Garmin Forerunner 620 Review

The Garmin Forerunner 620 was recently released in December and is Garmin's newest and most advanced running GPS watch. This review will explore the new features in the 620 and how it compares to the previous model the Garmin Forerunner 610.

Size, Weight, & Usage

- The Garmin FR620 has the same screen display size as the previous model the 610 a 1 " (2.54 cm) diameter display screen.

- The 620 is very lightweight at 44g and significantly less than the 610 weighing 75g. This new model feels significantly lighter on the wrist.

- The 620 is less bulky overall with a smaller back and more flexible normal watch band attachment to the face of the watch.

- The 620 is now waterproof up to 50 meters (150ft). The watch is fine to wear while swimming although it won't capture any metrics.

First picture: comparison of the Garmin 610 (left) and 620 (right). Second Picture: 620 on left and 610 on the right.
What’s New in the Forerunner 620:

**GPS Reception**

A familiar site among runners at the start of a race or any run is someone standing outside holding their arm up in front of them waiting for the watch to acquire a GPS signal. This 1-2 minute ritual will be a thing of the past with the Garmin 620. The FR620 automatically caches the satellite locations for the last week, which means that it can find satellites much faster than before. This location caching is updated via WiFi and Bluetooth Smart each time you connect the FR620. The satellite lock now takes less than 20 seconds on the FR620.

**Adjustable Power Save Mode**

One cool new feature on the FR620 is the ability to change how long until the unit falls asleep. Previously, it would fall asleep after 5 minutes if you weren't actively recording an activity or hadn't touched the screen. This meant waiting at the start line of a race, the watch could fall asleep on you. Now you can change to "Extended" mode, which will change the sleep mode to a 25 minute delay.

**Run/Walk Countdown Timer Screens**

Runners who follow the Jeff Galloway run/walk/run training program or other fans of run/walk interval training will appreciate the ability to review remaining time on your current interval with the new countdown run and walk interval timer screens on the FR620.
Running Dynamics Metrics (with new HRM-Run heart rate strap)

The FR620, if purchased with the new HRM-Run heart rate strap, provides three new "Running Dynamics" metrics which focus primarily on running efficiency areas. These new metrics are generated by an accelerometer in the new HRM-Run heart rate monitor.

**Vertical Oscillation:** This is simply how much you (specifically, your chest) goes up and down during each footstep. This defines how much vertical movement you generate measured in centimeters. The less vertical oscillation the better, as it means in theory you're spending less energy pushing your body up and down vertically (energy which could be used to move your body forward).

**Ground Contact Time:** This metric measures how long each footstep spends on the ground, measured in milliseconds. Remember that 1,000ms = 1 second. Typically the less time you spend on the ground the faster your cadence. Elite runners usually have a fairly fast cadence, you'll see this number fluctuate directly with that of cadence, which with most people tends to correlate with speed.

**Cadence:** This is not a new metric, especially if you've used a footpod before, now Garmin has decided to make you aware of it in "Running Dynamics". This measures how many steps per minute you take, or how many times per minute your feet touch the ground. Traditionally, this has always been measured in Garmin products for just a single foot (i.e. 90SPM). However, in the FR620 cadence is now shown as both feet (i.e. 180SPM). Studies of elite runners have shown that a foot cadence of around 180SPM is considered ideal for "mid-foot" or "chi" running form.

Garmin produced a YouTube video which does a good job of explaining these new "Running Dynamics". [http://www.youtube.com/watch?v=kNCnKpLUoAw](http://www.youtube.com/watch?v=kNCnKpLUoAw)

Garmin provides a good chart in the manual that helps you figure out whether or not your results are good, which they label with colors.
How is this information displayed for you? When you are running you can choose to enable a new display screen called, "Running Dynamics". If you are wearing the new HRM-Run heart strap the screen looks like a small car dashboard with these three metrics. You can choose in the settings which of the three metrics will be the larger displayed metric on the screen. These metrics can also be added to any of your other customize-able date pages/screens.

**VO2Max, Recovery Check, Recovery Advisor, and Race Predictor Functionality**

**VO2Max**: This is a number that defines your body's maximum ability to transport and utilize oxygen during exercise. Many consider it a way to identify elite athletes or a measure of cardiovascular fitness and maximal aerobic power. This number is interesting, but there is little one can do to change it beyond initial fitness as much of this is genetic and not trained but some improvement is possible with overall fitness improvement. Garmin is using data from the heart rate strap and algorithms from FirstBeat Technologies to calculate this ballpark VO2Max number which is closely equivalent to a full VO2Max test on a treadmill. This data is tracked on the watch after 10 minutes of a run and at the end of the run via a display screen. This data is also tracked in Garmin Connect on a chart with a color coding indicator. The higher the VO2Max number the better in this metric.

**Race Predictor Times**: This VO2Max information is used by Garmin to calculate predicted race times. These times are based on a simple lookup table against your current VO2Max and age/gender. This does not take into account the length of your training runs only looking at your aerobic capacity and provides your ideal potential best personal record (PR) time for various distances from 5K, 10K, Half, and Marathon. This data is displayed on a screen on the FR620 as well.

**Recovery Check**: is designed to assess your recovery level after the first 6 minutes of the run and will display a message such as: Good or Fair.

**Recovery Advisor**: is a post-run message that tells you how long you should wait before attempting another hard run workout. This is measured in hours and does count down with the clock. The goal with Recovery Advisor is to reduce injuries to schedule workouts with enough rest between hard running workouts. Both Recovery Check and Recovery Advisor data is based on heart rate data and VO2Max data.

Here is a web link to a good video created by Garmin that explains VO2Max and the Recovery Advisor in more detail:  [http://www.youtube.com/watch?v=eAN2JKpDL60](http://www.youtube.com/watch?v=eAN2JKpDL60)
Recovery Advisor and Race Predictor screens shown here

**Internal Accelerometer and Treadmill Running**

The Garmin FR620 now includes an internal accelerometer in the watch that allows the unit to measure both pace and cadence without the need for an external footpod as most watches previously required. This internal accelerometer is automatically configured while running outdoors with the GPS enabled (there's no additional manual configuration). This is a nice feature when you are running indoors on a treadmill and want to obtain pace and cadence information. This internal accelerometer is built in the FR620 watch face and does not require the HRM-Run heart rate strap for calculation.

**Internal watch cadence and pace accuracy on treadmills - my experience**

In my testing I found this internal watch accelerometer information was only accurate for me when I was running faster or ensuring my arm swing was closely in-line with my foot pace. Perhaps it is just me, but I didn't find the internal accelerometer all that accurate for my run pace and run/walk style.

**Use of the Garmin Footpod or HRM-Run heart rate strap with the FR620**

I will continue to use the Garmin footpod with the FR620 on my inside treadmill runs as I believe it most accurately measures my pace and foot cadence as it is truly measuring movement of my feet and not arm swing. The HRM-Run accelerometer heart rate strap also measures foot cadence accurately in my tests and does correspond with the Garmin footpod and was much more accurate for me than the built in watch accelerometer measuring arm swing. The HRM-Run heart rate strap does not measure pace though. If you have a Garmin footpod and want a very accurate measurement of your cadence and pace on treadmills I recommend keeping the footpod and pairing it with the FR620 for indoor treadmill runs.

**Live Tracking and Mobile Phone Upload Functionality**

**Live Tracking:** The Garmin FR620 has the ability to connect via Bluetooth Smart to your mobile phone and upload workouts immediately upon completion, as well as to provide streaming live tracking of your run to family and friends. You can share the link for live tracking automatically via e-mail or social networking sites like Twitter and Facebook. Garmin provides a web link where people can follow your run real time via a website if you have the Garmin Connect Mobile app and have paired your FR620 with your smart phone. This is a nice new feature that is available at no charge with the FR620 (other companies like RunKeeper offer this live tracking feature via their mobile phone applications but at a monthly or annual subscription fee).

**Mobile Phone Upload Functionality:** Whether or not you choose to enable live tracking during a run, you can transfer the data from your run after you're finished via mobile phone upload to Garmin Connect through the Garmin Connect Mobile app on the smart phone. Once again you need to pair your FR620 with your smart phone in the Garmin Connect Mobile application on the smart phone. This is convenient for uploading your run data right after a run while at breakfast, a coffee shop, or race finish line without having to wait for an upload at home via a computer.
Testing results of Live Tracking and Mobile Phone Uploads

I paired my Garmin FR620 with my Verizon iPhone 5 smart phone via the Garmin Connect mobile application and was able to use live tracking quite successfully on runs as long as I had a wireless cellular signal. The watch would occasionally drop and reconnect via Bluetooth with my iPhone 5 throughout the run but it did not affect overall live tracking.

I did have more difficulty uploading run data with the mobile phone upload feature post run. I found the watch would connect with the smart phone application and then stall during the connection transfer at times using either the Verizon cellular data connection or a restaurant’s Wi-Fi signal. I was able to get the mobile phone upload feature working most times. Sometimes this required restarting the watch or iPhone or just trying a few times. I was much more successful with the mobile phone run upload via Wi-Fi versus cellular data connection. This may be a reflection of my wireless data connection strength and this being a new feature in the Garmin watch. I expect it will improve as Garmin releases future watch software updates over the coming months.

Currently, the live-tracking and mobile phone upload features only work on Apple’s iOS iPhone operating system. Garmin plans to add support for Android phones in the near future.

Wi-Fi Connectivity Functionality

The FR620 is the first Garmin fitness watch to include the ability to transmit data via Wi-Fi connection. You can upload completed activities, firmware updates, as well as download training plans and custom workouts via Wi-Fi with the Garmin Express Fit app loaded on your Windows or Mac computer.

The Garmin FR620 can be set up to recognize preferred wireless Wi-Fi networks. When you return after a workout and are in range of one of your preferred Wi-Fi networks the FR620 can automatically upload your workout to Garmin Connect. This automatic feature is only on for a short time after a workout ends to avoid battery drain. You can transfer your workout via Wi-Fi when you return home by pressing the Connect button on the watch anywhere within wireless range and your workout will transfer.

This feature works perfectly for me to transfer workouts to Garmin Connect whenever I return home.

The FR620 can also be connected to a computer via the USB charging cradle cable as well. The computer now recognizes the FR620 watch as any other USB storage device so you can also easily copy run activities to your computer via USB as well. The USB wireless dongle and ANT+ wireless connection and associated issues of previous Garmin models is gone.
Garmin Forerunner 620 Rating:

4 out of 5 stars

Pros:

- Color display, lighter & thinner profile running watch
- Better for use as an everyday watch
- New Bluetooth & Wi-Fi activity transfer features
- Live Tracking & Mobile Phone Upload capability
- New Running Dynamics metrics (vertical oscillation, ground contact time, and cadence) with purchase of the HRM-Run heart rate monitor package.
- Waterproof to 50 meters (150ft) – Triathletes can swim with the FR620
- GPS accuracy improved & 7 days of saved GPS pre-caching

Cons:

- Internal accelerometer accuracy issues on treadmill runs – varies with arm swing
- Some issues with mobile phone upload via Bluetooth cellular connection and Wi-Fi. (these issues should be resolved in future firmware updates)
- Cycling activity mode on previous Garmin watches not included in FR620 at this time (may be added in the future)
- Current mobile phone support for Apple iOS only. Android support expected soon.