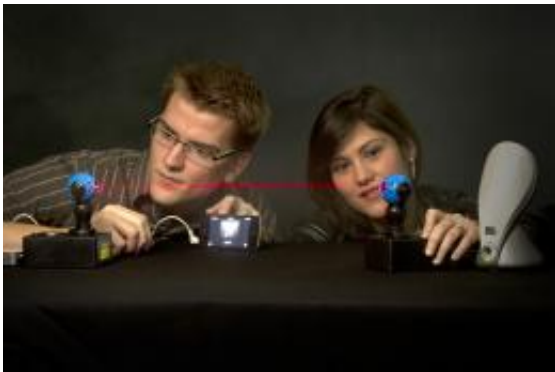


Laser music: BYU electrical engineers use light to beam songs across a room

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Matt Seamons and Jana Sardoni, BYU electrical engineering majors, demonstrate the devices they built that transmit music from an iPhone to speakers using a laser.

Use light to transmit music across a room – that’s the challenge for students in a BYU electrical engineering class.

Each semester, classes resume the challenge of improving on previous designs. At one point, their device had to be plugged into an outlet to work, then the students figured out how to make it battery powered. This semester, the students made it compatible with any music player.

The current model, known as free space optical transmission device, can beam “Party Rock Anthem” or any song from anyone’s iPod to a receiver and speakers up to 20 feet away. Its battery life is more than

two hours.

“Seeing everything come together at the end, working even better than we expected, was really cool,” said senior electrical engineering major Jana Sardoni, who has already accepted a job offer from Intel to design processors.

Sardoni’s team produced the winning design. Their device ran the longest without recharging and also added an LED display that indicated battery life.

“This project gives them experience in building to a customer’s desired outcome,” said Aaron Hawkins, who taught the class with fellow electrical and computer engineering professor Stephen Schulz. “A concrete product where we say to them, ‘Here’s how it is supposed to work, to these specifications. You go find your own solutions.’”



The students built a transmitter, which plugs into an audio device, and a receiver, which plugs into speakers. The transmitter directs a [laser](#) to flash in a distinct pattern. They also created a circuit that can compute

the flashes of light and translate them into a recognizable format for the speakers.

“They gave us a little bit more flexibility in this class,” said Matt Seamons, another member of the winning group. “After we’d learned a lot of the foundational things, the flexibility allowed us to think more innovatively. We showed that we could go out into the industry and be ready to hit the ground running and be successful.”

Greg Loveland and Raymond Barrier were also on the winning team.

Provided by Brigham Young University

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