

TERRESTRIAL TELECAST



Dennis Zografos

dz@dzog.us
508-737-8707

12 Lovell St. #2
Somerville, MA

What is it?

Terrestrial Telecast is an interactive visual installation showcasing the reinvention of analog broadcast television into modern technology art.

Two dozen battery-powered portable television sets (circa 1980s-1990s) are available for viewing and interaction with by participants.

Nearby, a low-powered broadcast station is transmitting video to various television channels. Participants are free to operate the televisions and “channel surf” across multiple channels of content.

It has been shown at a number of private events in the Boston area during 2014 and 2015.

Background

With the FCC-mandated switch from analog to digital television (known as the Digital Television Transition), analog televisions sets have become “useless” pieces of hardware.

On June 12, 2009 all full-power analog television transmissions ceased. On September 1st, 2015 all low-powered analog transmissions ceased as well.

Empty TV Bands of the EM spectrum, known as “TV white spaces”, are vacant and void of transmission. Old analog television sets are unable to pick up content over the air - simply because content is no longer being transmitted (by law).

Theme

Deprecated, “useless” technologies and hardware are being repurposed to provide a novel-yet-nostalgic experience.

Analog video transmission still has viable uses, even advantages, over digital broadcasting. What is declared obsolete may not be so, even in the rapidly-deprecated field of electronics.

Content

Content is selected to be thematic to the event, of interest to the participants, and to complement the hardware aesthetic.

The previous showing involved the following content:

- Original generative “trip” visualizations (computer-generated stuff that is neat to look at)
- Early animation films from the turn of the 20th century
- Old arthouse and indie films

Only original and public domain content will be used for public showings.

Operational Requirements

This piece is best when it is able to be both viewed and interacted with by participants.

In its previous showing, a room was dedicated to the piece, with televisions arranged on a flat surface and also hanging from various fixtures in the room.

Batteries have to be replaced by the artist every 4-8 hours, though the use of AC-powered televisions is also possible.

The broadcast equipment needs a somewhat secluded area and AC power. Not much power is drawn (this can be measured upon request).

Technology

Video content is provided by Raspberry Pis - one per channel. These devices are configured to boot up and loop video from an SD card.

Broadcasting is handled by old RF modulation equipment connected to antennas. As the modulation equipment is not designed for broadcast, power and effective range are relatively low (generally constrained to the same large room).

Legalities

Broadcasting on television frequencies without licensing was once an illegal act. With the recent FCC changes away from analog broadcast television, new provisions have been enacted to allow unlicensed low-power broadcasting on these bands, with stipulations.

<http://www.fcc.gov/document/tv-white-spaces-rule-changes>

Section II, paragraph 3 states the following:

“the Commission adopted rules that allow unlicensed devices to operate in the TV bands at locations where frequencies are not in use by licensed services. The TV bands consist of six-megahertz channels designated 2 to 51 in four bands of frequencies in the VHF and UHF regions of the radio spectrum (54-72 MHz, 76-88 MHz, 174-216 MHz, and 470-698 MHz).”

“Fixed devices are permitted to operate with up to one watt transmitter power output and may use an antenna that provides up to 6 dBi of gain”

The artist will confirm with the online FCC database - <http://www.fcc.gov/encyclopedia/tv-query-broadcast-station-search> - on the day of the event showcasing the piece, to ensure the intended broadcast channels are TV white spaces. Current searches for Boston, Somerville, and Cambridge do not show a conflict. The artist assumes all potential liability that may result from this piece and will ensure that compliance is met.

That said, as the broadcasting in the piece is very low-power (generally contained to a single large room within a building), and the piece will only be active for a short duration, and unlicensed transmission on these bands is legal according to the latest FCC rules, no issues are anticipated.

Financial

This project has already been built and is fully funded.

No additional funding is requested or required.

📖 THANKS FOR READING! 📖

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