These conditions are normal, and Arsenal 2 will return to a normal operating temperature when complete.

iv. If the interior temperature of Arsenal 2 exceeds the normal operating range, it will protect its internal components by attempting to regulate its temperature. If this happens, you might notice these changes:
   1. Image processing tasks take longer to complete.
   2. Transfer rates between your Camera and Arsenal 2 decrease.
   3. Transfer rates between Arsenal 2 and your phone decrease.
   4. Charging rate decreases.

v. The performance will automatically return to normal when Arsenal 2 returns to a normal operating temperature.

c. Storage

i. When not in use, Arsenal 2 should be stored in a place that ensures it is protected from moisture, excessive force, and extreme temperatures. Store Arsenal 2 where the temperature is between -4° and 113° F (-20° and 45° C). Arsenal 2 can be damaged and battery life shortened if stored outside of these temperature ranges. Do not leave Arsenal 2 in your car, because temperatures in parked cars can exceed this range.

d. Cleaning

i. From time to time, Arsenal 2 may require cleaning to remove dirt, grease, moisture, etc.

ii. To clean:

1. Power Arsenal 2 Off and disconnect all accessories.
2. Gently wipe the surface of Arsenal 2 using a soft, lint-free cloth moistened with a very small amount of water. Allow Arsenal 2 to dry completely before use.

e. Disposal

i. Dispose of your Arsenal 2 and accessories according to your local environmental laws and guidelines. Do not dispose of them in normal household waste. Improper disposal may result in fire, explosion, leakage, or other hazards. Do not open, crush, heat above 113° F (45° C), or incinerate.

11. Safety Warnings

To avoid damaging your Arsenal 2, and to reduce the risk of fire, burns, or electric shock, follow these precautions:

i. Handle your Arsenal 2 with care. You may damage your Arsenal 2 or its battery if you disassemble, drop, bend, burn, crush, or puncture it. Do not use a damaged Arsenal 2. Using a damaged Arsenal 2 may cause battery overheating or injury. Do not expose your Arsenal 2 to liquids, which can cause a short circuit and overheating. If your Arsenal 2 gets wet, do not attempt to dry it using an external heat source. Arsenal 2 is designed to work best in ambient temperatures between 32° and 95° F (0° and 35° C), and should be stored between ambient temperatures of -4° and 113° F (-20° and 45° C). Do not expose your Arsenal 2 to temperatures above 113° F (45° C) as this may damage the Arsenal 2, overheat the battery, or pose a risk of fire. Do not leave Arsenal 2 in your car, because temperatures in parked cars can exceed this range. Do not attempt to open and repair Arsenal 2.

ii. Be sure the charger and Arsenal 2 are well ventilated when in use or charging. Using damaged cables or chargers, or charging when moisture is present, can cause fire, electric shock, injury, or damage to the Arsenal 2 and property. When charging the Arsenal 2, make sure the charger is plugged into a socket near the Arsenal 2 and is easily accessible. Avoid charging your Arsenal 2 in direct sunlight. Arsenal 2 is intended for use with a certified Limited Power Source (LPS) per IEC 60950-1 rated: 5 Volts DC, maximum 3 Amp. Only charge your Arsenal 2 with the included charger and cable, or compatible charging accessories. Failure to use compatible charging accessories can cause fire, electric shock, injury, or damage to the Arsenal 2 and property. Disconnect Arsenal 2 from the charger when charging is complete. Do not leave Arsenal 2 connected to the charger for extended periods of time.

iii. Arsenal 2 contains a rechargeable lithium-ion battery which is a sensitive component that can cause injury if damaged. It is not user replaceable. Do not attempt to remove the battery. Do not attempt to replace the battery.

12. Troubleshooting Tips

Item #	Problem	Potential Solution
1	Arsenal 2 will not turn Off after a single button press.	1. Press and hold the Power Button until the Green Status Indicator on Arsenal 2 turns Off. This takes approximately 8 seconds.
2	Arsenal 2 will not turn On after a single button press.	1. Charge Arsenal 2 for two to three hours. Press and hold the Power Button until the Green Status Indicator on Arsenal 2 turns On. This takes approximately 1 second.

a. Contacting Support

i. If you're still having issues with Arsenal 2, please contact customer support at support@witharsenal.com.

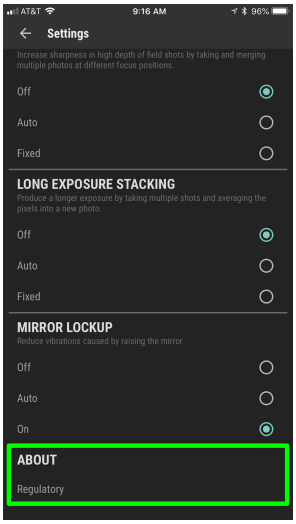
13. Regulatory Information Model - Taylor

a. Regulatory Screen in the Arsenal App

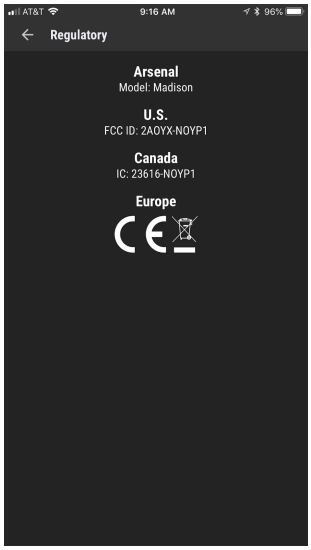
i. To find the regulatory information for Arsenal 2, please follow the instructions below:

1. Open the Arsenal App and select the Settings icon (gear):

2. Scroll to the bottom and select Regulatory:



3. The regulatory screen, similar to the following, will appear:



b. RF Transmitter

i. Maximum RF Transmitter Power

Standard	Frequency Band	Maximum RF Power
iEEE 802.11b	2.4GHz	18.80dBm
iEEE 802.11g	2.4GHz	20.12dBm
iEEE 802.11n	2.4GHz	20.54dBm
iEEE 802.11a	5.2GHz	11.89dBm
iEEE 802.11n	5.2GHz	11.62dBm
iEEE 802.11ac	5.2GHz	11.61dBm
iEEE 802.11a	5.8GHz	10.59dBm
iEEE 802.11n	5.8GHz	10.37dBm
iEEE 802.11ac	5.8GHz	10.56dBm
BLE	2.4GHz	4.46dBm

ii. Note: Due to regional restrictions, not all WiFi channels are available everywhere.

iii. This U-NII device ensures frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in this user's manual.

c. SAR

i. Specific Absorption Rate (SAR) is a measure of the rate at which a human body absorbs energy when exposed to a radio frequency (RF) electromagnetic field. The radio in Arsenal 2 is designed to not exceed the SAR limits adopted by the international regulatory agencies listed below when operated at a minimum distance of 0mm.

Standard	Measured	Limit
FCC	1.024W/kg	1.6W/kg
IC	1.024W/kg	1.6W/kg
CENELEC	0.343W/kg	2.0W/kg

d. FCC

i. FCC ID: 2AOYX-NOYP2

ii. 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.

iii. Any changes or modifications not expressly approved by North of You, LLC will void the user's authority to operate the equipment.

iv. 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:

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
4. Consult the dealer or an experienced radio/TV technician for help.

e. IC

i. IC: 23616-NOYP2

ii. This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

iii. L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement

économique 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;
2. L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

   Operation of this device is restricted to indoor use only.(5GWIFI)
   Le fonctionnement de cet appareil est limité à une utilisation en intérieur uniquement. (5GWIFI)

f. Europe

i. North of You, LLC declares under their sole responsibility that Arsenal 2, Model Number Taylor (marketing Name: Arsenal 2), is in conformity with the essential requirements and other relevant requirements of the following directives of the European Parliament and European Council; Directive 2014/30/EU, Directive 2014/35/EU, Directive 2014/53/EU, and Directive 2011/65/EU.

g. Australia