



# Library Space Technology Network

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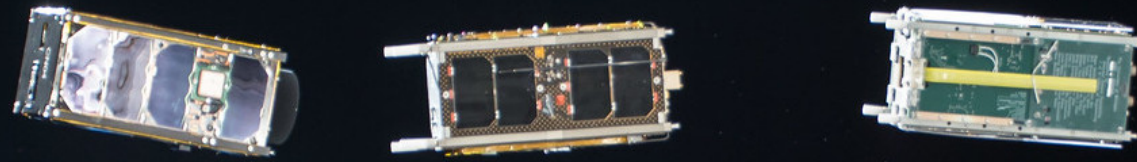
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**Libre Space**  
Foundation



The Library Space Technology Network (LSTN) is a project that offers public library communities the chance to build and engage with space technology.

A photograph of a satellite ground station antenna structure against a clear blue sky. The structure consists of a central vertical pole with several horizontal arms extending outwards. At the top, there is a circular loop structure and a pointed antenna element. The text is overlaid on a dark blue rectangular background in the center of the image.

Each public library in LSTN will build and operate their own satellite ground station.



# Five Public Libraries in the Pilot

Biblioteca Municipală, Chișinău, Moldova

Biblioteca de Santiago, Santiago, Chile

Cambridge Public Library, Cambridge, MA, USA

John G. Wolbach Library, Cambridge, MA, USA

Marathon Public Library, Marathon, TX, USA

A photograph of a woman with short, wavy, light-colored hair, wearing a blue short-sleeved shirt, leaning over a wooden table. She is looking down at a book or paper on the table. A young child with dark hair, wearing a red top and a pink patterned skirt, is sitting at the table, also looking at the book. The background shows bookshelves filled with books, suggesting a library or a quiet reading area. The lighting is warm and indoor.

## Primary factors

Location is in Eastern or Southern Hemisphere  
Country is in Medium or High category in HDI ranking  
Country is politically stable, and we can travel there (if needed)  
Library has an online presence  
Support (University/College, radio club, etc.) within 20 miles

## Secondary factors

Economy (per capita income vs. state/national average)  
Race (percent non-white)  
Number of staff (as available)  
Library budget (as available)  
Other projects (what else is the Library doing)  
Legal framework for operating ground station in country (information from Libre Space Foundation)  
Desirability of location for addition to the SatNOGS network  
Email address for Library/Librarian (or another method of writing to them online)



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# Wolbach Library



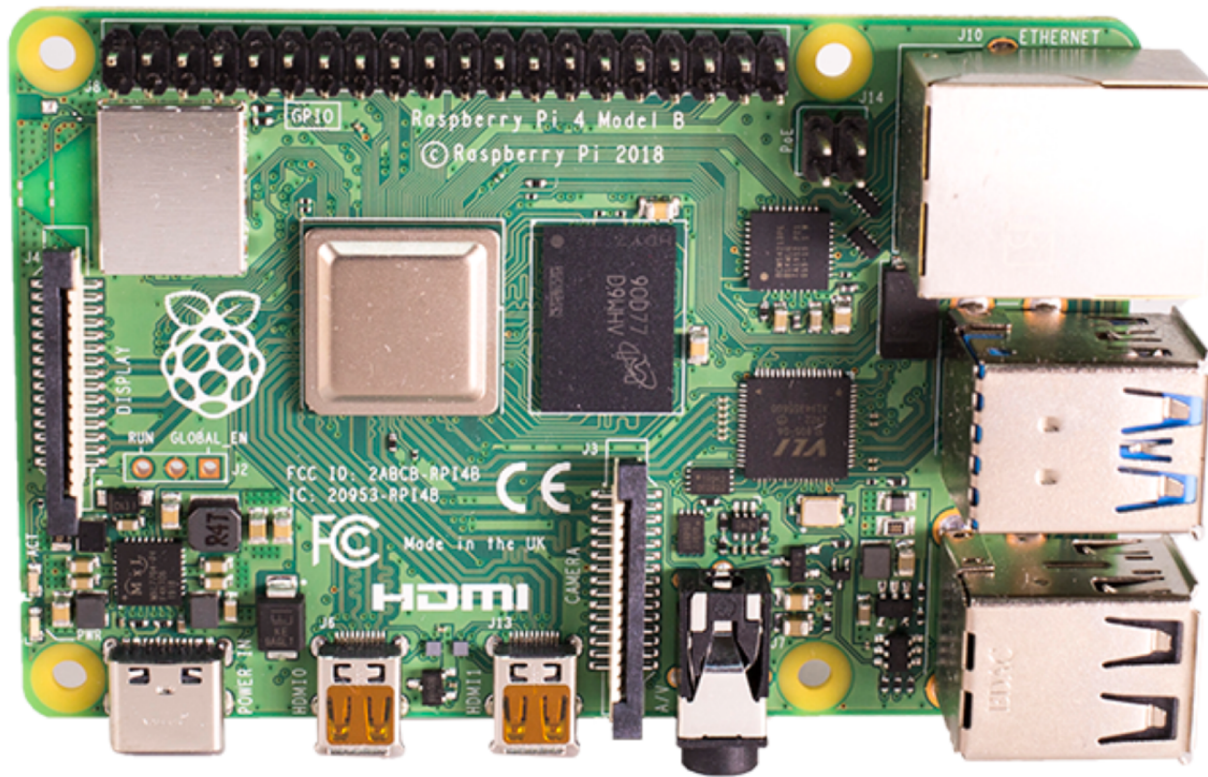












## Single Board Computer

### What is it?

A single board computer is a small, inexpensive, but fully functional computer.

### What does it do in the LSTN kit?

The computer has SatNOGS software installed that allows us to track and record information from passing satellites. It is connected directly to the software-defined radio (SDR) to receive transmissions from the satellites. It is connected to the internet



## Parts

1. Single Board Computer
2. Power for Single Board Computer
3. SD Card
4. USB Extension Cable
5. Software Defined Radio
6. RF Cable (SDR to LNA)
7. Low Noise Amplifier
8. USB DC Cable
9. RF Cable (LNA to Outside)
10. UTP Enclosure Connector
11. Enclosure



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Holding the screw with your finger, flip the Raspberry Pi back over and start screwing on one of the stand-offs with your fingers. After a few turns, finish tightening the screw with the screwdriver. Repeat with the three other holes on the Raspberry Pi.

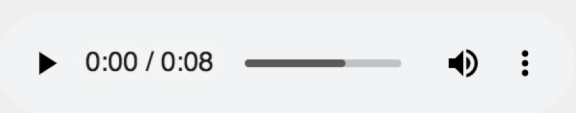


## Satellite Communication Activity

First, watch this short five minute video for an introduction to this activity:



### Now listen to this!



This is the actual communication



## LSTN Activity Idea - Submission Form

The LSTN project offers public library communities the chance to build and engage with space technology. More information is available here: <http://lstn.wolba.ch/> We are soliciting ideas for LSTN activities. To submit an idea, please fill out the form below. We request that you try to fill out every field, but if you are really unsure, you can leave some fields blank.

\* Required

Email address \*

Your email

What is your name? \*

Your answer

Can we contact you at the email address given for follow-up questions? \*

# MARATHON Public Library


With LSTN, we hope to get public libraries around the world involved with real space technology by lowering the cost and technical hurdles of owning and operating a satellite ground station.

INTERNET



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A satellite is shown in orbit above a layer of white clouds on a dark Earth. The satellite has a complex structure with orange and white components. A semi-transparent dark grey rectangular box is overlaid on the center of the image, containing the text "Thank you" and "Questions?".

Thank you  
Questions?