



Invisible Radio Fields

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Invisible Radio Fields

~~HERO-IMAGE



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~~HERO-SUBTITLE Shortrange FM Radio transmitter~~

September 2020 - Phil Gullberg, Applied Creativity

Add the month and year plus name of workshop developer/s

Acknowledgement

We acknowledge Aboriginal and Torres Strait Islander peoples and their continuing connection to land and as custodians of stories for millennia. We respectfully acknowledge the land on which we all meet today, and pay our respects to elders past, present and emerging.

Summary

The Invisible radio fields interactive installation/experience is planned to be part of the Great and Grand Rumpus 2021 (GRUMPUS). Using FM transmitters which are spread across a location allows for scavenger hunts, a unique way of telling stories and exploration.

The idea is to use radio transmitters (short range radio stations) using identical frequencies to guide an audience across locations exploring each node and receiving unique information at each stop

using portable FM radios.

Although the stations will have identical frequencies the idea is that the audience's FM radios will pick up the closest station (as the transmission power increases the closer the receiver). Each station will have its own unique audio track playing, either on loop or a almost endless clip.

Skills Introduced

- Skill 1
- Skill 2
- Skill 3

Materials

Most of these components can easily be swapped out - the only constant is the Adafruit si4713 (Radio Transmitter).

Material	Quantity	Cost	Supplier
Arduino Nano	1		
Adafruit si4731	1		
Power supply (5v)	1		
Portable Audio player (with 3.5mm out)	1		
Portable FM Radio	1		
	Total	\$0.00	

Tools and Preparation

Again, if your workshop does not require physical tools, delete or change this to something like Software required.

Tools

- Soldering will be required to create these
- Tool 2
- Tool 3
- Tool 4

Setting up the transmitters

[Follow the official instructions to get started](#)

- Choose a frequency that based on the lowest possible transmission power
- Also choose a frequency that is not surrounded by high transmission power
- You should set all the transmitters to the same frequency.

No modifications should need to be made to the default code other than setting the FMSTATION (frequency) as well as uncommenting the scanning function temporarily to test what frequency to choose. Please note that moving the installation will most likely require a new scan and for you to change the frequency of your devices to best suit the location, even if in the same building.

When setting up the transmitters around the space make sure to remember that the transmission range is approximately 10m/30ft. This may of course differ based on your FM radio/receiver. Make sure to use the same FM radios/receivers so that the experience is consistent.

Workshop Walk through

Step 1

Sub-Step 1

Sub-Step 2

Step 2

Sub-Step 2-1

Sub-Step 2-2

Step 3

Sub-Step 3-1

Sub-Step 3-2

Step 4

Sub-Step 4-1

Sub-Step 4-2

References

- [Reference Link](#)

Downloads

Add any slide presentations, instructions, software etc. here