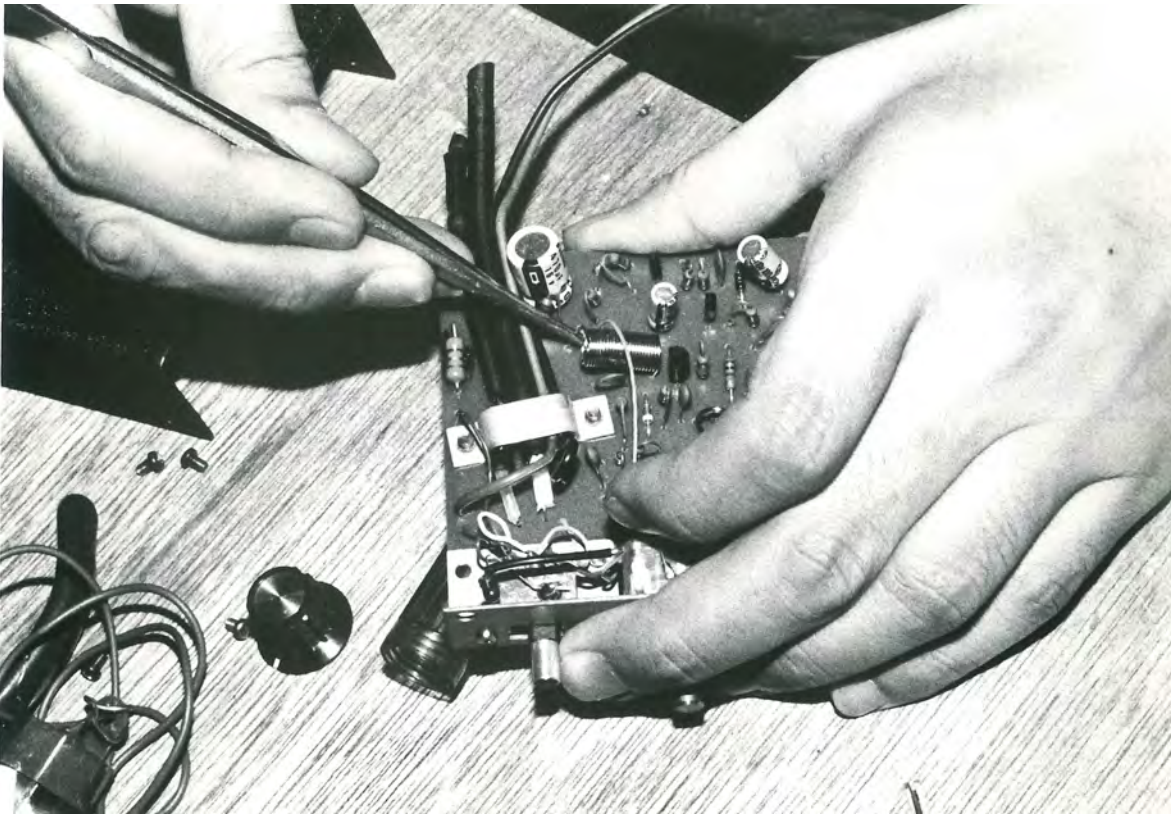


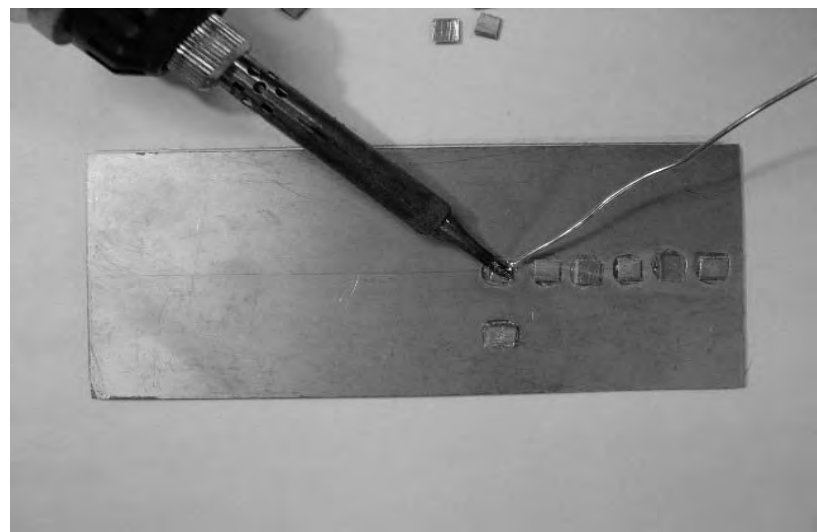
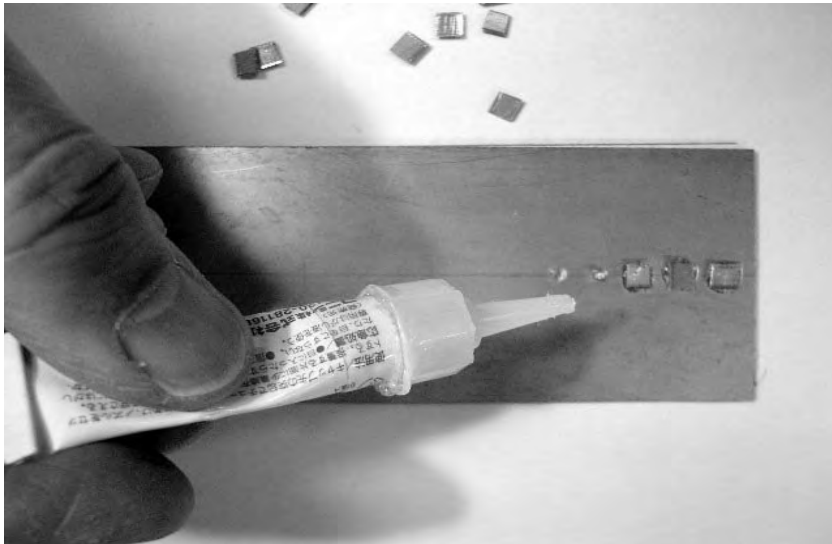
# A Visual History of Making transmitters

By Tetsuo Kogawa

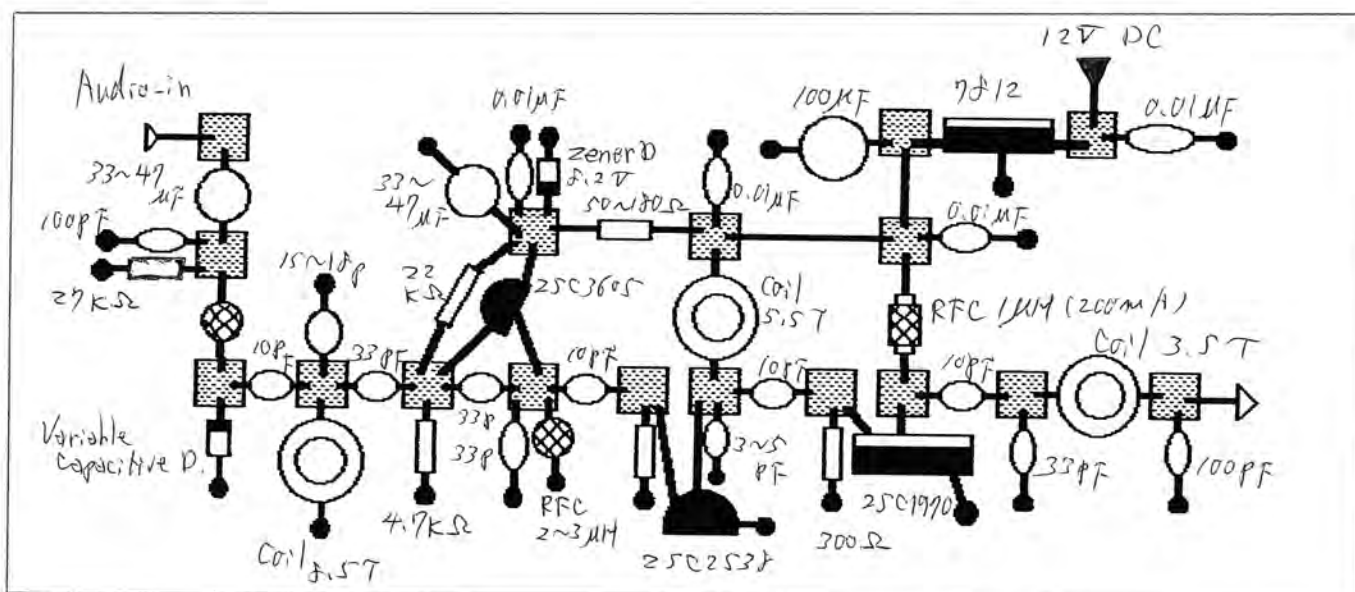
In the earliest stage of our radio transmission, I tried to have a hardware-hacking: transforming ready-made transmitters.



But I gradually understood that this type of attempts didn't work for those who were less enough knowledge of building electronic circuit and, instead of it, interested in opening their own radio station by themselves. So I started looking for a way to do so more easily. This lead me to use a copper-plated board. This technique made easier to check the circuit visually and to learn how it works.



I started to make a printed manual for the beginners.



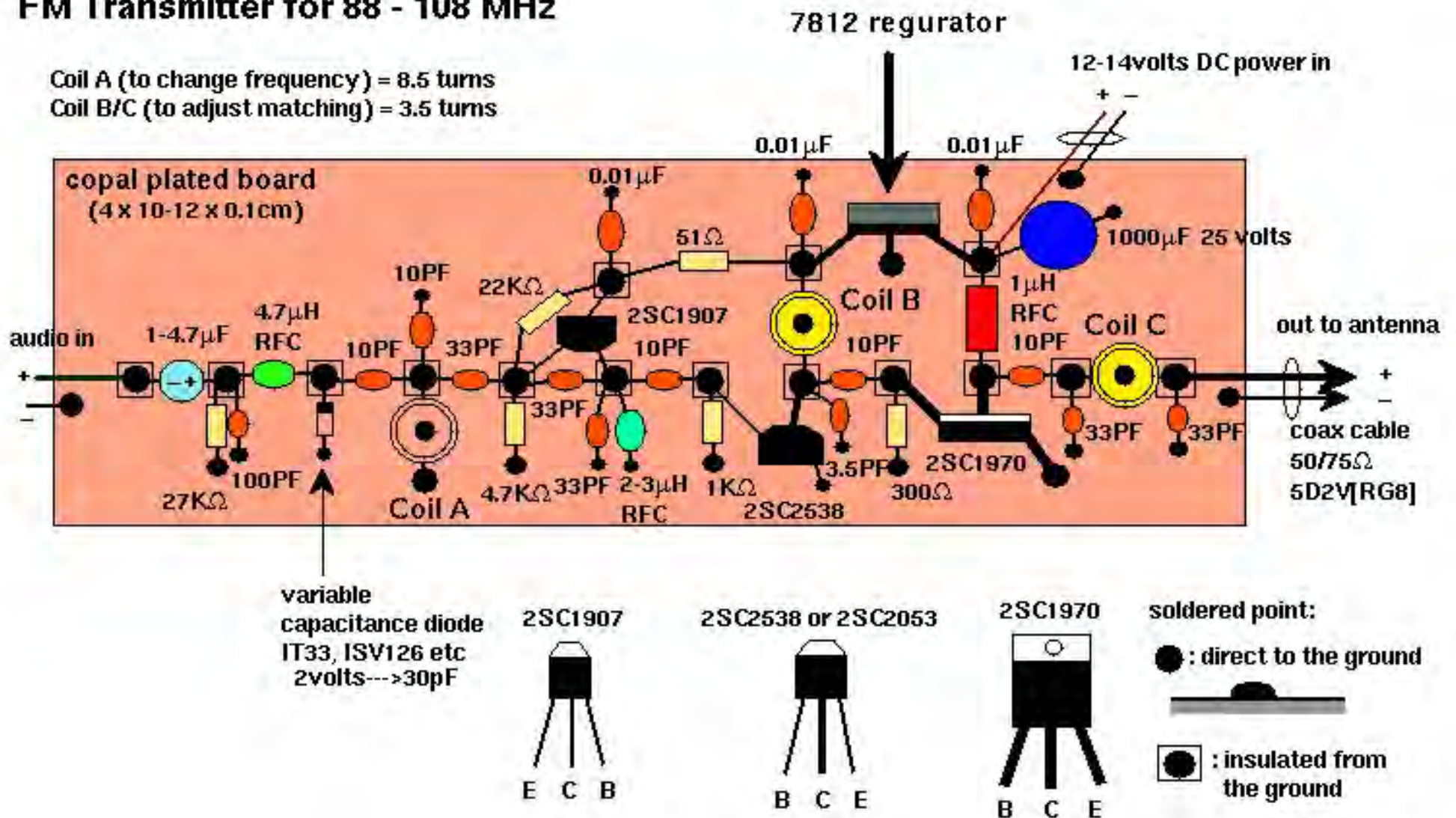
This lead to my on-line manual and I had many users after 1999:  
<http://anarchy.translocal.jp/radio/micro/howtosolder/howtosolder.html>



Through many sessions of workshops, researches and actual experiences, I succeeded in a standard version of the visual manual on my webpage:

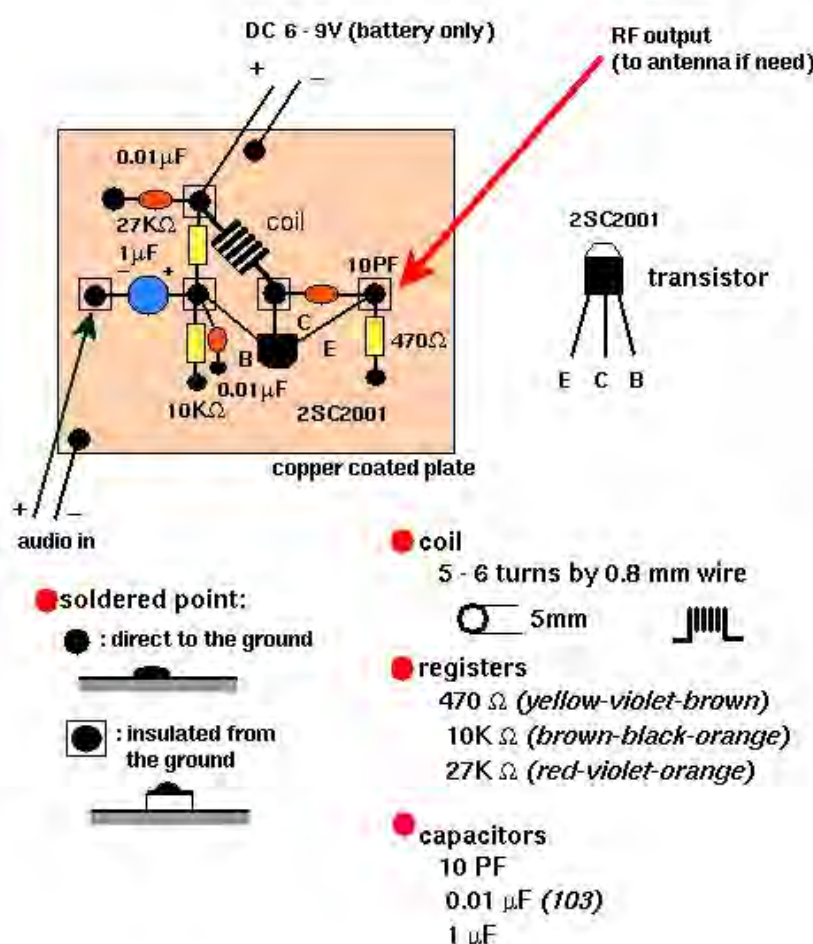
### FM Transmitter for 88 - 108 MHz

Coil A (to change frequency) = 8.5 turns  
 Coil B/C (to adjust matching) = 3.5 turns



This type of transmitter could cover a couple of miles if it has a adjusted antenna. In the mean time, the Internet became easier to use. For my concept of micro transmitting, even such a low-power transmitter was considered as too much. To cover the larger area, one can use the Internet. Micro transmitter should have more micro function to cover. So I designed a "simplest" model.

### Making the simplest Transmitter



In terms of this transition, let me quote my words from my mail answers to Annmarie Chandler and Norie Neumark (At A Distance, MIT Press, 2006):

I argued that in the age of public access via satellite communication, global communication would become some-what banal; artists should be concerned instead with the microunit of the medium. The Internet has rapidly developed global communication literally and the exchange of data has become too easy. This gives us an opportunity to rethink our more micro and local area of space and time. Radio also allows me to rethink the relationship between art and the body. High technology can substitute equipment for our body elements. Media art, techno-art, and computer art tend to reduce the bodily involvement in an artistic creation. It is because technology has been commonly and bureaucratically used in these directions. However, technology has dual aspects: techne (techno-) and logos (-logy). Logos logicizes everything and eventually establishes logistics. Our modernist way of life and the military system have become ever closer to each other. Techne, however, means hand work. Ars (art) is the Latin translation from techne. So technology does not have to be only "high tech" but could also work on the scale of hand work and at the distance of human limbs. This is a new area for the electronic arts and perhaps provides an alternative to the present way of life.

While mini-FM's range was walking distance, my present attempts are done within waving-hands distance. By moving my hands over very-low-powered transmitters, I can make my hand movements evident as well as the noise/sounds deriving from the interference that my hands and transmitters create. I am interested here in the relationship between hands and airwaves because I think the hand is the minimum integral part of our body. Immanuel Kant allegedly wrote that "the hand is the outer brain of human being." The brain is also a part of our body and is the most complicated and dense part. So our hands can act for our whole body.



As a critic of radio media, a broadcaster of free radio, a workshop leader of making one's own DIY transmitter, a public artist using transmitter, and a radioart performer, I have been trying to deconstruct transmitter and create something new not only in the social but also what 'art' should be per se.

Anja Kanngieser keenly summarizes the point in our discussion (parallax, 67, 2013, p.93):

If we understand radio as a device, both therapeutically and organisationally, we can widen our focus from an economy of value quantified by mass attention, to see value in the micro-political gesture. This is not to say to become myopic, because radio has long served as an important mass political communications technology, but to recognise that it does not always require the loudest of speakers to be antagonistic, or the furthest of transmissions to find communication in common.