



CLASSROOM ON WHEELS

EXTENDING THE SCHOOL DAY



For students with long school bus commutes, the time spent on the bus is often anything but productive. But that's changing. Now, a growing number of schools are installing Motorola's Wireless LAN (WLAN) connectivity on their school buses, which effectively extends the school day. Students enjoy the same high-speed access to information that they have in the classroom or media center, making it easy to do homework, collaborate with other students and pursue individualized learning on their mobile devices and computers. For these students, the school day no longer begins nor ends at the classroom door.

The overarching goal is improved student performance. Teachers, administrators, and parents are united in their desire to improve student achievement by maximizing access to education content and curriculum... not just inside the classroom, but anywhere students could be learning. The challenge is to make the most of every minute of every school day, including those minutes not actually spent in the classroom.

MORE LEARNING TIME

School bus WLAN access to full classroom resources and information helps improve student performance by increasing work and study time. It makes commuting time more productive, helping students better plan, review and create assignments. It also makes bus rides for field trips and

other student events such as scholastic and sports competitions more productive.

What kinds of materials and solutions are available for students on connected school buses? Basically, students have access to everything that's available in the classroom or media lab. A few of the available solutions include:

- Self-paced tutoring videos on specific science and math topics that help students drill deeper down into a concept, or review examples of material they found particularly challenging in class.
- E-learning and student collaboration platforms on which students can work together virtually on projects and participate in blended learning environments.
- Online interactive material that supplements in-classroom curriculum and is tied to state learning standards.

BENEFITS FOR ALL

Motorola's solutions for broadband connectivity on school buses enable a wide range of benefits for all concerned parties.

Students

- Increased time on task for homework and school projects
- Increased communication and collaboration with other students
- Increased student empowerment to progress at their own pace

Teachers

- Increased student performance
- Increased communication with students
- Increased percentage and quality of student work submitted electronically

Administrators

- Increased student performance
- Improved positive student activity during commute time

Parents

- Increased student performance
- More positive student activity commuting to and from school

Bus Drivers

- Increased safety, security and efficiency during commute
- Fewer disciplinary distractions while driving
- Improved communication and bus fleet management



SCHOOL CONNECTIVITY

With Motorola's WLAN solution, students can make more productive use of their bus commute times. They can access the secure school network on their laptops or smartphones to do homework, study or collaborate with other students.

NETWORK SECURITY

Schools are always concerned about student network access and the content they are accessing. Motorola's solution extends the school's own network to the access point on the bus using a secure VPN tunnel over a 3G/4G cellular network. Student access is authenticated the same as in the classroom, and all traffic is encrypted and routed back to the school's network, utilizing the school's firewall security and content filtering as if the students were on school premises. Although the access point on the bus could be anywhere in the world with a 3G/4G connection, it still maintains the same security and functionality as if it were on a ceiling in a classroom, keeping the students protected and on task.

INCREASED STUDENT SAFETY

Network connected buses also help provide increased safety. Motorola's WLAN connectivity helps create the "next-generation school bus" by providing for real-time GPS-based route tracking of buses, more streamlined fleet management, video surveillance and RFID-based student accountability, as well as enhanced voice communications with the driver in the event of an emergency situation.

Student behavior on school buses is another important safety issue, and is particularly of concern on long and frequent bus trips. High-speed connectivity on buses helps students build more positive habits. When students are engaged in course work while riding the bus, behavioral issues, restlessness and potentially hazardous activities are significantly reduced.

WLAN CONNECTIVITY SOLUTION

Unlike consumer grade systems, Motorola's solution is a secure, robust, professional grade connectivity solution, designed to meet both the stringent requirements of school districts and the challenging environments found on school buses.

The Motorola professional grade solution delivers:

- Reliable performance in a rugged environment
- A fully integrated solution that can apply school policies and content filtering
- The latest high speed 802.11n wireless standard
- Network management with encrypted and secure connections
- Reliability in harsh environments from -40°F to 140°F
- Integrated 3G/4G cellular backhaul between school and bus

As educators seek to use the tools of e-learning to improve student performance, they are finding that WLAN connectivity creates next-generation school buses that extend the school day and help maximize learning time.

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