

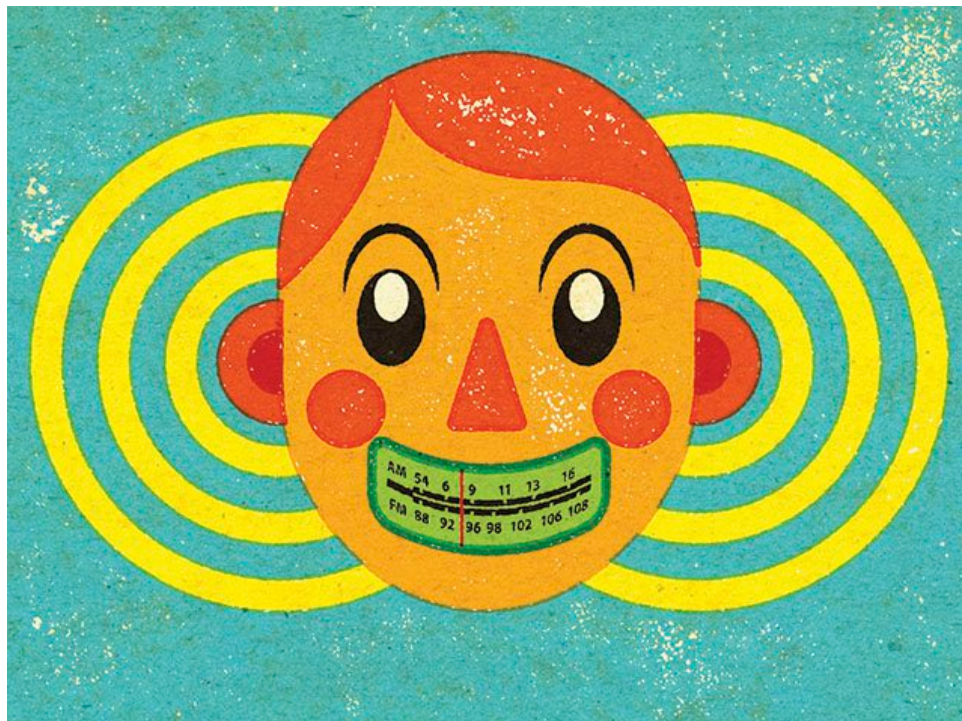
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Freeing the airwaves

Phantom Machine Works helps make low-power community radio possible

BY **LIZ MERFELD** JULY 17, 2015 8:00 AM



ALEXEI VELLA

Wisconsin Public Radio's July 3 episode of *Central Time* on WHSF featured a story on *Back to the Future*, celebrating the movie's 30th anniversary.

Movie buffs have noted that the second film in the trilogy, set in the year 2015, features flat-screen TVs, smart glasses and hover boards. But something is missing: radio.

The omission could seem unimportant, until you compare it to the first film. From the opening lines (a radio commercial) to the clock radio that welcomes Marty McFly back to 1985, radio broadcasting gets more screen time than his iconic orange-red vest.

We can see now that radio hasn't gone the way of feathered hairstyles and banana clips. "I keep hearing about the 'death of radio,' but at the same time I keep hearing things like "98% of all U.S. residents listen to the radio at least a few times per week," says David Klann.

Klann, along with business partner Todd Fisher Wallin, started a company in April in response to a new wave of organizations eager to get on the air. A former WORT-FM volunteer, Klann says he and Fisher Wallin are "passionate about using technology to enable people outside the mainstream media to be heard; to 'give voice to the voiceless.'"

In 2010, five years after moving from Madison to the Driftless area, where he learned computer-based audio processing, Klann helped build the Viroqua radio station, **WDRT**. Since then, he and Fisher Wallin have dreamed of "helping stations and saving them money along the way." Last August, at the Grassroots Radio Conference in Ames, Iowa, several people asked them to do just that.

Their answer: Phantom Machine Works. From its base in Viola, the company serves clients ranging from full-power noncommercial stations like WDRT (on the low end of full-power stations) and **KMUD in Garberville, Calif.**, to low-power FM (LPFM) stations scattered throughout the country.

To qualify for an LPFM license, the licensee must be a nonprofit, and the station must have a maximum output of 100 watts and a broadcast antenna no higher than 30 meters above the surrounding terrain.

While the LPFM class has existed since around 2000, a spike in new stations followed passage of the 2011 **Local Community Radio Act**, which removed some restrictions and allows for more stations to operate.

There's a learning curve that comes with starting your own radio station. It involves fundraising, organizing, energizing volunteers, and dealing with technical, legal and regulatory issues. Then there's this added pressure: Once the FCC grants an organization a "construction permit," the clock starts ticking. Groups have 18 months to get the station on the air and operational or they lose their license.

To help LPFM stations meet this deadline, Klann and Fisher Wallin build and integrate complete computer audio systems by taking open-source software and configuring and packaging it.

“Unlike most commercial broadcast audio equipment vendors, we publish the hardware specifications and the software configurations to our [GitHub site](#) and our wiki, [opensourceaudio.org](#),” says Klann.

The model uses off-the-shelf, readily available hardware. “People can use our ‘recipes’ and build things themselves, or they can acquire turnkey, supported systems from us.” They also offer support contracts to stations that build systems themselves.

Here in the Madison area, the company has [helped numerous LPFM stations](#), including Lussier Community Education Center’s forthcoming [neighborhood radio station](#), which will allow community members, organizations and schools to broadcast their own content. “People are clamoring for outlets where they can get involved and feel as if they’re making a difference,” Klann says.

They eventually hope to support larger noncommercial, community and even commercial stations, as well as online streaming-only stations. Regardless of station size, Klann believes that attention to local issues is the key to retaining and growing audiences.

As for radio's future, Klann predicts that, more and more, it will drift to the Internet. "But the aspect that won't change is the immediacy and locality of live 'radio.'"

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