Open Source Video Workshop

Your Own Private Pirate TV Station
Making P2P Television
With !Mediengruppe Bitnik (.ch)

Thursday, November 20 2008, 10:00 - 13:00h
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Your Own Private Pirate TV Station

You own it, it's yours to experiment with, to share and to decide about what to broadcast.

It's private in the sense that you are working with legal and low-range components. This means you are broadcasting in your immediate neighborhood.

But it is nevertheless illegal under most jurisdictions to produce UHF airwaves, so carefully choose time, location and environment before broadcasting. Check out the legislation of the area you are conducting experiments in.

The components described in this set-up purposely use easy-to-find standard legal components in order to keep risks of prosecution at a minimal.

It's an easy to build low-range TV transmitting equipment for the transmission of video and audio through UHF (Ultra High Frequency) air waves.

Why Make Your Own Private Pirate TV Station?

«Freedom is fostered when the means of communication are dispersed, decentralized, and easily available, as are printing presses or micro computers. Central control is more likely when the means of communication are concentrated, monopolized, and scarce, as are great networks. [...]

The onus is on us to determine whether free societies in the twenty-first century will conduct electronic communication under the conditions of freedom established for the domain of print through centuries of struggle, or whether that great achievement will become lost in a confusion about new technologies.»

Technologies of Freedom, Ithiel de Sola Pool, Harvard University Press, Cambridge, 1984.

A Brief, Exemplary and Very Incomplete History of TV Hacking

1967 Manifesto «New Forms of Struggle against Politics and Art» by Situationist International

1968 «Steal This Book» by Abbie Hoffman

1971 «Guerilla Television?» by Michael Shamberg

1982 «Rabotnik TV», Amsterdam, The Netherlands

1986 «Captain Midnight on HBO», New York, USA

1987 «The Max Headroom Incident», Chicago, USA

1988 «Piratskoe Televidenie» (Pirate Television, 1988-92) in Petersburg, Russia

1988 First «Van Gogh TV» Event in West Germany

1990 «Kanal X», Leipzig, East Germany

2002 «The Teletreets Movement» starts with «OrfeoTV», Bologna, Italy

2006 - 2013 Digital Television Transition: Switching from analogue to digital broadcasting.

How to Build a Private Pirate TV Station
Setup with two Signal Amplifiers

Step 1: Connect TV/VCR-OUT-connector of your HF modulator to the IN-connector of your first signal amplifier with (short) coaxial cable (male F-connectors on both sides).

Step 2: Connect th OUT-connector of your first signal amplifier to the IN-connector of your second signal amplifier with (short) coaxial cable (male F connector for both sides).

Step 3: Connect the OUT of your second signal amplifier to your antenna. Your Antenna will normally have an N-connector - you can use a coaxial with the F-male to BNC-plug and from the BNC-plug to N-plug.

Step 4: Connect an input to your HF Modulator with Cinch-Cable. The input can be a computer, a DVD-player, video recorder, video or mixer, etc.

How to Build a Private Pirate TV Station
What you will need (part 1)

Yagi or dipol antenna according to Broadcast Frequency (the lower the frequency the larger (and preciser) the antenna must be!). It is quite hard to find the right antennas, and the best people to ask for advice are HAM-radio amateurs. There is a good portable antenna called „flexayagi 7015" (flexayagi.de) which is produced by a german HAM-radio company. Because the HAM-radio band lies just beneath the UHF-band, this antenna can be used for broadcasts on channel 21 (430-440 MHz). The antenna is also small enough to carry around! Flexayagi 7015: € 108.-, see flexayagi.de

Coaxial cables with various plugs:
Coaxial with F-male connectors on either end to connect Amplifier(s) and Modulator; coaxial with N - plug to connect Antenna; coaxial with N - plug to connect Antenna; Optional: Coax with antenna plug to connect TV directly to HF-modulator for testing.

How to Build a Private Pirate TV Station
What you will need (part 2)

HF modulator to convert video signal to Antenna signal. Buy these in local TV parts shops or strip from a video recorder (every VHS with a antenna-out has one inside). The HF modulator decides which channel / frequency you will broadcast on. There are various models you can buy and they differ in broadcasting range, but most offer a range from 175-862 MHz // Channels 5-69. The modulator you strip from VHS recorders broadcast on channels 3 and 4. Approximate costs: € 40.- - € 60.-, manufacturer: Axing, HAMA

Signal Amplifier(s) / Signal Booster(s); 20dB / 25dB / 30dB; Range: 82-862 MHz; There can be more than one amplifier to boost your signal (connect in series).
Approximate costs: € 70.-, manufacturer: Axing

A hack day #08
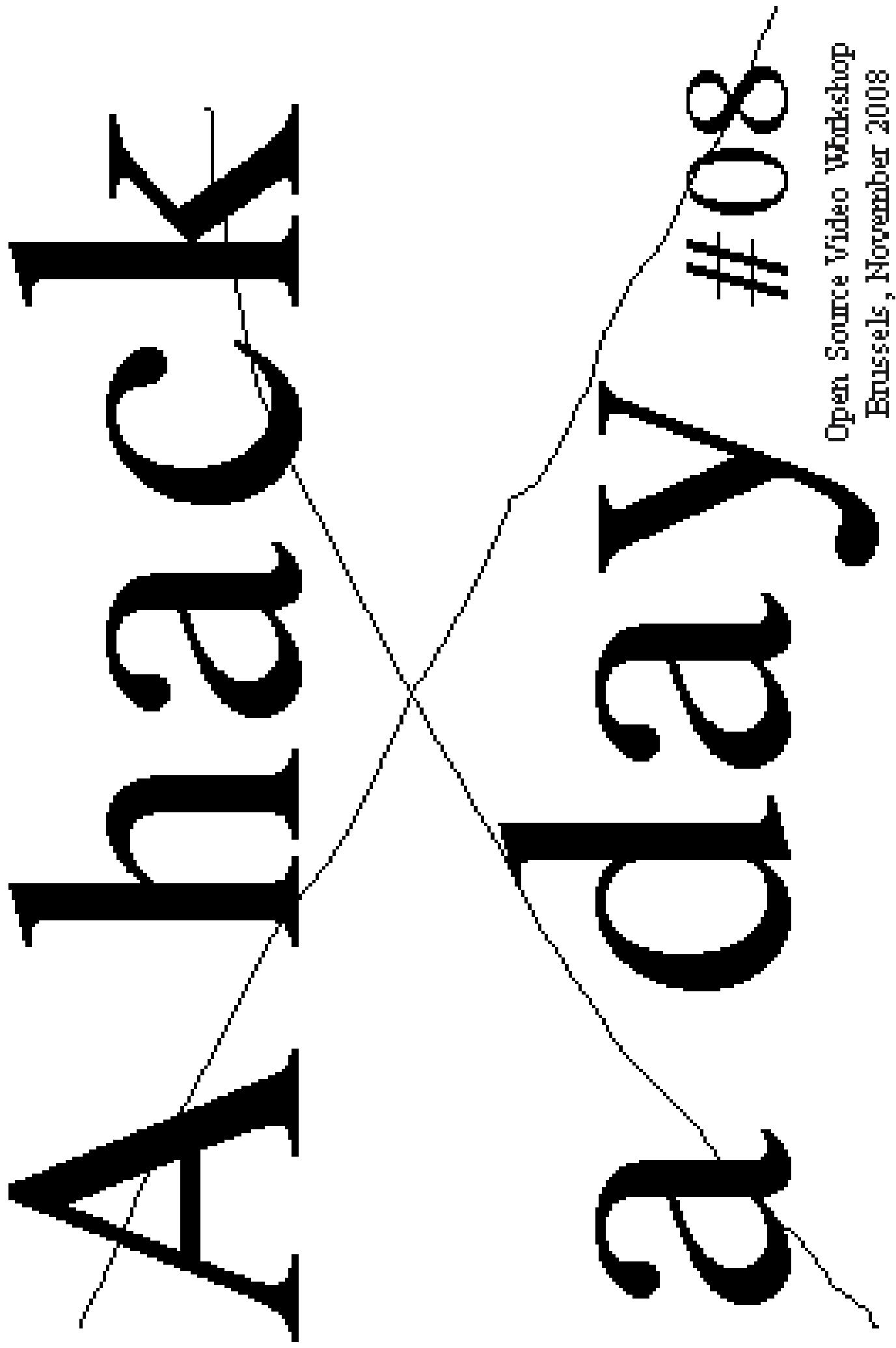
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Brussels, November 2008