



May 23, 2022

**BY ELECTRONIC FILING**

Marlene H. Dortch  
Secretary  
Federal Communications Commission  
45 L Street, N.E.  
Washington, DC 20554

Re: *WT Docket No. 20-443; GN Docket No. 17-183*

Dear Ms. Dortch:

On May 19, 2022, representatives of Space Exploration Holdings, LLC and its parent company, Space Exploration Technologies Corp. (collectively, “SpaceX”), met with Austin Bonner of Commissioner Starks’ office, to discuss the importance of the 12 GHz band for providing next generation satellite services to Americans.

During the conversation, SpaceX described the vital importance of the 12 GHz band for next-generation satellite systems to serve existing and future consumers and efficiently share spectrum with other satellite operators. SpaceX has relied on the 12 GHz band to provide high-speed, low-latency broadband connectivity to consumers, businesses, and anchor institutions throughout the United States and around the world, including in response to emergencies. SpaceX is poised to drive even greater value to American consumers and businesses through its earth stations in motion, which require 12 GHz capacity to connect aircraft, ships, and vehicles to high-speed, low-latency broadband connectivity in the United States and abroad.

In the NPRM, the Commission set a high, clear bar for extending terrestrial mobile rights in the 12 GHz band, and DISH and RS Access have completely failed to meet it. The studies in the record universally demonstrate that 5G mobile service in the 12 GHz band will cause harmful interference to consumers of next-generation satellite service—the only question how massive the harm will be. Further, DISH and RS Access have refused to respond to the Commission’s request to provide a specific proposal for mobile terrestrial use that would protect next-generation satellite service, leaving the Commission with an insufficient record to act. Moreover, the 5G ecosystem clearly does not need 12 GHz and has no intention to use the band, as no major wireless association, standards body, or equipment manufacturer has expressed any interest in using the band for 5G or 6G. And DISH and RS Access don’t need the band, either. As some of the most notorious spectrum squatters in the industry with massive exclusive spectrum rights that lay almost entirely fallow (in some cases for over a decade), DISH and RS Access have failed to demonstrate the need, ability, or intention to deploy in the band.

The record is clear: granting mobile terrestrial rights in the 12 GHz band will cause tremendous harm to American consumers and satellite providers while rewarding spectrum speculators who have failed to meet even the most basic threshold requirements of the proceeding.



The Commission should not encourage this behavior. The Commission should promptly close this proceeding and remove the MVDDS encumbrances from the 12 GHz band.

Sincerely,

*/s/ Brett Tarnutzer*

Brett Tarnutzer  
Director, Satellite Policy

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Attachment



# ATTACHMENT A



Meeting Participants:

SpaceX

Brett Tarnutzer

Jameson Dempsey

FCC

Austin Bonner



# **ATTACHMENT B**

The SpaceX logo is positioned in the upper left corner of the slide. It features the word "SPACEX" in a white, sans-serif font, with a white swoosh element above the "X". The background of the slide is a photograph of a dark, corrugated metal building with a satellite dish on its roof, set against a dramatic sky with orange and yellow clouds from a sunset or sunrise.

SPACEX

May 2022

# STARLINK UPDATE

Briefing for Federal Communications Commission

# The 12 GHz band has been a key driver of next-generation satellite connectivity for American consumers and businesses

## SpaceX:

- Has launched ~2500 first-generation satellites
- Serves 48 U.S. states and over 400,000 subscribers worldwide
- Provides high-speed, low-latency broadband to support:
  - unserved and underserved communities
  - remote clinics and telehealth
  - disaster response efforts
  - schools and libraries
  - enterprise and small business
- Will connect even more people and places with its next-generation user terminals



## Claim: No Real Opposition to Dish's Spectrum Grab

**Reality:** There is broad, diverse, independent support for consumers of next-generation satellite services against Dish's spectrum grab.

A broad, diverse coalition of over 40 organizations representing public interest, tribal groups, state governments, agriculture, education, telcos and tech companies, and members of Congress have strongly supported protecting consumers using next-generation satellite services against Dish's aggressive arbitrage play, including:

[Alaska Federation of Natives](#)  
[Alaska Technologies](#)  
[American Consumer Institute](#)  
[Americans for Tax Reform](#)  
[Appalachian Council for Innovation](#)  
[Association for Competitive Technology \(ACT\)](#)  
[AT&T](#)  
[The Boeing Company](#)  
[Center for Freedom and Prosperity](#)  
[Center for Individual Freedom](#)  
[Commercial Spaceflight Federation](#)  
[The Committee for Justice](#)  
[Connect Americans Now](#)  
[Connected Nation](#)  
[Consolidated Electric Cooperative](#)  
[Consumer Action for a Strong Economy](#)

[Citizens Against Government Waste](#)  
[Digital Liberty](#)  
[DroneSense](#)  
[FreedomWorks](#)  
[Friday Institute for Educational Innovation, NC State University](#)  
[Gigabit Libraries Network](#)  
[Google](#)  
[Hoh Indian Tribe](#)  
[Intelsat](#)  
[JobsOhio](#)  
[Kepler](#)  
[Maine State Senator Trey Stewart](#)  
[Microsoft](#)  
[Mississippi State Senator Scott Delano](#)  
[National Grange on the Order of Patrons of Husbandry](#)

[National Rural Education Association](#)  
[National Taxpayers Union](#)  
[National Veteran Small Business Coalition](#)  
[OneWeb](#)  
[Santiam Canyon School District, Oregon](#)  
[SES](#)  
[Space Exploration Technologies \(SpaceX\)](#)  
[Skyhook Solar](#)  
[TechFreedom](#)  
[USTelecom](#)  
[U.S. Chamber of Commerce, Technology Engagement Center \(TEC\)](#)  
[60 Plus Association](#)

**Dish has only been able to muster a paid-for, inside-the-beltway “coalition.”**





## Claim: 5G Needs 12 GHz and Next-Generation Satellite Has Other Spectrum to Use

**Reality:** Satellite operators depend on 12 GHz spectrum to serve American consumers; real 5G has no interest in the band.

- Next-generation satellite operators have *no* exclusive spectrum licenses, sharing the 12 GHz band extensively with other users and technologies.
- SpaceX is only licensed for user terminal downlinks in the lower Ku-band and depends on full access to the band to provide service to end users.
- No major wireless association, standards body, or equipment manufacturer has expressed interest in the 12 GHz band for 5G.
- MVDDS licensees are all talk and are hardly using their existing licenses:
  - Dish has amassed massive exclusive spectrum rights for ~20 years with barely any network to show for it.
  - RS Access appears to consist of no employees other than a single arbitrage specialist that only coordinates outside lobbyists and obstructs applications for productive, consumer-friendly uses of the band.
  - The FCC should not reward spectrum squatters and should remove the encumbrances from the 12 GHz band.

### **DISH's existing mobile spectrum:**

700 MHz: Licensed in 2009, buildout deadline extended three times

AWS-4: Licensed in 2013, buildout deadline extended three times

AWS H Block: Licensed in 2014, buildout deadline extended twice

AWS-3: Licensed in 2015.

600 MHz: Licensed in 2017, interim buildout deadline eliminated

## Claim: Dish's "Study" Demonstrates Co-Existence

**Reality:** With correct assumptions, studies demonstrate that opening 12 GHz for 5G would cause massive interference to consumers of satellite services.

- Next-generation satellite systems must operate below the noise floor, meaning Dish's hoped-for high-power rights would cause massive disruption to existing and future users of the band (with no risk to Dish).
- Dish told the FCC as recently as 2019 that technical evidence demonstrated "[concurrent sharing of spectrum between co-primary 5G and NGS0 FSS operations is not viable in the 12 GHz Band.](#)" Dish can't point to any change that would undermine its correct original conclusion.
- Dish's subsequent study has been widely criticized for its poor assumptions and methodology.
- Even under its false assumptions, it still shows **harm to at least tens of thousands of Americans.**

### Dish has refused to correct its "study" to account for:

- Shared use of the band
- Other satellite operators in the band
- Actual location of satellite users
- Actual placement of satellite antennas
- Actual elevation angles used by satellite consumers
- Actual protections for radio astronomy
- Actual effects of MVDDS encumbrances in the band
- Standard interference metrics
- Absence of coordination
- Full deployment of "ubiquitous" mobile services (rather than 10% coverage focused almost entirely in metro areas)

When corrected, **the study falls apart**, demonstrating that 5G and satellite cannot coexist in the band.



## Claim: Satellite Operators Failed to Provide Technical Data in the Record

**Reality:** Without the specific proposals the FCC requested from mobile proponents, satellite operators have nothing to study.

- In the NPRM (paras. 30 and 42), the Commission specifically requested comment on:
  - the [technical parameters](#) that could allow additional terrestrial use of the band without causing harmful interference to incumbent operators.
  - the [appropriate technical criteria](#) that would be necessary to protect NGS0 FSS from harmful interference from higher-power, two-way mobile operations.
  - the [maximum power levels](#) and the most flexibility that could be granted to new terrestrial operations with simple service-rule sharing while still protecting incumbents from harmful interference.
- For over a year, Dish has outright *refused* to provide this data or the slightest indication of how it proposes to use the band.
- When asked if the assumptions underlying the RKF submission reflected an actual proposal, RKF denied that the assumptions were a proposal or that Dish intended to operate as assumed in the study.

## Claim: Giving Dish More Rights will Support Opportunistic Uses

**Reality:** Opportunistic, low-power use may be possible, but only if the Commission denies Dish's request and removes the MVDDS encumbrances.

- SpaceX has offered, in the record and elsewhere, to explore options for sharing the 12 GHz band more extensively, so long as the proposed use is technically feasible.
- SpaceX welcomes further study of whether **low-power indoor use** of the band may be possible without harming consumers of existing services.
- Given the ubiquity of next generation satellite (as well as DBS service) and the fact NGS0 FSS signals at the Earth's surface are already below the noise floor, any unlicensed underlay would likely need to be based on new approaches, rather than existing mechanisms.
- The elimination of the MVDDS encumbrances may free up more possibilities for new services.

