Photo courtesy of SRAM

IT'S ELECTRIC

March 2016 // Road // Tech Tips & Info

Imagine it's the summer of 1985. Bernard Hinault has just won the Tour de France on the latest Campagnolo groupset (which included the newly launched Delta brakes) and Back to the Future is taking the world by storm at the box office. You're out on a road ride with your shop team and you pose the question, "What do you think we'll see first in our lifetime: electronic shifting or a flying DeLorean?" The answer, luckily, has proven to be electronic shifting. Which is good, as it requires much less plutonium and has less of a bearing on the survival of society.

Electronic shifting isn't just on the fringe of cycling, though. It's here to stay and can be found on a growing number of road, cyclocross, and even a handful of mountain bikes. As more riders make the switch, we thought we'd take a look at the major players in the electronic game and what sets each system apart.

Why Go Electronic?

Switching over from a mechanical drivetrain may seem daunting at first but many riders feel that the benefits of electronic shifting outweigh any drawbacks. With electronic, riders can expect faster shifting that performs perfectly—even under load. There are multiple shift points, eliminating the need for a rider to switch hand positions in order to shift. Electronic systems also offer the benefit of being self-adjusting with automatic trim, eliminating any and all chain rub. Plus, since there are no shift cables to replace, cable stretch is a thing of the past and maintenance is a breeze.

Though experimental systems in the late '90's and early 2000's were taken off the market due to reliability issues, all electronic groups currently available have successfully dispelled worries about reliability. Currently SRAM, Campagnolo, and Shimano all have electronic groupsets available. Each one has something that's a little unique and sets it apart from the others. On the following pages, we'll break down what you need to know about each brand's electronic offerings.

SRAM

- **One system: Red eTap**
- **Completely wireless system**
- **Compatible with any frame**

The electronic drivetrain that has the entire industry abuzz is SRAM RED eTap. The latest—and most technologically advanced—system to hit the market, eTap is the result of five years of secret development. eTap takes cues and inspiration from an unlikely place—Formula One racing and its paddle style of shifting. All that development time really paid off. eTap is the first system that is entirely wireless. That's right, the only cables on an eTap-equipped bike are connected to the brakes.

SRAM's goals with eTap were not only to develop a game-changing electronic drivetrain but also to simplify how we think about electronic shifting as a whole. And simplify, they did. Wireless connectivity means that eTap is by far the easiest of any electronic system to set up. In fact, it's actually faster than setting up a mechanical system. It's literally as quick as bolting the derailleurs to the frame and the shifters to the handlebar and pairing them (which takes all of about thirty seconds). It's that simple.

Another advantage to eTap's wireless nature is that there is no frame compatibility conversation that needs to happen. With other systems, frames need to have ports drilled out and spots to store batteries. With eTap, though, none of that is necessary, as the batteries are integrated into the derailleurs and shifters. Plus, the batteries are swappable, meaning that if a rider is out on a ride and their rear derailleur battery dies, they can switch it with the front and head for home with a 1x11.

image
kt4500
SRAM Red eTap

Includes Shift/brake levers, rear derailleur and battery, front derailleur and battery, charger and cord, USB stick and quick start guide.

Buy Now

image
ld4550
SRAM Red ETap

SRAM Red eTap blip shift buttons with 150mm wires

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Campagnolo

- **Three systems: Super Record EPS, Record EPS, and Chorus EPS**
- **Super Record EPS is the lightest system on the market**
- **Fully programmable via mobile app**

Campagnolo released Super Record Electronic Power Shift (EPS) in 2011 and quickly incorporated the technology into its Record and Chorus groups. Campagnolo immediately put EPS groups on the bikes of pro teams to prove themselves to the rest of the world.

EPS has several features that make it unique from other systems on the market. Like all Campagnolo products, the EPS groups are designed in Vincenza, Italy, giving them that "Campy allure" that is sought after by riders all over the world. With three complete systems available, Campagnolo has the greatest range of electronic offerings to date. The brand also touts the lightest electronic group on the market with Super Record EPS. Like Shimano, Campy EPS systems are fully programmable, but it's how you program them that sets them apart. New for 2016, programming for Super Record and Record EPS groups is now done via the MyCampy app for iOS and Android. From the app, users assign functions to individual buttons, adjust shift speeds, and download software updates. Furthermore, the MyCampy app analyzes and displays riders' biometric and performance data and integrates it with data about what gear combinations are being used and gear inch ratios. That's taking the term "bike geek" to a whole new level!

The EPS power source is in the form an internal seatpost battery that gets smaller and smaller with each new version. This slim yet powerful design protects the battery from the elements and offers a slight aerodynamic advantage over external batteries. Campagnolo even thought ahead for those rare rides that end in a dead battery. If the battery dies completely, a rider can disengage the system and manually move the derailleur into the proper position to get home.

image
RD0340
Campagnolo Super Record EPS

Campagnolo Super Record EPS Rear Derailleurs

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image
LD0340
Campagnolo Super Record EPS

Campagnolo Super Record EPS Brake/Shift Levers, Drop Bar Pairs

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image
CY0326
Campagnolo EPS Interface Unit

In conjunction with the EPS Power Unit, the Interface is the "thinking" center of EPS and is responsible for: Changing colors of the LED to communicate with the user, managing settings, converting analog signal from Ergo Levers to digital and sending it on to the Power Unit, and maintaining a dialogue with the EPS Power Unit to process information.

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image
CY0327
Campagnolo EPS Power Unit

The EPS Power Unit serves as the systems source of power as well as the "brain" of the system and is responsible for montioring and managing the battery pack, enabling and monitoring the front and rear derailleurs, signaling any anomalies though the LED indicator on the EPS Interface Unit, communicating with the EPS Interface Unit, and enabling the acoustic buzzer.

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Shimano

- **Two systems: Dura-Ace Di2 and Ultegra Di2**
- **First brand to dive into electronic shifting**
- **Fully programmable**

The electronic shifting system that started it all is Shimano's Di2 drivetrains. First launched in 2009, Dura-Ace Di2 was the first commercially successful electronic group to hit the market; several professional teams raced on it in that year's Tour de France and Tour of California. In that same year, several frame manufacturers began designing frames compatible with the new group, incorporating the necessary ports in the correct spots.

Over the years, Di2 has seen numerous versions and updates like going from 10-speed to 11-speed and the inclusion of a second, more economic version in the form of Ultegra Di2. The current iterations that are available are completely programmable. This means that the user has complete control over what each button actually does and the speed at which the system shifts. While Shimano's systems do require wires, they feature a sleek, seatpost-mounted battery that is nicely hidden inside the bike. Of course, the ability to run a seatpost-mounted battery is dependent on frame compatibility. If a frame is unable to fit an internal battery, Shimano also offers an external version. Additionally, this one battery powers every piece of the system so there's only one thing to charge.

The average rider will only have to charge their Di2 battery once or twice a year, as you can get up to 1,500 miles on a single charge. In the very rare case that a battery dies while out on a ride, Di2 has some built-in features to make sure you get home without too much suffering. When the battery gets low enough, the front derailleur will lose power first, making the system into a 1x11. After that, the rear derailleur will power down. However, after the battery is completely depleted, the derailleurs will stay in the gear they were in when it died. So, if you lose control of the front derailleur on a ride, pick a mid-range gear that you wouldn't mind riding the rest of the way home.

Shimano is the first brand to take its electronic shift technology off-road with the release of XTR Di2.

image
LD9070
Shimano Dura-Ace Di2 ST-9070

Shimano Dura-Ace Di2 ST-9070 Brake/Shift Levers, Drop Bar Pairs

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image
BA9070
Shimano Di2 Battery

Shimano Di2 Batteries. Must purchase battery, charger, and power cable to complete the system.

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image
CY6760
Shimano Di2 Junction Box

Shimano Di2 Frame Junction Box

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QBP ADVOCACY

BY CATEGORY

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- Internship
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- Service & Repair
- Winter Riding

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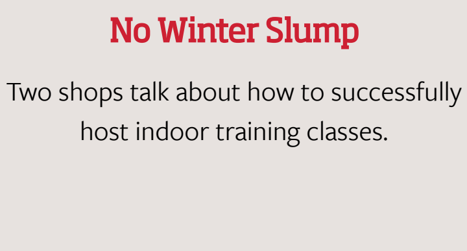

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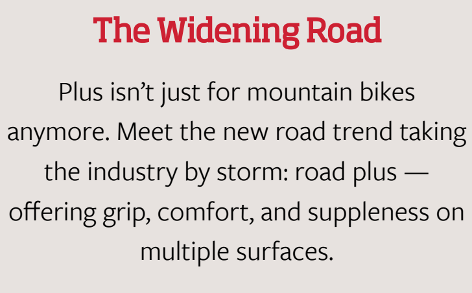

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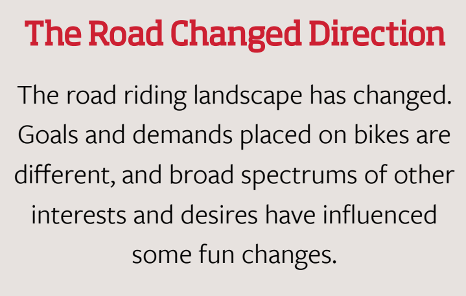

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This Month in Call Up

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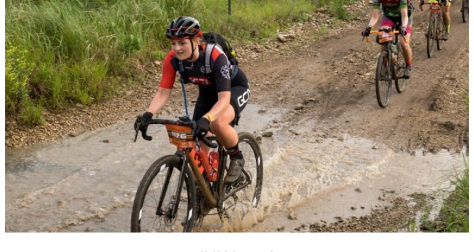

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FEATURED BRANDS

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