

 CATAPULT VECTOR

# USER GUIDE



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# HARDWARE

## VECTOR DEVICE

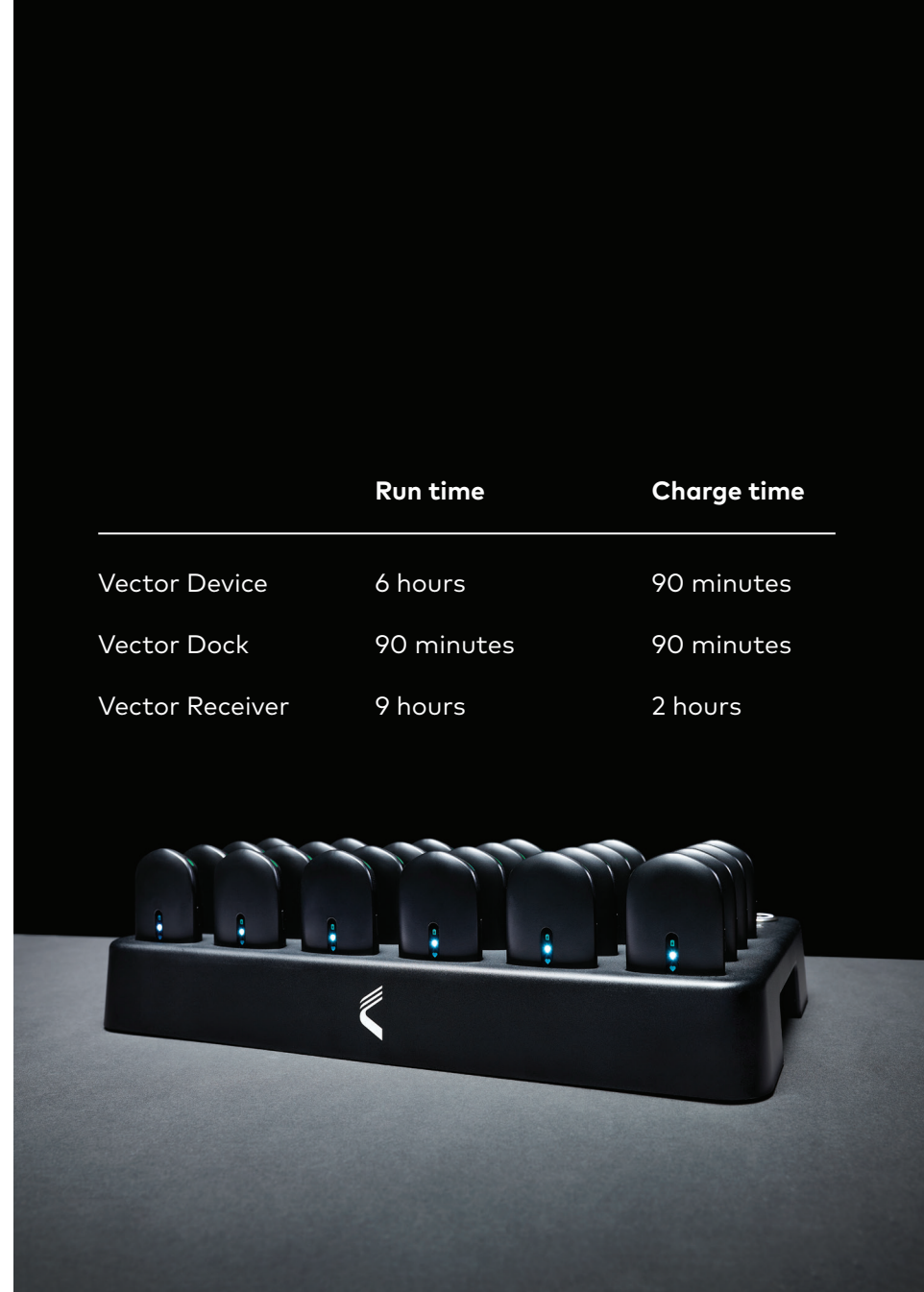
Catapult Vector is an elite athlete tracking device. It has the capability of capturing global (GPS) and local (LPS) positioning information, inertial and heart rate data. It has the ability to transmit summary data live to coaches, and store and download data for detailed post session analysis.

## VECTOR DOCK

The Vector Dock is used to charge and download devices. The onboard battery enables the full functionality when pitch side or travelling. The Vector Dock 'Ignition' button commands all the devices on or off with one simple action.

## VECTOR RECEIVER

The Vector Receiver is the hub for live data capture. In addition to a standalone receiver, Vector can be used with a multiple receiver setup for total field coverage and an improved live experience. The Vector Receiver has Wireless (WiFi) and wired (USB) connectivity, with the ability create a local WiFi network to stream live athlete data to mobile devices.



	Run time	Charge time
Vector Device	6 hours	90 minutes
Vector Dock	90 minutes	90 minutes
Vector Receiver	9 hours	2 hours

# SOFTWARE & APPS

## OPENFIELD CLOUD & CONSOLE

OpenField Console is Catapult's Windows software platform

### Key functions

- Collect live athlete data
- Download & manage Vector devices
- Prepare athlete data - manage drills, player participation etc.
- Analyse high frequency athlete data, including velocity & heart rate traces

OpenField Cloud is the Catapult web platform

### Key functions

- Analyse session data & generate reports
- Analyse longitudinal data & individual athlete data
- Plan training sessions
- Perform advanced analysis
- Export summary data



# SOFTWARE & APPS

## VECTOR IPAD APP

The Vector iPad app captures live athlete data direct from the Vector Receiver via WiFi, enabling access to live data for the entire team without a computer. Vector for iPad can be downloaded from the App store.

## VECTOR SMARTPHONE APP

The Vector Smartphone App captures live athlete information directly from the Vector Device using Bluetooth connectivity. The app was developed to track small groups at short range, and has been optimised for field based rehab and conditioning. The Vector Smartphone App is available now from the iOS and Android app stores.

## VECTOR APPLE WATCH APP

The Vector watch app is a companion to the Vector Smartphone app. It uses Bluetooth communications and has been optimised for single athlete use. Designed to provide immediate feedback on key session stats.



# VECTOR DEVICE

## FUNCTIONS

- Power ON & OFF - Press & hold power button for 2 & 5 seconds respectively
- Sensors - GPS, LPS, Inertial & Heart Rate
- Wireless Communications - Ultra Wideband and Bluetooth
- Direct Heart Rate Integration - via studs on rear of device (excl. X7)

## INDICATORS

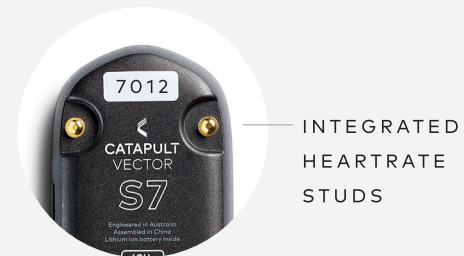
- Flashing Indicators - Searching - GPS, Heart Rate, Wireless, Bluetooth
- Solid Indicators - Recording or Connected - GPS, Heart Rate, Wireless, Bluetooth

### Battery Status

- Solid White - Power on and > 2 hours charge
- Solid Red - Power on and < 2 hours charge
- Flashing Red - Low power < 40 mins charge



REVERSE  
SIDE



# VECTOR DEVICE



## USING THE VECTOR DEVICE

- Ensure Vector devices are charged prior to use
- Place all Vector Devices in Vector Dock and press the dock Ignition button to turn devices on
- The GPS indicator on the device will illuminate white indicating ready to use
- Remove devices from the dock, devices will auto power-up and begin recording
- Insert Vector Device into the Vector garment pocket, in the correct orientation
- Check device indicators are solid to ensure data is recording





# VECTOR DOCK

## FUNCTIONS

- Power On/Off - Press power button.  
Light indicates status
- Device Ignition - Devices can be turned on & off by the Dock when they are connected
- Download Devices - Dock must be turned on, devices connected and USB cable connected to computer
- Charge Dock & Devices - Connect dock to the mains power supply, full charge of dock and devices is 90 minutes.
- Portability - The dock's on-board battery enables data download and device ignition without mains power







# VECTOR DOCK

## DEVICE IGNITION & DOCK BEHAVIOUR

- The Vector Dock is designed to improve efficiency of use in the field
- Turning the dock on with devices connected enables device ignition mode
- Device data download is enabled in Ignition mode
- Devices will start recording when removed from the dock
- When devices are re-connected to the dock, they will stop recording and return to Ignition mode
- Device data download is enabled in Ignition mode
- When dock is turned off, devices will also turn off
- Dock will shutdown automatically after a period of inactivity to conserve battery power
- Full dock functionality can be used on mains or battery power

## INDICATORS

### Power Status

- On Battery Power - Green > 30min remaining, Red - Low power < 30min remaining
- On Mains Power - Red - Charging, Green - Fully Charged

### Data Connection

- Green (slow flash) - Dock connected to PC and communicating
- Green (fast flash) - Dock connected to PC and transferring data



1. ETHERNET
2. USB
3. POWER INPUT
4. POWER BUTTON
5. BATTERY
6. NETWORK



# VECTOR RECEIVER



## FUNCTIONS

- Power On/Off - Press and hold power button
- Portability - The Receiver's onboard battery enables use in the field for up to 9 hours
- Charge - Charge Receiver using the USB-C cable provided and 2 amp wall plug. Full charge takes ~90 minutes
- Connectivity - Wireless and wired connections can be used
- Device Data Capture - Vector Receiver uses Ultra Wideband frequencies for device data capture
- Single & Multiple Receiver Systems - Greater field coverage for live streaming





# VECTOR RECEIVER

## CONNECTING TO THE VECTOR RECEIVER SINGLE RECEIVER SETUP

### Wired Connection

- Connect USB C cable into Vector Receiver port and connect to the PC
- Power on Receiver and wait for startup
- You are now ready to start your OpenField live session

### Wireless Connection

- Power on Vector Receiver and wait for network Indicator to show solid blue
- Find the Vector Receiver device ID in your WiFi network list
- Connect and enter the network key (located on the rear of the Receiver)
- You are now ready to start your OpenField session, or connect Vector iPad App
- For more information on tracking a live session, see Vector Live section

- Vector Receiver should be mounted on the tripod at maximum height
- Vector Receiver should be positioned on the side of the field, facing the athletes
- Vector Receiver requires direct line of sight to the device to collect instantaneous athlete data, data not immediately received will be updated when athlete is back in range
- If using a wireless (WiFi) connection, set up the receiver no more than 60m from the OpenField computer or mobile application to maximise data quality
- Wireless range may vary based on computer, local networks and interference



1. BATTERY
2. NETWORK
3. POWER
4. USBC PORT



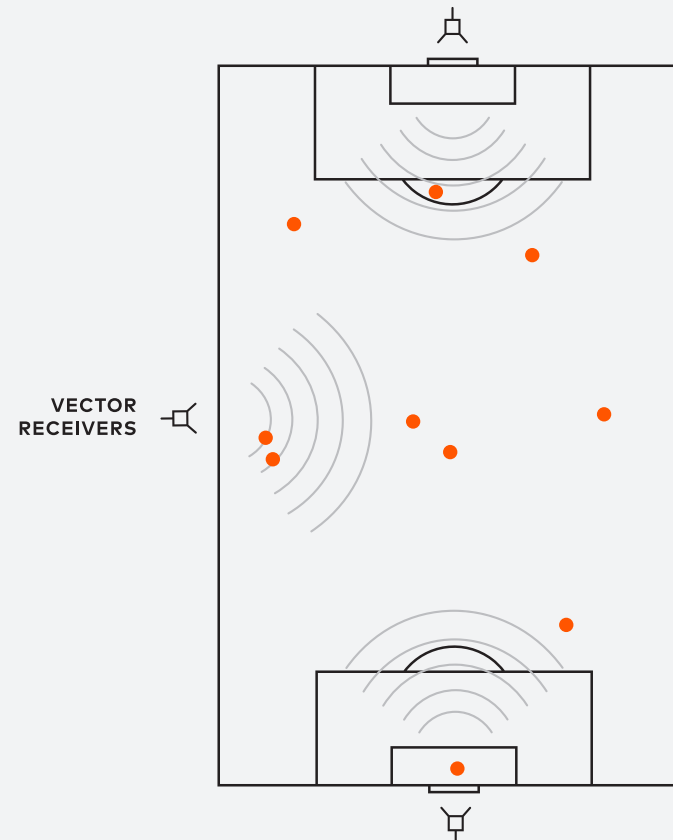
# VECTOR RECEIVER

## MULTI-RECEIVER SYSTEMS

- The Vector system can use multiple receivers to improve field coverage for live tracking. This improves live data quality
- Multiple Receiver systems are configured as Primary and Secondary receivers to communicate wirelessly
- The Primary receiver is connected to your OpenField PC (as per single receiver setup)
- Secondary receivers will communicate with the Primary to relay data back to the OpenField computer
- Vector Receivers are positioned strategically around the field of play to maximise field coverage and line of sight to the devices

### TIP:

For the most mobile full team tracking solution, use the Vector iPad app with the Vector Receiver. Available for use with both single or multi receiver setups



# INSTALLATION & SETUP

## STEP 1

### *Installing OpenField / OpenField Start-Up Wizard*

1. Upon creation of an OpenField account, you will receive a welcome email with a link to the Openfield Setup Wizard. This will guide you through the initial steps to set up an OpenField account
2. Once initial setup is complete the OpenField desktop software will auto download. Run this installer and follow the setup wizard to complete the install
3. Open the OpenField desktop software and enter your password. OpenField will perform an initial synchronisation with OpenField cloud, and once complete you are ready to begin using Vector

#### **TIP:**

OpenField comes with recommended settings relevant to the chosen sport. To customize visit the 'settings' section of OpenField cloud. Make sure to use the 'fast sync' function in the OpenField console after customizing settings.

*For more information please visit the cloud help section.*





# INSTALLATION & SETUP

## STEP 2

### Assigning devices to players

Assigning (mapping) Vector Devices to athletes is important to ensure you can live track and post download Vector sessions. You will find a unique device ID number on the back of each Vector Device that will be entered into the OpenField desktop software.

1. Start OpenField and log in
2. Press the start tile from the home screen followed by the settings button at the top of the window
3. From the mapping window, you can manually assign a Vector Device ID to each athlete
4. Once complete you will be prompted to connect the Vector Devices to OpenField to complete the mapping process

### TIP:

If you connect the Vector devices to OpenField before mapping for the first time, you can auto-assign device ID's to athletes. Press the 'auto assign' button in the mapping screen when 'unmapped devices' are displayed.

*For more information on installation and setup please visit the cloud help section.*

## STEP 3

### Connect your Vector devices to OpenField

Once device mapping is complete and before the first live Vector session, connect your devices to OpenField to complete device setup and configuration.

- Insert Vector Devices into Vector Dock
- Turn dock on by pressing dock Ignition button
- Connect the Vector Dock to OpenField PC via the USB cable provided

The Vector Devices will automatically update with their assigned athlete settings and device encryption.

*Please allow 30 seconds for the process to complete.*

*You are now ready to start monitoring live with Vector.*





# VECTOR RUNNING A LIVE SESSION

## STEP 1 - VECTOR DEVICE

Before running a live session, ensure you have charged your Vector Devices, Dock and Receiver.

1. Turn on Vector Devices and wait for the GPS indicator to change from flashing to solid green (GPS lock)
2. Insert GPS locked devices into the Vector garment. Clip the Device into the garment via the press studs to enable integrated Heart Rate collection\*

*Integrated HR is for S7/G7 and Elite garment only*

## STEP 2 - CREATE NEW ACTIVITY

1. Start OpenField console and click the **Start** button
2. Right click the timeline and select **New Activity**
3. Name the Activity, choose the activity type and **Day Code**
4. Click the **Create Activity** button to start activity

## STEP 3 - VECTOR RECEIVER

1. Power on the Vector Receiver and connect to OpenField
2. Click the **Live Play button** to start data collection. Connected devices will appear in the **Active Players** list

## STEP 4 - MANAGE PERIODS

1. Select the athletes to add to the period from the **Active Players** list
2. Click the **+Period** to create the period
3. A new period will start on the OpenField timeline
4. Rename periods by double clicking on them
5. To stop live periods, press the **⊘** button below the timeline. This will stop data updating in the dashboard widgets

*Repeat 1 & 2 to create additional periods*

## STEP 5 - ENDING ACTIVITY

1. Stop all live periods by pressing the **⊘** button
2. Click the **Live Pause Button** button
3. Right click the activity bar and press **Close Activity**

You can now power down your Vector Receiver

*\*For advanced workflows, please see the help section of the OpenField cloud*

### TIPS:

1. Vector Devices will show a solid amber wireless indicator when they have successful connection to the Vector Receiver
2. You can run multiple periods concurrently to capture players in different drills simultaneously. Repeat step 4 [1-3] selecting the different players for each new drill

# VECTOR DOWNLOAD POST SESSION

Once the session is complete, download the Vector data to the OpenField computer

1. Return the Vector devices to the Vector Dock and power on the dock
2. Connect the Vector Dock to your OpenField PC using the USB cable provided
3. From the OpenField home screen, click the **Data Transfer** tile. The transfer window will open and your new Vector sessions will begin to download
4. Once all activities have downloaded, click the **Stop Transfer** button.
5. Your Vector activity is now available to select and view from the **Activities** calendar of the OpenField start screen.
6. From the home screen, click the **Fast Sync** button to send your activity data to the cloud for analysis

**TIP:**

OpenField automatically recognises when a session has been previously downloaded .

To download these files again, find them in the active activities window of the data transfer screen, right click and select 're-download'.







# VECTOR IPAD

The Vector iPad app enables live athlete data to be streamed directly to iPad (iOS 12.1 or higher), using a Vector Receiver only, and completely untethered from your OpenField PC.

It also enables the review, export and cloud sync of activity data, enabling you to go from field to report in seconds.

## FUNCTIONS

- Create activities
- View and manage athlete data in real time
- Create and manage periods
- Review and export post activity data
- Synchronize activities, periods and data to OpenField cloud for analysis
- Optimized for outdoor use in a range of lighting conditions

### TIP:

You can start your Vector iPad activity before your players hit the field. Any athletes not active and displayed before starting the activity will be added to the active players list when they are in range.

## GET STARTED

- Download the Vector iPad app from the app store
- Login with OpenField credentials
- Turn on Vector Receiver and connect the iPad via WiFi
- Ensure Vector Devices are in range of the receiver
- Press Start activity
- Name the Activity and press start
- Press the + period button in the control bar to start recording
- Press the + icon to select athletes to add to the period

*See in app help for full Vector iPad user guide*





# VECTOR MOBILE

## Vector Smartphone app

This app uses bluetooth to capture data and is optimized for tracking small groups at short range. The Vector smartphone app is available now for iOS and Android.

### FUNCTIONS

- Map athletes and select parameter bands
- Set live targets for key parameters
- View group and individual athlete data
- Create and manage activities and periods
- Sync activity data to OpenField
- Turn off Vector Devices

### GET STARTED

- Download Catapult Vector app for iOS or Android
- Ensure Bluetooth is enabled on the Vector devices, Bluetooth icon will flash on device
- Login to Vector App with OpenField credentials
- In app, search and connect to available devices
- Start Activity with selected number of devices
- View group or individual athlete data in the app data tab

## Vector Smartwatch app

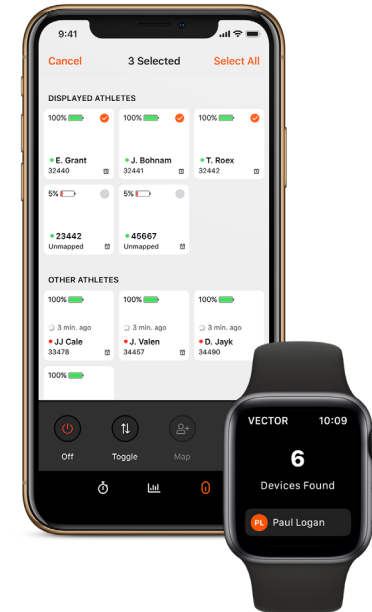
This is a companion to the Vector Smartphone app. It uses bluetooth technology and has been optimised for single athlete use.

### FUNCTIONS

- View single athlete live data from watch face
- Turn off Vector device

### GETTING STARTED

- Ensure Smartphone app is downloaded to your iOS device
- Ensure bluetooth is enabled on Vector Devices
- Log in to the Vector Smartphone app using your OpenField credentials before opening the Vector watch app. The Vector watch app syncs and shares settings with the Vector Smartphone application.
- On the watch app home screen press 'find devices' and select the correct player name or device ID
- Once connected swipe left or right on the watch face to change parameter



#### TIP:

The Vector Mobile suite of apps share a common device connectivity notification system.

- Currently visible to the app.
- Device has not been seen for > 30 seconds
- Device has not been seen for > 60 seconds.



# DEVICE SPECS

## VECTOR DEVICE

<b>DIMENSIONS</b>	81mm x 43mm x 16mm
<b>VOLUME</b>	48cm <sup>3</sup>
<b>WEIGHT</b>	53g
<b>BATTERY</b>	6 hours
<b>GLOBAL POSITIONING</b>	10Hz GPS, GLONASS & SBAS (or 18Hz GPS)
<b>LOCAL POSITIONING</b>	10Hz Catapult ClearSky
<b>WIRELESS COMMUNICATION</b>	Ultra-wideband & Bluetooth 5
<b>WIRELESS RANGE</b>	Up to 300m (UWB)
<b>CAPACITY</b>	100 athletes
<b>HEART RATE</b>	ECG Derived (Vector S7, G7) & Polar 5.5kHz Compatible (all models)
<b>ACCELEROMETER</b>	3D +/- 16G, Sampled at 1kHz, Provided at 100Hz
<b>GYROSCOPE</b>	3D 2000 degrees/second @ 100Hz
<b>MAGNETOMETER</b>	3D ±4900 µT @100Hz

## VECTOR DOCK

<b>NUMBER OF DEVICES</b>	24
<b>BATTERY LIFE</b>	90 minutes

## VECTOR RECEIVER

<b>WIFI</b>	2.4 + 5 GHz
<b>WIRELESS DATA</b>	Ultra-wide Band
<b>BATTERY LIFE</b>	9 hours



# GARMENT SIZING

## CARE INSTRUCTIONS

- Cold machine wash with similar colours
- Wash inside out
- Do not tumble dry
- Cool iron
- Do not iron on print
- Do not bleach
- Do not dry clean



## MEASUREMENT POINT DETAILS

MEASUREMENT POINT DESCRIPTION	XXS	XS	S	M	L	XL	2XL	3XL
1. CHEST (MEASUREMENTS IN CM)	61	66	71	76	81	86	91	96
1. CHEST (MEASUREMENTS IN INCH)	24	26	28	30	32	34	36	38



**PLAY SMART**