



Experimental Application

Exhibit information: Narrative Statement

We hereby request an experimental license for testing transmissions from low-power user terminals (devices) to a satellite-based IoT-Gateway by UK company Lacuna Space. Testing shall be conducted in various locations to investigate signal quality when transmitting from different parts of the United States. Transmissions to the satellite will be possible up to 2 times per day. The devices only transmit when the satellite is in view.

The devices have been tested and Part 15 equipment authorization has been issued in April 2023 (see FCC ID 2A8AP-LS300).

No space-to-Earth transmissions are requested under this license.

The whole experiment will be conducted on a non-interference, non-protection bases. This license request does not include the forwarding of collected data from the satellite. For the data forwarding, Lacuna Space uses frequency bands that are allocated to satellite services, and ground stations outside of the US. The tests in 902-928 MHz will be solely conducted for device-to-satellite transmissions.

It is understood and agreed that a license grant will exclude any type of commercial operations.

Ground Device Antenna Information:

City/ State	Lat, Lon	Height [m]	Number of devices
Addison, TX	32.95737133014811, - 96.82924681055262	20	10

Applicable to all above-mentioned ground devices:

Polarization: RHCP

Beamwidth: 110°

Azimuth: N/A (Omnidirectional)

Height: 0-2 m above ground

Manufacturer: Lacuna Space

Model: LS300-915-A

There is no fixed location for the devices, but rather an approx. 50 km radius around the locations given above. Devices will not be in motion, but exact location might change in this radius for testing purposes. This is because the performance shall be assessed for different conditions, e.g. both with clear sky view and with obstacles (buildings, trees, ...).

Information on Lacuna Space

Lacuna Space has filed their spectrum use in 902-928 MHz via the Federal Network Agency of Germany (BNetzA) under the name 'LS-4'. Lacuna Space is responsible for the control of the satellite, cessation of service in terms of harmful interference and as well as in any other unforeseen events.



Orbital characteristics of the receiving satellite

NORAD	64841
Name	LS4A
ODAR report name	LACUNA
Altitude	577.7 km 589 km
Inclination	97.8°
Period	96.2 minutes
LTAN	01:08
Dimensions	4U without two triple deployable solar panels
Mass	6.3 kg

All additional information, e.g. orbital debris assessment reports, reentry survivability, collision risk, is attached to this license request.

Contact

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