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FCC Comment on Proceeding 25-201

Opposition to AST & Science LLC (AST SpaceMobile) Request for Amateur Radio Band Usage

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Executive Summary

We respectfully submit this comment in strong opposition to AST & Science LLC's (AST SpaceMobile) request to utilize the 430-440 MHz amateur radio band for Telemetry, Tracking, and Command (TT&C) operations for their planned 243-satellite constellation. We urge the Commission to deny this application and direct AST SpaceMobile toward established commercial satellite frequency allocations that are much more appropriate for their commercial operations.

Background and Technical Concerns

First, we have currently unauthorized operations going on. AST SpaceMobile currently operates five Bluebird commercial satellites launched on September 12, 2024, using amateur radio frequencies at 430.5, 432.3, 434.1, 435.9, and 439.5 MHz

with 50 kHz bandwidth for telemetry links. This existing operation has already demonstrated the potential for interference with legitimate amateur radio operations.

The scope of the proposed expansion is a problem. AST SpaceMobile seeks to expand this usage to a 243-satellite constellation, with each TT&C beam supporting command and telemetry channels with bandwidths between 64-256 kHz. This massive expansion would fundamentally transform the character of the amateur radio band from experimental and emergency communications to commercial satellite operations.

Amateur Radio uses this band and is important. The 430-440 MHz band serves a variety of critical Amateur Radio applications including amateur space communications, weak-signal SSB, digital television, data communications, repeaters and other applications. The amateur radio service in this band supports:

Emergency Communications: Amateur radio operators provide vital public service during disasters when commercial communications infrastructure fails.

Space Communication: Educational and experimental satellite communications that advance the radio arts.

Technical Innovation: Experimentation and development of new communication technologies. Where do we think new engineers come from? Many of them come from amateur radio.

International Coordination: The proposed constellation will cause interference to amateurs world-wide. This is opposed by a wide variety of international amateur radio organizations.

Regulatory and Precedential Concerns

This is a very inappropriate band allocation. The 430-440 MHz band is allocated to the Amateur Radio Service, not commercial satellite operations. ITU

study groups investigated potential TT&C frequency allocations in the frequency ranges 150.05–174 MHz and 400.15–420 MHz, specifically excluding the amateur allocation at 430-440 MHz. Permitting a commercial satellite constellation to operate in amateur radio spectrum sets a dangerous precedent that could lead to further commercial encroachment on bands reserved for experimental, educational, and emergency communications.

Technical Alternatives Are Available

Established commercial satellite bands exist. Multiple frequency bands are specifically allocated for commercial satellite TT&C operations:

1. S-Band (2025-2110 MHz, 2200-2290 MHz): Satellite Tracking, Telemetry & Command (TT&C) is typically conducted over S-band
2. X-Band (8025-8400 MHz): Widely used for commercial satellite operations
3. Ka-Band (27.5-30.0 GHz): Available for advanced satellite communications

Frequency coordination frameworks exist. Satellite frequency coordination, particularly in these frequency bands, relies on a global regulatory and technical framework maintained by the International Telecommunication Union (ITU). AST SpaceMobile should utilize this established framework rather than seeking unauthorized access to amateur spectrum.

ITU study results are clear. ITU study groups conducted sharing studies in various bands which yield that no new allocations are suitable for small satellite TT&C on a co-channel sharing basis. Proper commercial allocations exist that would not interfere with amateur operations.

Proposed Alternative Solutions

We recommend the Commission direct AST SpaceMobile to utilize appropriate commercial satellite frequency allocations:

1. S-Band Operations: Migrate TT&C operations to established S-band satellite allocations (2025-2110 MHz and 2200-2290 MHz)

2. X-Band Implementation: Utilize X-band frequencies (8025-8400 MHz) which offer excellent propagation characteristics for satellite communications

3. Ka-Band Adoption: Consider Ka-band frequencies for high-capacity operations

4. Proper ITU Coordination: Work through established international coordination procedures for legitimate commercial satellite spectrum

Technical feasibility is not an issue. Modern satellite technology readily supports operations in these higher frequency bands. The primary frequency bands of S, X, and Ka are more advantageous than using the UHF band, which has a higher probability of local interference.

Economic and Public Interest Considerations

Protecting Public Service is important. Amateur radio operators provide critical emergency communications during disasters. Interference from commercial satellite operations could compromise this vital public service capability. The amateur radio service serves as a proving ground for new technologies and provides STEM education opportunities. Commercial encroachment limits these important societal benefits and harms our national competitiveness.

Precedential impact is negative. Approving commercial use of amateur spectrum without compelling technical justification would invite similar requests from other commercial operators, potentially destroying the character of amateur radio allocations.

Conclusion and Recommendations

We respectfully urge the Commission to:

1. DENY AST SpaceMobile's request to operate in the 430-440 MHz amateur radio band
2. DIRECT AST SpaceMobile to utilize appropriate commercial satellite frequency allocations in S, X, or Ka bands
3. REQUIRE proper ITU coordination for international satellite operations
4. REAFFIRM the Commission's commitment to protecting amateur radio spectrum for its intended non-commercial, experimental, and emergency communications purposes

The amateur radio bands serve critical public interest functions that would be compromised by large-scale commercial satellite operations. Abundant alternative spectrum exists that is specifically allocated for commercial satellite TT&C operations. We urge the Commission to preserve the amateur radio bands for their intended purposes and direct AST SpaceMobile toward appropriate commercial spectrum.

Respectfully submitted,

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References:
- FCC DA 25-532 (June 20, 2025)
- AMSAT-UK Technical Analysis
- ITU Radio Regulations and Study Reports
- NASA Small Satellite Guidelines