RECON Snow2 – USER MANUAL

Table of Contents

Welcome

Welcome to your Recon Snow2 Heads-up Display (HUD). Snow2 tracks your activity while you're on any mountain, whether skiing, snowboarding, etc. and delivers essential information like speed, altitude, navigation and more, direct-to-eye, in real-time.

The experience doesn't end on the hill. Access the Engage website and connect your HUD to review and relive your trips. Here you can track, compare and share socially what you've been up to during all your alpine adventures.
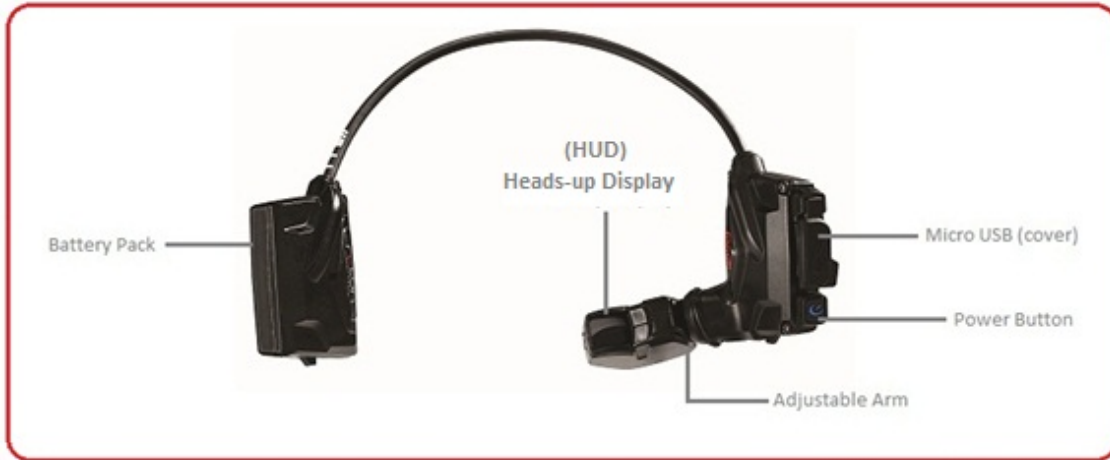
In the Box

The following items should be included in the box:

1. In-goggle Device
2. Remote
3. Remote Strap
4. Remote Strap
5. USB Cable
6. AC Adapter
7. Adapter (UK)
8. Adapter (EU)

Overview

Recon HUD

Remote

System Requirements

To use Snow2, you will need:
- Apple Mac OS X v10.6 or later, Microsoft Windows Vista, or Windows 7, or later.
- *Optional:* Android Smartphone Version 2.3.5 (or later) or Apple iPhone 4S (or later).

Setup

Get Started

You will need to activate your Recon HUD before you use it. To get started, use your computer's internet browser and go to engage.reconinstruments.com/getstarted

1. **Get Started**
   engage.reconinstruments.com/getstarted will guide you through the activation process of your Recon HUD. Download the Engage browser plugin, learn how to update firmware, create an Engage account, and hit the slopes!

2. **Customize Fit**

   - *Adjust the goggle Fit.*

     Adjust the strap sliders on your goggle's strap, so that goggle fits comfortably and securely.

   - *Turn on the Recon HUD by pushing the power button on the right-side of the goggle.*

   - *Adjust the Recon HUD orientation*

     With your fingers gently adjust the orientation of the Recon HUD until the screen is fully visible when you are comfortably wearing the goggle.

   - *Pick a Remote Strap and* activate the remote

     Choose your preferred remote strap (wrist or goggle) and snap-fit it onto the remote.

   Press any button on remote to turn it on.

3. **Engage**
   Keep track of your activity with the Engage website and the Recon Engage app. Check your trip history, compare your best all-time stats, track your buddies, and share your alpine experience with all your friends. Visit engage.reconinstruments.com for more info.
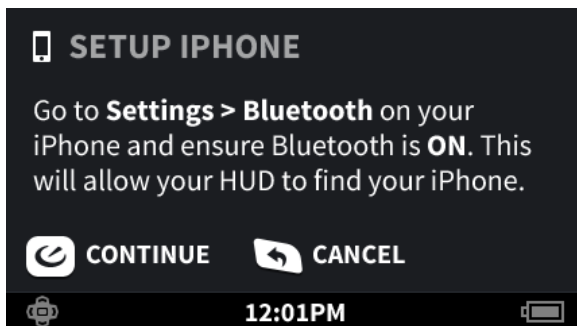
Connect to your Smartphone

To unlock additional features on your Recon HUD, download the Recon Engage app to your smartphone.

Connect your Android Smartphone
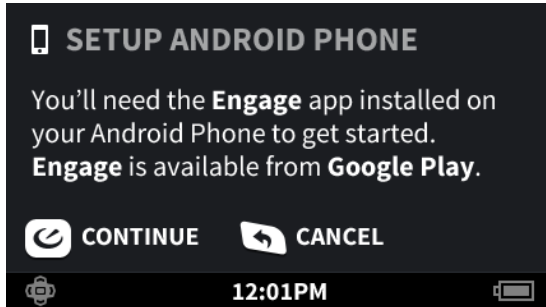
1. Download the free Recon Engage app from Google Play.

2. On your Recon HUD, go to **Settings > Smartphone Connection > Android**. Follow the onscreen instructions on your Recon HUD to begin set up.

3. On your Android smartphone, open Recon Engage app and select **Device Pairing**. Follow the instructions on Recon Engage app to complete setup.

Connect your iPhone 4S or Later

1. Download the free Recon Engage app for iPhone from the App Store.

2. On your Recon HUD, go to **Settings > Smartphone Connection > iPhone**. Follow the onscreen instructions on your Recon HUD to begin set up.

Recon Engage App

Recon Engage app (for Android and iOS) provides your Recon HUD with expanded functionality such as music control and buddy tracking. You can use Recon Engage app to see a list of your accomplishments and share them on your favorite social networks.
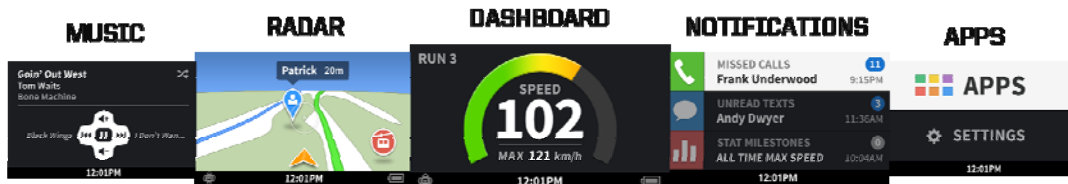
Engage Website

Engage website enables you to install apps to your Recon HUD in the Recon App Center, customize your **Dashboard**, and update firmware.

On the Recon HUD

Features

Your Recon HUD comes with 5 main display screens providing you with essential information as you take off down the mountain. Use your remote to navigate through each of the following screens.
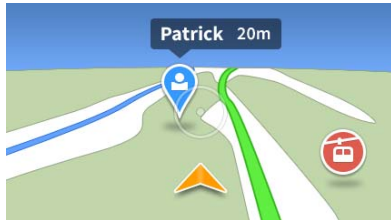
Dashboard

At the center of your Recon HUD sits the customizable **Dashboard**. This is your home screen and central point of reference displaying real-time information while you're on the slopes. The **Dashboard** comes with 3 preset screens with information including speed, altitude, vertical, and more, direct to your eye.

Radar

Built-in precision GPS makes **Radar** come to life giving you information on your current location, full 3D ski resort maps, and buddies in your area.
Navigation: When you're at the resort, find chair lifts, restaurants, and other points of interest near you.
Buddy Tracking: Find and track where your friends and family are on the hill so you can easily meet up.

Music
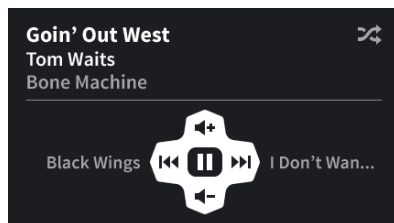
Control your favorite tracks by connecting your Recon HUD to your smartphone. Change songs and adjust volume using the remote while you carve through the snow – there is no need to take your phone out of your pocket again.

Notification Center
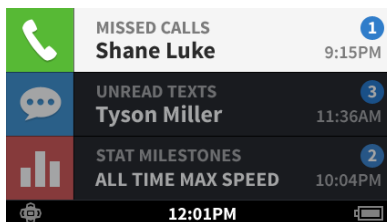
Notification Center automatically populates new achievements, incoming alerts, and much more so you can stay informed in one place while you're on the slopes.

Apps
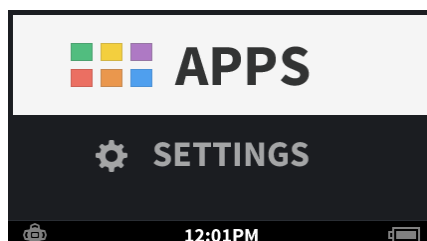
This is where you can personalize your Recon HUD. Start with Snow2's preset apps, like **Stopwatch**.

10

Stopwatch

04:26.34

LAP 3 03:53.17
LAP 2 01:48.35
LAP 1 05:15.22

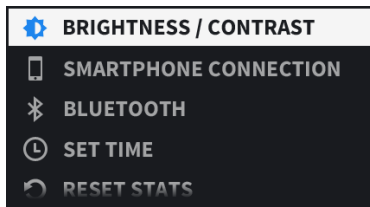START / STOP   LAP / RESET

Record and save timed activity with **Stopwatch**. Lap your runs and compete against the clock across selected distance markers or completed runs.

Settings

Adjust your settings for your Recon HUD.

BRIGHTNESS / CONTRAST
SMARTPHONE CONNECTION
BLUETOOTH
SET TIME
RESET STATS

- **Brightness** – Here you can alter the brightness of your HUD screen to the suit your current surroundings
- **Smartphone Connection** – Connect your Android or iPhone to access the advanced features on your Recon HUD
- **Bluetooth** – Enable Bluetooth to connect third-party devices to your HUD (ex: action sports cameras, heart rate monitors, etc)

- **Set Time** – Automatically or manually set the time on your HUD
- **Reset Stats** – Clear your stats from all previously recorded runs and start fresh
- **Set Units** – Choose Metric or Imperial units to measure and display your real-time stats
- **Software Update** - Manually assist in firmware updating your Recon HUD
- **Compass Calibration** – Calibration routine for the compass feature in **Radar**
- **About** – Find technical information specific to your HUD including serial number, firmware version and more
- **Help** – Find tutorial videos on how to interact with your Recon HUD
- **Advanced** – Clear space, uninstall apps, or perform a factory reset

11

Tips

Battery

A fully charged battery lasts from 5-6 hours even at temperatures down to -10°C / 14°F. Usage under temperatures equal to or below -20°C / -4°F will deplete the battery at a faster rate.

	Battery is fully charged
	Battery is nearly fully charged
	Battery is partially charged
	Battery is low
	Battery is extremely low
	Battery has no charge left
	Battery is charging using USB cable

To preserve battery life:

- Initiate power saving mode by turning off the display. Press the back button from the **Dashboard** screen. *Recon HUD will still record all your stats in this mode.*
- Power off your Recon HUD when not in use (at lunch or at the end of your trip).

Note: The battery performance of your Recon HUD will vary depending on the amount and / or activity of connected Bluetooth devices (ex: smartphone, action sports camera, heart rate monitor, etc.)

Shortcut to Music

Press and hold the **Select** button on your remote to access the **Music** screen from any of the 5 main display screens on your Recon HUD.

Compass Calibration
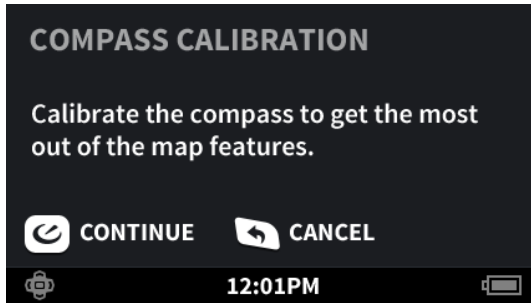
In order to navigate using the resort maps in **Radar** you will first need to calibrate the built-in compass.

The first time you use **Radar** there will be an automatic prompt with a step-by-step guide to calibrate.

To recalibrate the compass you can access the Compass calibration tool in **Settings**.

Status Bar

	Battery	Battery is fully charged
	Bluetooth	Bluetooth is enabled
	Smartphone	Smartphone is connected
	Remote Connected	Remote is paired and connected to Recon HUD
	Remote not Connected	Remote is not paired and not connected to Recon HUD
	GPS	GPS is searching for a signal
	USB	USB connected
12:45	Time	Current local time

Troubleshooting

GPS

GPS technology works best in open spaces with a clear view of the sky. Obstructions such as buildings and trees can degrade the GPS signal. Your Recon HUD will automatically acquire a GPS fix each time you use your Recon HUD.

	Searching for GPS	GPS signal will be flashing
	GPS Fix acquired	GPS arrow will replace the satellite

If you are having difficulty acquiring a GPS fix, this may be due to several varying factors:
- your device is used indoors
- your device is trying to acquire a GPS fix for the first time
- your device has not been used for an extended period of time

If you have difficulty acquiring a GPS fix try powering down the HUD and restarting it outdoors (away from obstruction if possible).

Factory Reset

A factory reset clears all data that your Recon HUD has recorded. It also unpairs the remote, clears your settings, uninstalls any third-party apps, and restores the device back to the default settings and original firmware the HUD was shipped with.

- To perform a factory reset, go to **Settings > Advanced > Factory Reset**
- If you are unable to access **Settings**, please read the instructions below to perform the manual factory reset procedure using the Recon HUD power button and remote.

Follow each step promptly to ensure reset is successful. If you miss any steps, please start again.

1. Power off your device before proceeding.
2. Open the micro USB cover to expose the LED charging light.
3. Press and hold the Recon HUD power button until the red LED charging light blinks.
4. Let go of the power button - the red LED will start to flash quickly.
5. While the red LED light is flashing, press and hold the Recon HUD power button for 3 seconds.
6. Let go of the power button - the red and blue LED lights will blink in unison.
7. Press the power button once to initiate the factory reset - a white box and an Android icon will appear on the display *(this may take 2-3 minutes to complete).*

Note: you will need to pair your remote with your HUD after the factory reset is complete.

Remote Pairing

Your remote automatically comes paired with your Recon HUD, but if you perform a factory reset or happen to lose your remote and purchase a new one, you will be required to pair your remote to your HUD again.

To unpair your remote, simultaneously press and hold the **Left** and **Right** buttons on your remote un you see the LED Indicator on your remote flash amber. Your Recon HUD status bar will have the **remote not connected** icon

Pairing your Remote to your HUD
Note the ID number on the back of the remote printed on a white label.
1. Power off your Recon HUD and power it on again.
2. Press any button on the remote and wait for a prompt on your Recon HUD to select one or more remote ID numbers.
3. Use the Recon HUD power button to scroll to the ID number that corresponds to your remote. A countdown will begin - wait for the counter to reach "0" on your Recon HUD screen.
4. Now check if the remote is paired:

    1. You will see the remote connected icon   on the left of the status bar
    2. Press any button on your remote and you will see the remote LED Indicator flash blue

Maintenance

Storing your device (off-season)

Your Recon HUD requires a full charge before storing it for an extended period of time. We recommend you charge your device once every 2-3 months during the off-season.

Charging

To charge your device using a PC or MAC:

1. Turn on your computer and power off your device (ensure you computer is not in stand-by mode)
2. First connect the micro USB cable to your device then plug the USB cable into the USB port on your computer.
3. Check that a red LED light above the USB port appears - this shows that your device is charging.
4. Keep charging until the red LED light turns off - this indicates your device is fully charged.
5. If your computer does not recognize your device, try reinserting the USB cable.

To charge your device using an AC adapter:

1. Power off your device. Connect the micro USB cable to Recon HUD then plug the USB cable into the AC adapter shipped with your unit. Plug the AC adapter into a wall outlet.
2. Check that a red LED light above the micro USB port appears - this shows that your device is charging.
3. Keep charging until the red LED light turns off - this indicates your device is fully charged.

Note: In optimal conditions, your Recon HUD can achieve a fast charge (80% of battery) using your computer or AC adapter in 1 hour. Your Recon HUD can be fully charged after a recommended 4 hour period.

Firmware Updates

Visit engage.reconinstruments.com to download the browser plugin and update your firmware.

Technical Specifications

Technical Specifications

Processing	TI OMAP 4 dual-core ARM® Cortex™ A9 1.0 GHz
Platform	ReconOS
Capacity / Memory	2 GB Flash
RAM	1 GB DDR2 SDRAM

Mechanical Specifications

Weight of the Unit	~65Grams (~2.3oz)
Storage Temperature Range	-20°C to 60°C (-4°F to 140°F)
Operating Temperature Range	-20°C to 30°C (-4°F to 86°F)
Vibration Resistance	4.4 g rms 5 Hz to 2000 Hz
Shock / Drop Resistance	40 g, 15-23 ms, ½ Sine (1m vertical drop)
Enclosure	Water Resistant Enclosure, IP65

Sensor Technology

Global Positioning System (GPS) Receiver
3-Axis Accelerometer
3-Axis Gyroscope
3-Axis Magnetometer
Temperature Sensor
Barometric Pressure Sensor

Display & Virtual Image

Display resolution	WQVGA - 428 x 240
Display Type	LCD Micro Display
Virtual Image Size	Virtual 14" image at 5ft away
Max Horizontal – Field of View (FOV)	8° Vertical FOV: 6°Horizontal FOV
Diagonal	FOV 10°
Color Depth	High Color 16-bit (5:6:5)
Brightness & Contrast Control	Adjustable

RF & Antenna

Global Positioning System (GPS) Receiver	65-Channel Ultra Low Power GPS IC
	Cold start of 2-5 minutes in typical outdoor environment

Wi-Fi™ (IEEE802.11b/g/n)

Bluetooth®

Bluetooth® 4.0
Recon Instruments (object push) for file transfer
Serial Port Profile (SPP)
Video Distribution Profile (VDP)
BLE, Wireless User Interface Remote Control

Power Requirements

Primary Supply Voltage	3.7 Lithium Polymer Rechargeable Battery
Charge Time	1 hour fast charge = 80% capacity, 4 hours = fully charged
Battery Size & Life	1200 mAh = up to 6 Hours

Connectivity

USB/Micro-USB 2.0 (5-pin) port

System Requirements

Windows PC	Intel Pentium 4 or higher, Windows Vista, 7 or higher
Mac	Intel Core Duo or higher, Mac OS X v10.6 or later

Recon Engage App System Requirements

Android	2.3.5 or higher (optimal performance is device dependant)
iOS	6.0 or higher with iPhone 4S, 5 or higher

Support

For service and support, tutorials, and FAQs, go to: http://reconinstruments.desk.com

Warranty

http://reconinstruments.desk.com/customer/portal/articles/520749-warranty

Battery Disposal Information

http://reconinstruments.desk.com/customer/portal/articles/843025

Compliance Information

FCC Compliance Class B Digital Device

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.

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

FCC Declaration of Conformity

Snow2 (FCC ID: ZW5008) and Recon-Ready Remote (ZW5001) comply with FCC standard CRF 47 Part 15 subpart B and subpart C – section 15.249. Operation is subject to the following two conditions:

• This device may not cause harmful interference, and

• This device must accept any interference received, including interference that may cause undesired operation.

Industry Canada Compliance

Snow2 and Recon-Ready Remote were certified with IC numbers 9717A-008 and 9717A-001, respectively. These devices comply 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.

Cet appareil est conforme avec les normes de l'Industrie Canada-sans les standards RSS (s). L'utilisation est soumise aux deux conditionssuivantes: (1) cet appareil ne peut pas provoquer d'interférences et (2) cet appareil doit accepter toute interférence, y compris les interférences qui peuvent causer un mauvais fonctionnement de l'appareil.