

October 4, 2019

**VIA ECFS**

Ms. Marlene H. Dortch  
Secretary  
Federal Communications Commission  
445 12th Street, SW  
Washington, DC 20554

**Re: *Petition for Rulemaking to Permit MVDDS Use of the 12.2-12.7 GHz Band for Two-Way Mobile Broadband Service, RM-11768***

Dear Ms. Dortch:

Representatives and counsel for RS Access, LLC met with Federal Communications Commission leadership and staff October 2, 2019 to discuss how unleashing 500 megahertz of contiguous mid-band spectrum in the 12.2-12.7 GHz band (“12 GHz band”) for mobile broadband use would accelerate 5G deployment and promote America’s continued leadership in mobile communications.<sup>1</sup> RS Access believes this 500 MHz band is the only spectrum between 6 and 24 GHz that can be harnessed in the foreseeable future to dramatically turbocharge the development of 5G in the United States. RS Access is eager to work with the Commission to advance its goal of bringing the benefits of 5G connectivity to all Americans in both rural and urban areas.

Chairman Pai’s 5G FAST Plan has embarked on an ambitious effort to free mid-band spectrum for mobile broadband, including the Citizens Broadband Radio Service (“CPRS”) and C-band. It has also made several gigahertz of high-band spectrum available for 5G investment and innovation.<sup>2</sup> However, demand for high-capacity mid-band spectrum continues to explode — especially for contiguous blocks to support 100 megahertz or wider channels. Wide channels of 100 megahertz or greater allow operators to realize the full promise of 5G by achieving materially faster speeds and substantially larger capacity that is critical for 5G use cases requiring high throughput and low latency. Other countries are well aware of the importance of large contiguous channels and have

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<sup>1</sup> Meeting participants on behalf of RS Access included V. Noah Campbell of RS Access; Michael Gerstner and Daniel Shuchman of MSD Capital, L.P.; and J. Ryan Thompson and Trey Hanbury of Hogan Lovells US LLP. Meeting participants on behalf of the Commission are appended as Attachment A. A copy of the presentation deck is also appended as Attachment B.

<sup>2</sup> See *The FCC’s 5G FAST Plan*, FCC, <https://bit.ly/2LJcuJF> (last visited Oct. 3, 2019); *Promoting Investment in the 3550-3700 MHz Band*, Report and Order, 33 FCC Rcd 10598 (2018); *Expanding Flexible Use of the 3.7 to 4.2 GHz Band et al.*, Notice of Proposed Rulemaking, 33 FCC Rcd 6915 (2018); *Unlicensed Use of the 6 GHz Band*; *Expanding Flexible Use in Mid-Band Spectrum Between 3.7 and 24 GHz*, Notice of Proposed Rulemaking, 33 FCC Rcd 10496 (2018).

moved quickly to meet the challenge.<sup>3</sup> To keep pace, the United States needs to respond to the rapidly changing marketplace by identifying its own large, contiguous blocks of mid-band spectrum for mobile use.

In the United States, the 12 GHz band is the *only* contiguous block of spectrum between 6 and 24 GHz that can readily support mobile broadband. It is also the *only* frequency below 24 GHz that possesses the large channel bandwidths that wireless operators need to achieve the promise of 5G performance. Such spectrum will be essential to support smart cities, transform industrial sectors, and deliver new performance and capabilities to consumers, small businesses, and enterprise customers. Expanding operational flexibility for incumbent 12 GHz band Multichannel Video Distribution and Data Services (“MVDDS”) licensees can *more than double* the amount of mid-band spectrum currently contemplated to be available for 5G, even including pending auctions of CBRS and C-band frequencies. RS Access believes this expansion can be accomplished without harming other existing incumbent operations that have co-primary status in the band. In its meetings, RS Access urged the Commission to explore how to apply intelligent network management principles, including the use of a Spectrum Access System similar to the structures applied in the CBRS band, to promote intensive terrestrial use of the 12 GHz band.

During discussions with Commission personnel, RS Access explained why the 12 GHz band possesses key characteristics that make it a prime candidate for rapid 5G deployment. The 12 GHz band MVDDS licensees hold 500-megahertz, geographic-area terrestrial licenses across the United States that the Commission assigned through competitive bidding in 2004 and 2005. Unlike other spectrum bands considered for 5G, no federal operations encumber this frequency. The 12 GHz band has significant propagation advantages over higher-frequency, millimeter wave spectrum. And, not least important, the International Telecommunication Union long ago identified the 12 GHz band for primary mobile use in all three regions of the globe.

In its meetings, RS Access explained that as a new operator in the 12 GHz band it has a pipeline of several thousand potential deployment sites and has already activated 300 point-to-multipoint sites that deliver a number of innovative services to underserved academic, commercial, and veterans’ service organizations, many of which are in rural areas.<sup>4</sup> However, it was necessary for RS Access to work within the extremely limiting constraints of existing Commission rules governing the band. These rules date from 2002, practically ancient history in telecommunications. For example, MVDDS base station power limits are approximately one tenth the limit of a standard broadband handset, and licensees may partition their spectrum, but may not disaggregate it.<sup>5</sup> Current rules also only allow one-way, point-to-multipoint transmissions.<sup>6</sup> RS Access’ deployment experience, it

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<sup>3</sup> China, for example, awarded 100 megahertz to each of two operators and 260 megahertz to a third. See Joseph Waring, *China releases 5G spectrum to state-run operators*, Mobile World Live (Dec. 10, 2018), <https://bit.ly/2o677NF>; see also Sean Kinney, *Rounding up 5G spectrum allocations and auctions in China*, RCR Wireless News (Jun. 3, 2019), <https://bit.ly/2pF6wTh>.

<sup>4</sup> RS Access is not a member of the 5G MVDDS Coalition.

<sup>5</sup> See 47 C.F.R. § 101.113 n.11 (imposing an EIRP of 14 dBm per 24 MHz (–16.0 dBW per 24 MHz)); 47 CFR § 101.1415 (prohibiting disaggregation).

<sup>6</sup> See 47 C.F.R. § 101.1407.

informed the Commission, made it appreciate how existing MVDDS rules in the 12 GHz band are outdated, unnecessary and needlessly prevent this vital national resource from enabling national 5G priorities. Modernizing the rules governing these already-existing terrestrial licenses is a golden opportunity to dramatically expand the universe of available 5G spectrum.

In its meetings, RS Access emphasized that it takes seriously the co-primary rights of Direct Broadcast Satellite licensees and the needs of their customers, as well as the desirability of potential future non-geostationary satellite orbit Fixed Satellite Service platforms. Enormous advances in technology coupled with evolving modes of service delivery have created tremendous new possibilities for flexible use of the 12 GHz band for mobile communications while also protecting existing satellite services.

\* \* \*

Given the vital interest of America's leadership in mobile broadband and the immense technological innovation in network operations in recent years, RS Access urged the Commission to consider how to put this critical 5G resource to its highest valued use. The 12 GHz band is 500 megahertz of contiguous mid-band spectrum that is sorely needed for 5G and can help ensure U.S. technological leadership now and in the future. Successful modernization of the 12 GHz band could be the crowning achievement of the Commission's successful 5G spectrum policy.

RS Access looks forward to working with the Commission and all stakeholders on this strategic U.S. priority. Please contact me with any questions.

Respectfully submitted,

/s/ Trey Hanbury

Trey Hanbury

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D 202-637-5534

Attachments

**Attachment A – FCC Meeting Participants**

Office of Chairman Ajit Pai

Aaron Goldberger

Office of Commissioner Michael O’Rielly

Commissioner Michael O’Rielly

Erin McGrath

Office of Commissioner Brendan Carr

Will Adams

Office of Commissioner Jessican Rosenworcel

Umair Javed

Office of Geoffrey Starks

Bill Davenport

Wireless Telecommunications Bureau

Stephen Buenzow (by phone)

Peter Daronco

Madelaine Maior (by phone)

Becky Schwartz

Nancy Zaczek

International Bureau

Sankar Persaud

**Attachment B – Presentation Deck**

# The 12 GHz 5G Opportunity:

*Accelerating Next-Generation  
Broadband Deployment with 500 MHz  
of Mid-Band Spectrum at 12.2-12.7GHz*

*October 2, 2019*

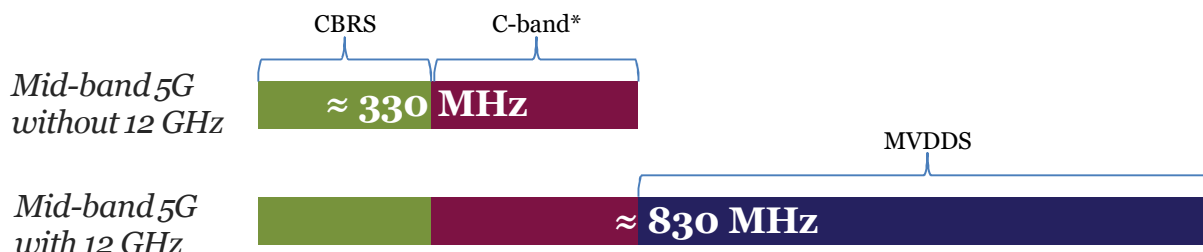


# The 12 GHz opportunity— 500 MHz of contiguous mid-band spectrum

Freeing mid-band spectrum is essential to advancing 5G deployment in the United States.

Mid-band spectrum currently targeted for 5G deployment is necessary but not sufficient.

Granting flexibility to already existing terrestrial geographic-area licenses at **12.2-12.7 GHz** would more than double the nationwide mid-band spectrum newly available for 5G mobile broadband deployment and offer the **only mid-band segment with 100+ megahertz channels**.



\* Assuming the FCC adopts the C-Band Alliance proposal to make 180 MHz available for flexible use.



There is no other spectrum between 6 GHz and 24 GHz that can readily support terrestrial 5G mobile services



## The 12 GHz Basics



Unique set of already existing licensees at 12 GHz awaiting modification.



The 12 GHz band is allocated internationally for multiple uses, including **mobile (primary)**.



The FCC exhaustively licensed the 12.2-12.7 GHz band through **competitive bidding in 2004 and 2005**.



The U.S. **terrestrial fixed licenses are co-primary** with (1) DBS and (2) Non-Geostationary Orbit Fixed Satellite Service (NGSO FSS).



An **April 2016 petition** sought license modifications under Section 316 to permit terrestrial mobile use; the petition received public notice and comment, but no further action has occurred.

## A Golden Opportunity for Mid-Band Spectrum

*The combination of favorable propagation characteristics of the mid-band frequencies (as compared to bands above 24 GHz) and the opportunity for additional channel bandwidth (as compared to bands below 3.7 GHz), could make many of these mid-band frequencies well-suited for next-generation wireless services.*

*– Expanding Flexible Use in Mid-Band Spectrum Between 3.7 GHz and 24 GHz, Notice of Inquiry (Aug. 3, 2017)*



# RS Access Background

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MDS America (MDSA)\* acquired

- 60 licenses in Auction 53 (2004)
  - 20 licenses in Auction 63 (2005)
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RS Access, a newly formed company backed by MSD Capital, entered into a spectrum lease and related asset purchase agreement with MDSA in 2018.

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RS Access has deployed 300 transmit/receive links constructed for Wi-Fi extension, video, and first-responder services at various academic, commercial, veterans' service organizations and community anchor institutions.

*\* No relation to MSD Capital*



## RS Access has made meaningful MVDDS investments and deployments . . .

- Delivering a variety of data- intensive applications
- Operating within current regulatory constraints
- With a diverse set of users, including rural and underserved communities

# MSD Capital Background



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Private investment firm established in 1998

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Capital manager for Michael Dell, his family and affiliated charitable foundation assets

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Investments across the globe in

- Equity (public & private)
- Debt
- Real estate
- Telecommunications
  - Numerous spectrum-related investments
  - Formed OTA Broadcasting (2011)
    - Acquired 20+ TV stations
    - Participated in Auction 1001 (2017)



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MSD Capital formed RS Access, LLC in partnership with V. Noah Campbell in 2018



**MSD Capital and  
MSD Partners manage  
approximately  
\$16 billion and  
employ more than  
115 people\***

\* As of April 30, 2019.

*Forward-thinking spectrum policy, modern infrastructure policy, and market-based network regulation form the heart of our strategy for realizing the promise of the 5G future.*

**– Chairman Pai**

## The 12 GHz band can help deliver the 5G future – FAST

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The 12 GHz mid-band spectrum can offer both capacity and coverage for 5G, and channel bonding this spectrum with CBRS, C-Band and other mid-band frequencies can rapidly enhance planned 5G deployments.

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RS Access is a new entrant who supports bringing new 5G spectrum to market.

- RS Access has aggressively invested in deploying fixed, point-to-multipoint distribution systems throughout its footprint.
  - The rules governing the 12.2-12.7 GHz band have not been revisited since 2002 and urgently require a fresh look given the national priority on U.S. technological leadership in 5G.
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Permitting two-way, mobile uses in the 12 GHz band will deliver vast new mid-band spectrum resources to market.

# The 12 GHz solution: A unique band at a pivotal moment for 5G

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✓ 500 MHz of contiguous mid-band spectrum available for 100+ MHz channelizations for 5G

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✓ Exhaustive geographic licensing

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✓ Significant propagation advantages over mmW frequencies

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✓ Little or no disruption to existing operations

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✓ No federal encumbrances

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✓ MVDDS licensees already possess terrestrial rights awarded through competitive bidding

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✓ Straightforward license modifications

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✓ Few stakeholders

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✓ Existing global mobile allocation and potential for international harmonization\*

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✓ Channel bonding with other mid-band spectrum (e.g., CBRS and C-band) can support and extend 5G network capacity

\* 12.2-12.7 GHz is co-primary mobile in Regions 2 and 3. The 12.2-12.5 GHz band is co-primary mobile in Region 1 and regionally in Region 1 at 12.5-12.7

# Now is the time to more than double the amount of mid-band spectrum available for 5G investment and innovation



## The problem?

- Outdated rules (2002)
- Low power limits (1/10<sup>th</sup> PCS *handset* power)
- Outdated service limitations (fixed, one-way data)



## The solution?

- Smarter, faster coordination
- Up-to-date operating rules and policies
- Flexible-use licenses for two-way, mobile broadband



## What's needed now

- A timely notice and comment rulemaking proceeding to decide the future of the 12 GHz band
  - Does MVDDS offer an opportunity to accelerate access to mid-band spectrum for 5G?
  - Can AI accelerate and simplify inter-service coordination?
  - Does a flexible use licensing scheme ensure that MVDDS licenses are put to their highest valued use? What size license areas would best support 5G operations?
  - How soon would flexibility need to be received to allow for seamless channel bonding between the 12.2-12.7 GHz band and other 5G bands, such as the CBRS and C Band spectrum?

# The FCC can expand 12 GHz flexibility and preserve stakeholders' interests

*RS Access takes seriously the rights held by DBS licensees and the needs of their customers as well as the desirability of NGSO FSS platforms.*



## DBS can continue to operate

- DISH has explained that its DBS systems and two-way, mobile broadband MVDDS can coexist without impairing DBS operations.
- While AT&T has taken a more skeptical view of sharing in prior filings, technical solutions are readily available to identify and protect 12 GHz DBS customers from harmful interference.
  - High-powered MVDDS transmitters (under waiver) in the Albuquerque-Santa Fe DMA have operated without complaint for several years.
  - Small cells, network design, power control and other features offer new options for coexistence.
- DBS operates using Ku-band (12 to 18 GHz) and K-/Ka-band (18 to 40 GHz) frequencies; Ka-band migration further reduces interference concerns.



## NGSO FSS can continue to operate

- No NGSO FSS licensees are operational and many may never be\*
- NGSO FSS licensees have roughly five gigahertz of spectrum licensed to them
  - OneWeb – 5.4 GHz
  - Theia – 8.7 GHz
  - Kepler – 4.75 GHz
  - SpaceX – 5.55 GHz
  - Karousel – 6.5 GHz
  - Space Norway – 5 GHz
- NGSO FSS licensees have been placed on notice that their authorizations at 12.2-12.7 GHz are subject to modification by FCC rules and policies.

\* The term “licensees” is used here broadly to include foreign-licensed NGSO FSS systems that have received market-access grants from the FCC.

## National priorities and industry developments have accelerated the pace of change

- Multi-element, dynamic beam-forming antennas, channel bonding and other technologies have now made higher frequency communications technically and economically feasible.
- Spectrum in the 12.2-12.7 GHz band can now support small cells, wide-area networks, and next-generation services.
- AT&T is focused on “thin-client” distribution of video, not legacy DBS.
- Video distribution has increasingly moved to over-the-top delivery, and demand for bundled and standalone OTT video has exploded.
- The 12.2-12.7 GHz band needs a fresh look now.



*We've launched our last satellite.*

– AT&T

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*We're calling it a thin client solution, but it's a satellite replacement product. And it is broadband-driven. And the lion's share of our video over the next couple of years will be this thin client.*

– AT&T



## Summary: 12 GHz offers a one-of-a-kind resource to accelerate 5G investment and deployment

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The 12.2-12.7 GHz band offers 500 MHz of mid-band spectrum that is ideal for 5G operations.

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MVDDS licensees have exhaustively licensed terrestrial rights acquired through competitive bidding that enable streamlined reform under Section 316 of the Communications Act.

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Reform is achievable, not complicated, serves an enormous public interest benefit, and promotes FCC goals.

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Mobile broadband in 12.2-12.7GHz is not an either-or decision among terrestrial, DBS and NGSO FSS licensees.



**Inaction is a decision to forego a vital new 5G mid-band spectrum resource**

## Appendix 1: Historical MVDDS Timeline

Mid-1990s	1999	2002	2004-2005
MDSi Hypercable developed an MVDDS technology. A competitor, Northpoint Technology, Ltd., developed its own MVDDS technology.	Northpoint filed in a satellite processing round to secure rights to 12 GHz band spectrum.	Following a technical study, the FCC adopted service rules for co-primary, one-way, point-to-multipoint operations at 12.2-12.7 GHz called MVDDS.	The FCC auctioned terrestrial MVDDS geographic-area licenses in January 2004 (Auction 53) and in December 2005 (Auction 63).

# Appendix 2: International and Domestic Table of Frequency Allocations

Table of Frequency Allocations			12.2-15.4 GHz (SHF)		Page 49
International Table			United States Table		FCC Rule Part(s)
Region 1 Table	Region 2 Table	Region 3 Table	Federal Table	Non-Federal Table	
(See previous page)	12.2-12.7 FIXED MOBILE except aeronautical mobile BROADCASTING BROADCASTING-SATELLITE 5.492	12.2-12.5 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile BROADCASTING 5.484A 5.487	12.2-12.75	12.2-12.7 FIXED BROADCASTING-SATELLITE	Satellite Communications (25) Fixed Microwave (101)
12.5-12.75 FIXED-SATELLITE (space-to-Earth) 5.484A (Earth-to-space)	5.487A 5.488 5.490 12.7-12.75 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE except aeronautical mobile	12.5-12.75 FIXED FIXED-SATELLITE (space-to-Earth) 5.484A MOBILE except aeronautical mobile BROADCASTING-SATELLITE 5.493		5.487A 5.488 5.490 12.7-12.75 FIXED NG118 FIXED-SATELLITE (Earth-to-space) MOBILE	TV Broadcast Auxiliary (74F) Cable TV Relay (78) Fixed Microwave (101)
5.494 5.495 5.496 12.75-13.25			12.75-13.25	12.75-13.25	

## Appendix 3: Overview of Current Stakeholders in 12.2-12.7 GHz

	DBS	MVDDS	NGSO FSS
<b>Operators</b>	DirecTV (AT&T) DISH	RS Access DISH Network Others	While there are no current commercial operations, OneWeb and SpaceX, among others, have stated they intend to deploy in future.
<b>Status</b>	Supports DBS, along with 17/24 GHz BSS “reverse” band, which is allocated for the provision of video programming, as well as frequency bands allocated for Ka-band GSO FSS (18.3-18.8/19.7-20.2 GHz downlink; 28.35-28.6/29.25-30.0 GHz uplink).	Licensees initially acquired spectrum at auction and have since used it to deploy P2MP terrestrial services. They uniformly support reform.	NGSO FSS licensees have been placed on notice that their operations remain contingent on the outcome of potential modifications to the scope of MVDDS operations in the 12.2-12.7 GHz band.