

Exhibit A — Program of Research and Experimentation
Form 442 Question 7: Experimentation Description

Applicant: The African Village

Authorized Representative / Operator: Joseph P. McNealy

File Number: 0829-EX-CN-2026

Location: 2317 West Chestnut Street, Louisville, Kentucky

Equipment: Great Scott Gadgets HackRF One software-defined radio transceiver

Requested Frequency: 530 MHz

Requested Power/ERP: 100mW

Emission Designator: 20MoF1D

Modulating Signal: Data

Estimated Duration: 24 months

1. Complete Program of Research and Experimentation

Applicant proposes to conduct a limited, low-power experimental radio test using one Great Scott Gadgets HackRF One software-defined radio transceiver at 530 MHz, subject to FCC authorization.

The experiment will evaluate controlled data transmission, station identification methods, signal behavior, antenna orientation, occupied bandwidth, and proof-of-concept communications relevant to resilient community connectivity research.

The HackRF One will be used only as experimental software-defined radio equipment. Operations will be limited to the frequency, power, emission, antenna, location, and time parameters authorized by the FCC.

The proposed experiment is connected to The African Village, a Louisville-based community technology initiative exploring future models for digital desert response, public-interest information delivery, adult learning access, and resilient neighborhood communications.

The experiment will not be used to provide commercial service, common-carrier service, broadcast programming service, or general public Wi-Fi service under this authorization. Any future public Wi-Fi or community internet service would be provided separately using properly authorized and compliant equipment, service arrangements, and regulatory approvals.

2. Equipment and Theory of Operation

The proposed test equipment is one Great Scott Gadgets HackRF One software-defined radio transceiver.

The HackRF One will be configured through software to generate controlled low-power test transmissions at the authorized frequency. The experimental transmissions will be limited to data signaling and measurement activities associated with the requested emission designator.

The proposed station will use a directional antenna with an approximate half-power beamwidth of 60 degrees, oriented approximately 270 degrees true. The antenna will not extend more than six meters above ground or above the mounting structure.

The station will be configured to transmit station identification in accordance with 47 CFR § 5.115. Station identification will be implemented through the software-defined test signal, message format, or transmission protocol used during the experiment.

3. Specific Objectives

The objectives of the experiment are to:

1. evaluate low-power software defined radio data transmission at the requested frequency;
2. observe signal behavior from the authorized fixed location;
3. evaluate directional antenna orientation and coverage behavior;
4. verify station identification procedures;
5. evaluate occupied bandwidth and signal characteristics under controlled conditions;
6. test proof-of-concept data signaling relevant to future resilient community communications research;
7. develop technical knowledge that may support future community connectivity planning for digital desert environments.

4. Contribution to the Radio Art

The proposed program has a reasonable promise of contribution because it investigates how low-power software-defined radio experimentation may support future resilient local communications models.

The experiment may contribute knowledge related to controlled data signaling, station identification through software-defined radio systems, antenna orientation, low-power signal behavior, and potential future uses of radio technologies for community resilience, emergency-ready communications research, and digital desert connectivity planning.

The experiment is along a line of investigation relevant to the development, extension, expansion, and utilization of radio technologies for local public-interest communications research.

5. Interference Avoidance and Operational Limits

All operations will be conducted on an experimental basis in accordance with FCC Part 5 and other applicable rules.

Applicant will operate only within the authorized technical parameters and will take reasonable steps to avoid harmful interference to authorized stations.

Operations will be limited to the authorized fixed location at 2317 West Chestnut Street, Louisville, Kentucky.

The equipment will be operated at low power, with requested ERP of 100 mW, and with a directional antenna configured to limit radiation beyond the intended test area.

Applicant understands that grant of an experimental authorization does not create any right to permanent use of the frequency or spectrum and does not authorize commercial, broadcast, common-carrier, or public communications service.