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Subject: Radio broadcasting

Posted by [Wayne Parham](#) on Thu, 04 Apr 2024 14:17:30 GMT

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Recent discussions about the business of radio broadcasting brought me to a similar train of thought, which is the technology of radio broadcasting.

We are all so caught up in the advancements of digital technologies these days, we sometimes forget how very new any type of electronic information technology is. The internet is about 35 years old - at least the Hypertext Transfer Protocol (http) mechanism that makes it what people think of today as "the internet." But consider that radio broadcasting is barely 100 years old. That's pretty amazing. Fifty years ago, there was no internet. And fifty years before that, there was no radio.

In 1900, radio broadcasting of audio was still highly experimental. The only kind of sound that could be broadcast was very distorted, because the concept of a continuous wave hadn't been invented. Even making a continuous wave was difficult, as most experimental efforts used a mechanical alternator to do it. Before these mechanical alternators, transmitters used a spark gap, which could only make pulses and so weren't suitable for modulation. So between 1900 and 1920, a continuous-wave transmitter was pretty primitive, using a mechanically spinning alternator. Only after around 1920, were vacuum tubes used to build radio transmitters. That makes the technology 100 years old.

Kind of weird to think about that, isn't it?!!

So but now I want to diverge a little bit, and talk about amateur radio transmitters. Not the high-power amateur radio that some people call HAM radio. I'm interested in low-power transmitters, as described in Part 15 of Title 47 of the Code of Federal Regulations of the Federal Communications Commission. Basically, these are little 100mW transmitters with limited antennas that are legal to operate in the USA. They allow a person or organization to make their own "personal radio station" having limited range.

There are lots of products - both fully manufactured and kits - for AM and FM transmitters that operate on the standard commercial bands. So for all of us with tube radio receivers, it's easy to make your own little station that transmits whatever content you want. You can broadcast your favorite Pandora radio stream, or do what I do, which is to broadcast audio books and other spoken material. I mainly only care for a range that covers the house, but I find that my transmission can be easily heard at some distance. I suppose I should probably check that it isn't strong enough to violate Part 15 rules, but then again, I live in a fairly secluded area so I doubt I'll cause any concern.

Cool, huh?!!

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Subject: Re: Radio broadcasting

Posted by [gofar99](#) on Fri, 05 Apr 2024 01:47:56 GMT

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Hi Wayne, Yes it has been a fun ride in radio land. I made a FM low power transmitter in college and we used it to send stuff around a large part of the campus. It would go about 1000 feet in any direction. Under 100mw and the antenna was only about 3 feet long. We did have an advantage of height though as it was mounted near a third floor window. It was powered by 9V from "D" cells. They would go for many days. A friend wanted an AM transmitter which I built and disavowed any knowledge of its intended use. He started out with a 100 foot long wire end fed antenna. The transmitter was crystal controlled and used a 6BQ6B for the final. I just built it...not used it. He was reaching about 10 miles. Back then no one cared though so I guess he got away with it. Since then I stick to things that don't test the law.

I figure the next evolution of radio will be with brain implants. Yuck. :?

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Subject: Re: Radio broadcasting

Posted by [Barryso](#) on Fri, 05 Apr 2024 13:21:04 GMT

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I worked at the college radio station back in the day. Years after I'd graduated there were a few folks who worked there that setup a pirate radio station.

Here's the rub. They didn't play avaut guard music. No punk. No rock. They programmed it for a MOR (middle of the road) format that was something that middle age and older people liked back then.

So the station didn't attract unwanted attention. That meant no issues with authorities or the FCC.

It was quite odd and quite brilliant all at the same time.

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