EXHIBIT A:

MODIFICATION OF THE LOGOS NETWORK

TECHNICAL ANNEX TO SUPPLEMENT SCHEDULE S

LOGOS SPACE SERVICES, INC.

A. SCOPE AND PURPOSE

This Technical Annex accompanies Logos Space Services, Inc.'s ("Logos") application to modify its authorization to launch and operate a non-geostationary orbit ("NGSO") Fixed Satellite Service ("FSS") network consisting of 4,178 satellites (the "Logos Network").[1] Logos seeks Federal Communications Commission ("FCC" or "Commission") authority to add downlink operations in the 17.3-17.8 GHz band ("17 GHz band").

This Technical Annex contains the information required by section 25.117 and other relevant provisions of the Commission's Part 25 rules that cannot be fully captured by the Schedule S software. Except as described herein, all other technical aspects of the Logos Network remain unchanged and are incorporated herein by reference.[2]

B. GENERAL DESCRIPTION

B-1 Frequency and Polarization Plan

Logos plans to use the 17 GHz band for service downlinks to customer terminals when Q-band space-to-Earth communications are not practical due to high levels of rain attenuation. The Logos Network's spectrum usage plan for the 17 GHz band is detailed below in Table 1.

Frequency	Direction	Polarization	Use
17.3-17.8 GHz	space-to-Earth	RHCP, LHCP	Service

Table 1: Frequency and Polarization Plan

The Logos Network beams are fully steerable, enabling dynamic targeting based on demand or operational requirements.[3] The downlink beams support both RHCP and LHCP; however, Logos may utilize only one polarization (i.e., RHCP or LHCP) depending on operational requirements. This network design enhances the system's flexibility and adaptability in different environments and operational scenarios, allowing for optimized signal quality and interference mitigation.

The channel plan for the Logos Network is provided in Attachment C to this Technical Annex.

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[1] *See Logos Space Services, Inc., Application to Construct, Launch, and Operate a Non-Geostationary Orbit System in the Fixed-Satellite Service*, Stamp Grant, ICFS File Nos. SAT-LOA-20241030-00243 & SAT-AMD-20250328-00084 (Jan. 30, 2026) ("Logos Grant").

[2] *Id. See* Logos Space Services, Inc., Application to Construct, Launch, and Operate a Non-Geostationary Orbit System in the Fixed-Satellite Service, ICFS File No. SAT-LOA-20241030-00243 (filed Oct. 30, 2024) ("Logos Application"); Logos Space Services, Inc., Amendment to Pending Application to Construct, Launch, and Operate a Non-Geostationary Orbit System in the Fixed-Satellite Service, ICFS File No. SAT-AMD-20250328-00084 (filed Mar. 28, 2025) ("Logos Amendment" and together with the Logos Application, the "Logos Initial Application").

[3] See Attachment A and Attachment B hereto for the antenna gain patterns and contours. 47 C.F.R. §§ 25.114(c)(4)(vi)(B)-(C).

B-2 Ground Segment

The Logos ground segment for service downlinks is currently comprised of Ka- and Q/V-band enterprise customer terminals. Through this Modification, Logos seeks to add downlinks in the 17 GHz band to its system architecture. As described in the Logos Initial Application, the Logos software defined network ("SDN") controller will administer the service ecosystem, from authorizing network admission to assigning specific frequency channels for purposes of mitigating interference and adhering to coordination agreements.

B-3 Frequency Tolerance

The frequency tolerance requirements of 47 C.F.R. § 25.202(e) will be met.

B-4 Out-of-Band Emissions

The out-of-band emission limits of 47 C.F.R. § 25.202(f)(l)-(3) will be met.

B-5 Frequency Reuse

The Logos Network employs full frequency reuse for all of its service beams.[4] As described in Section B-1 above, the Logos Network utilizes multiple, steerable, co-frequency spot beams and may also employ dual orthogonal circular polarization (LHCP and RHCP) across its downlink beams to achieve efficient and complete spectrum reuse.

B-6 Cessation of Emissions

All downlink transmissions can be turned on and off by ground station telecommand to cease satellite emissions, as 47 C.F.R. § 25.207 requires.

C. SPECTRUM SHARING

C-1 Sharing with Terrestrial Fixed Service Systems

Section 25.146(a)(1)(ii) of the Commission's rules requires NGSO FSS emissions in the 17 GHz band to comply with the PFD limits set forth in Article 21, Section V, Table 21-4 of the ITU Radio regulations for the 17.7-17.8 GHz band.[5] The PFD limit in this band is driven by the maximum number of visible satellites, Nv. Logos's coverage analysis determined Nv to be 305, thus, the PFD floor is -139.8 dBW/m^2/MHz per the equations in ITU 21.16.6. Figure 1 below

[4] *See* 47 C.F.R. § 25.210(f) (requiring full frequency reuse for the 17.3-17.8 GHz band, among others).

[5] 47 C.F.R. § 25.146(a)(1)(ii); *see also* Amendment *of Parts 2 and 25 of the Commission's Rules to Enable NGSO Fixed-Satellite Service (Space-to-Earth) Operations in the 17.3-17.8 GHz Band*, Report and Order, IB Docket No. 22-273, FCC 24-97, ¶ 33 (Sept. 27, 2024) ("17 GHz NGSO Order").

demonstrates that the Logos Network PFD levels will comply with these Article 21 PFD limits. The downlinks in the 17.3-17.8 GHz band will have a maximum EIRP of 49.7 dBW and the ability to reduce the EIRP down to 29.7 dBW to assure PFD compliance at all orbit altitudes and elevation angles, assuming an emission bandwidth of 500 MHz. This downlink PFD analysis assumes constant PFD by adjusting the EIRP vs. scan angle to account for spreading loss.

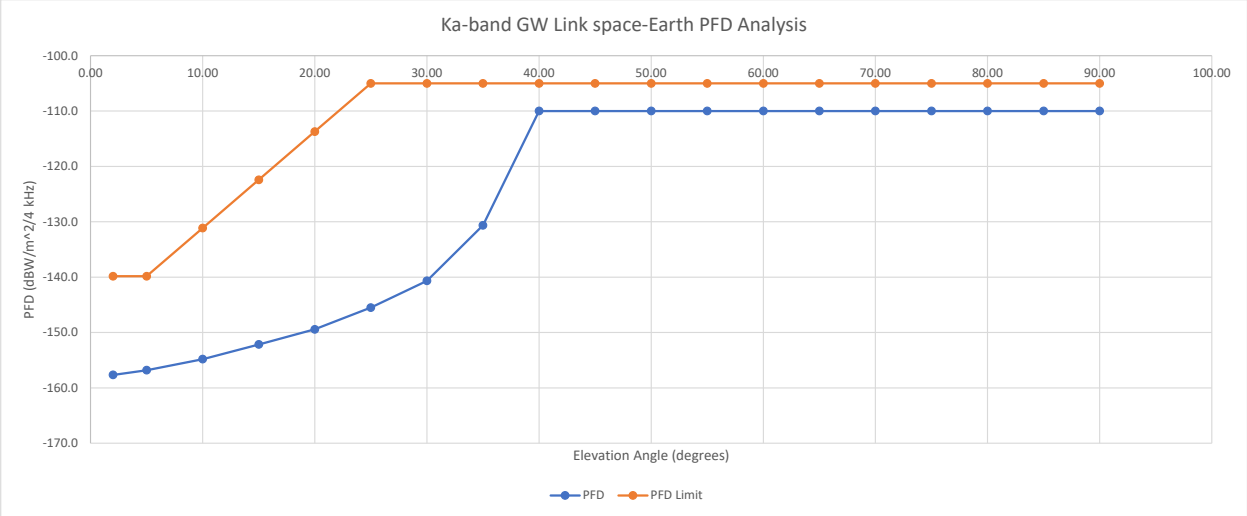

Figure 1: Logos Network Satellite Downlink PFD Levels in the 17.3-17.8 GHz Band

C-2 Sharing with Geostationary Orbit Fixed-Satellite Service and Broadcasting-Satellite Service Systems

Sections 25.146(a)(2) and 25.289 of the Commission's rules require 17 GHz NGSO FSS applicants to comply with the ITU equivalent power flux-density ("EPFD") limits applicable to NGSO FSS system operations in the 17.8-18.4 GHz band, as set forth in Article 22, Section II of the ITU Radio Regulations.[6] The Logos Network's 17 GHz downlinks will comply with these EPFD limits.[7]

Logos will use a variety of methods to satisfy the ITU EPFD limits for the 17 GHz band, including by: (1) ensuring all downlink transmissions avoid the GSO arc by a minimum GSO avoidance angle necessary to meet these requirements; (2) limiting the number of satellites transmitting to earth station areas simultaneously on the same frequency and channel; (3) using space station antennas with narrow beamwidths; and (4) limiting the EIRP of Logos downlinks.

[6] *See* 47 C.F.R. §§ 25.146(a)(2), 25.289. Logos notes that the Commission's EPFD limits for the 17 GHz band are subject to a pending Notice of Proposed Rulemaking. *See Modernizing Spectrum Sharing for Satellite Broadband*, SB Docket No. 25-157, FCC 25-23 (Apr. 29, 2025). While the Logos Network will satisfy the current EPFD limits as set forth in the Commission's existing rules, Logos also requests authority to bring its 17 GHz operations into conformance with the outcome of any Commission or international proceeding to update the EPFD rules in the downlink in the United States upon adoption of those new limits.

[7] *See* 47 C.F.R. 25.289 ("An NGSO FSS licensee operating in compliance with the applicable equivalent power flux-density limits in Article 22, Section II of the ITU Radio Regulations (incorporated by reference, § 25.108) will be considered as having fulfilled this obligation with respect to any GSO network.").

Logos has conducted preliminary EPFD analysis, using a GSO avoidance angle (alpha) of 17 degrees and a single frequency reuse to/from each location on the Earth's surface (e.g. Nco of 1). The ITU EPFD software does not currently have the ability to analyze EPFD in the 17.3-17.8 GHz band, so the EPFD inputs were updated to reflect operation in the 17.8-18.4 GHz band. While it is possible that the ITU EPFD simulation requirements might differ slightly between the bands, Logos conducted its EPFD analysis using this methodology to ensure its calculations reflect the best available outcome under current limitations. The results of those calculations are set forth in Figures 2 through 6 below. In all cases, the Logos Network satisfies the applicable EPFD limit.

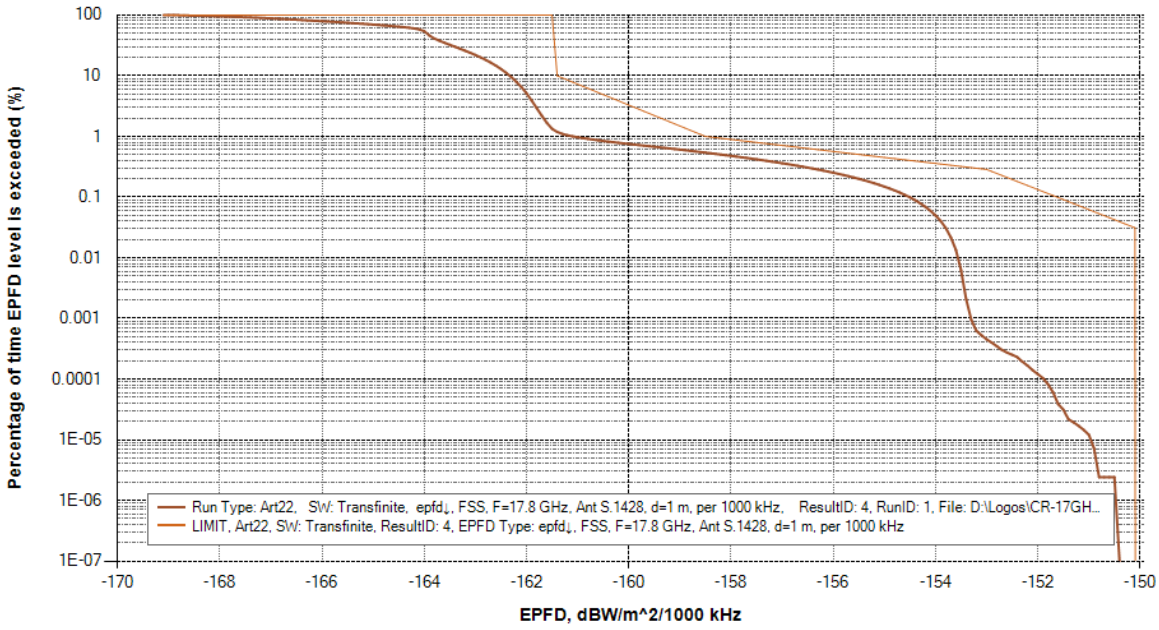

Figure 2: Ka-Lower space-Earth EPFD Analysis - 1.0m Victim GSO Earth Station

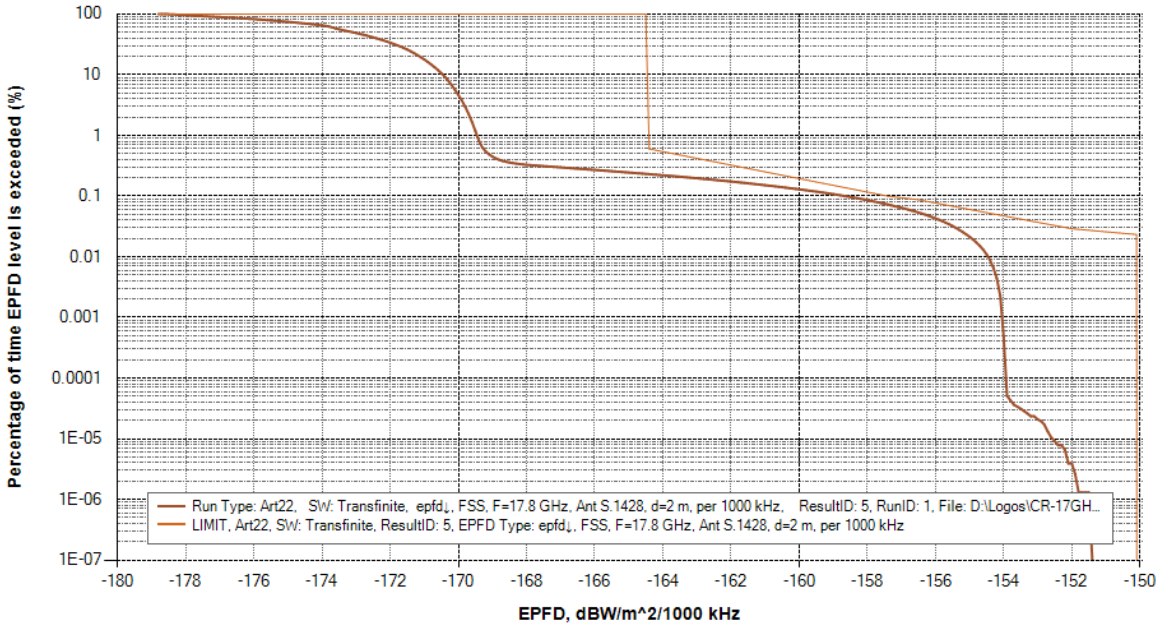

Figure 3: Ka-Lower space-Earth EPFD Analysis - 2.0m Victim GSO Earth Station

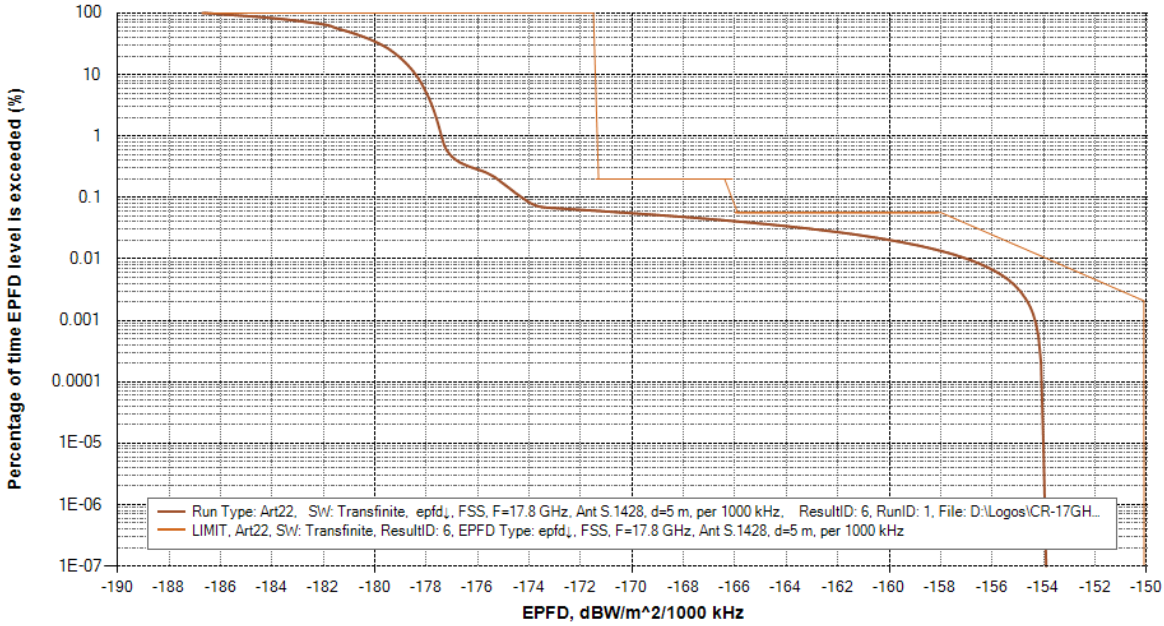

Figure 4: Ka-Lower space-Earth EPFD Analysis - 5.0m Victim GSO Earth Station

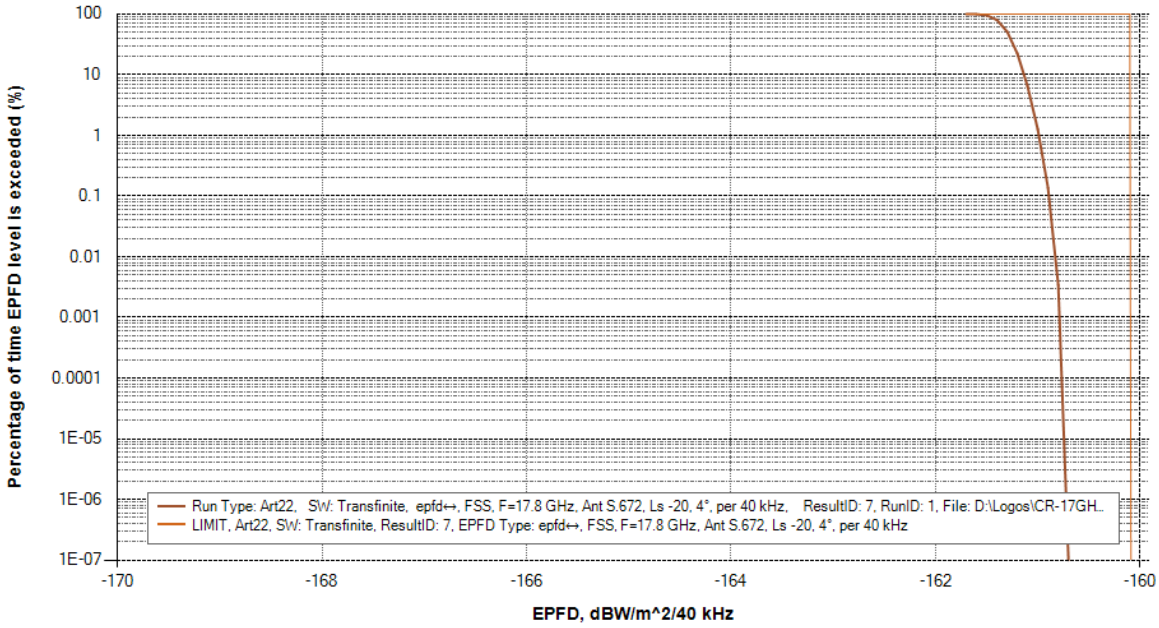

Figure 5: Ka-Lower Inter-satellite EPFD Analysis

Logos also conducted coverage analysis, accounting for the 17-degree alpha angle to confirm that it can still provide a minimum of 4-satellite coverage for latitudes between 60S and 60N, as set forth below.

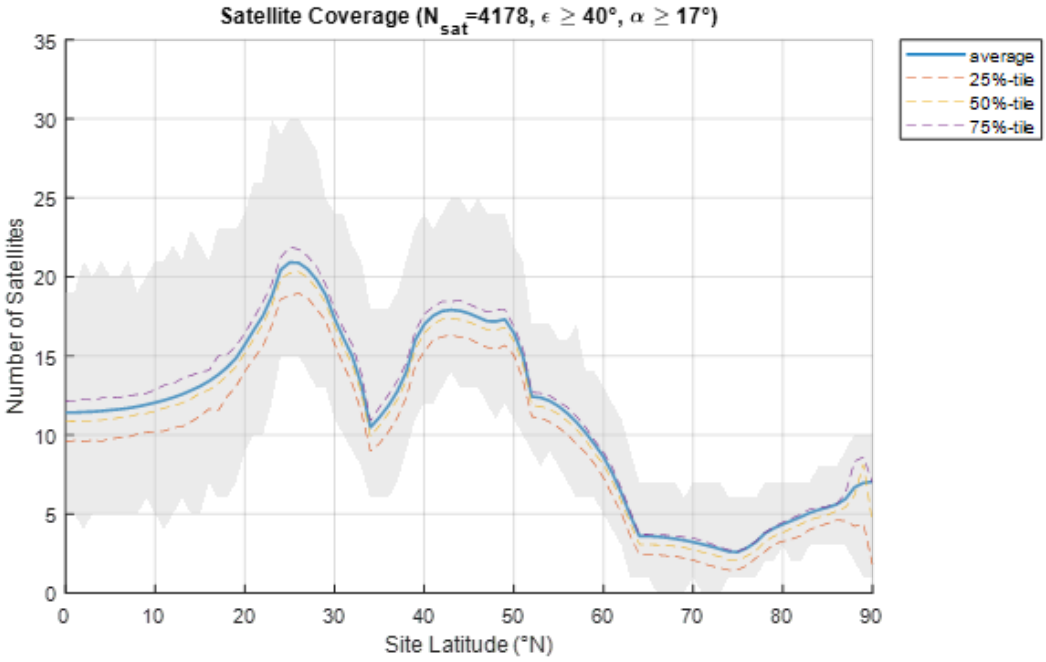

Figure 6: Coverage Analysis Accounting for 17-degree GSO Arc Avoidance

C-3 Sharing and Co-Existing with Co-Frequency NGSO Systems

At present, one operator has been authorized to provide NGSO FSS downlinks in the 17 GHz band.[8] Logos confirms that it will coordinate in good faith with SpaceX and any other authorized NGSO FSS operators utilizing frequencies that overlap with those outlined in this Modification in accordance with ITU procedures and Section 25.261(b) of the Commission's rules.[9] Indeed, Logos has engineered its system with the technical flexibility to facilitate coordination with other NGSO satellite systems. Logos is committed to achieving mutually satisfactory agreements with all other operators of 17 GHz NGSO satellite systems, pursuant to these regulatory procedures, to the extent applicable.

The Logos Network design employs sufficient techniques to facilitate frequency sharing between co-frequency systems, including:

- Narrow pencil-beam technology
- Satellite diversity
- Planned and coordinated beam coverages
- Multi-bandwidth and multi-channel capabilities
- Fine-grained raster support
- SDN

Utilizing each of these techniques individually and in combination, the Logos Network can mitigate and avoid in-line interference events with other co-frequency systems, either in support of or in the absence of a coordination agreement. In the absence of a coordination agreement, the SDN-based orchestration plays a central role to ensure other co-frequency users do not experience harmful interference as a result of the Logos Network. The SDN, in combination with a detailed SINR and rise-over-thermal measurement framework, will be continuously monitored and reported across all satellite and terminal receivers to ensure compliance with Section 25.261 sharing obligations.

The Logos Network will have at least four satellites in view within a 45-degree operational cone at all times across the covered latitudes. This density of satellite coverage both facilitates coordination with other co-frequency NGSO systems and enables the use of algorithms to minimize the risk of interference by selecting an alternate satellite in view when necessary to avoid a harmful in-line event.

Figure 7 and Figure 8 below illustrate the Logos Network's performance, showing the average number of satellites visible at each latitude and the probability of having four or more satellites within the 45-degree cone for the M-shells (M-1 through M-4). This satellite diversity and spatial

[8] *See Space Exploration Holdings, LLC, Request for Deployment and Operating Authority for the SpaceX Gen2 NGSO Satellite System*, Authorization and Order, DA 26-36 (Jan. 9, 2026) ("SpaceX 17 GHz Grant").

[9] *See* 47 C.F.R. § 25.261(b).

distribution provide significant routing options for the Logos Network to avoid in-line harmful interference events without impacting service to customers.

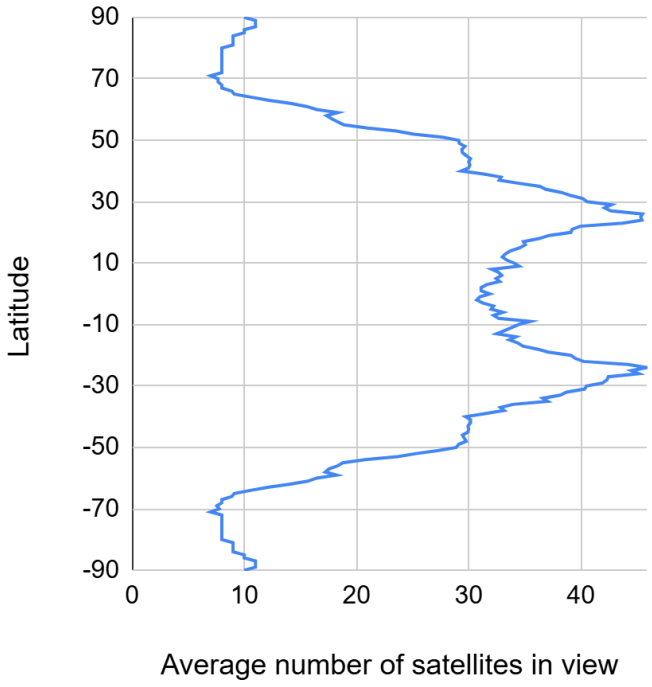

Figure 7: Average Number of Satellites in View by Latitude

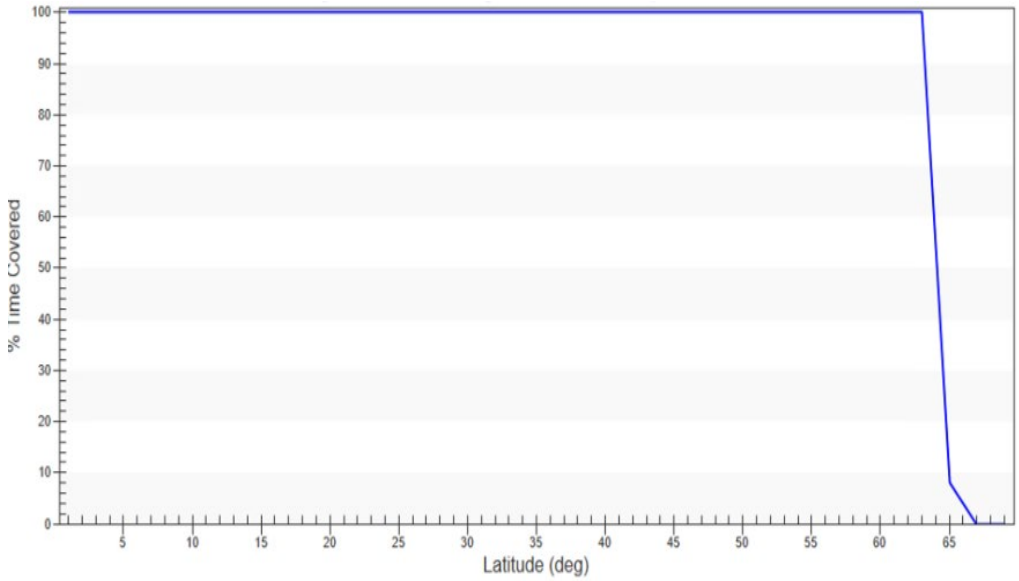

Figure 8: Probability of 4-Satellite Coverage by Latitude

Moreover, as detailed in the Schedule S and Attachment B below, the Logos Network has flexible channel bandwidth options combined with highly-detailed channel rasterization. Where a satellite beam is aligned with a beam of another co-frequency system, the Logos Network uses dynamic

channelization to reassign channels to one or more customer terminals, thereby mitigating or resolving the potential in-line event while maintaining coverage and service availability for its customers.

Additional factors specific to the Logos Network—such as satellite power duty cycles, frequency planning, beam sizes, beam sparsity, and service coverage areas—provide the SDN controller further flexibility to exploit available channel and satellite diversity to resolve and mitigate in-line interference events. Logos estimates that the probability of any given satellite needing to use all of its resources to meet availability, reliability, and other service-level agreement metrics is less than 1% in any coverage area. The likelihood of an in-line interference event occurring at the same time that a satellite has limited operational flexibility is statistically minimal.

Significantly, most issues identified herein can be effectively managed through information sharing between systems, leading to optimal network performance for both networks. Logos reiterates its commitment to collaborating with co-frequency NGSO FSS systems through good faith coordination and information exchange to ensure compatible operations and optimized and efficient use of spectrum resources.

C-4 NGSO-NGSO Sharing Studies

This section provides preliminary sharing studies between the Logos Network and the Kuiper and SpaceX systems, both of which have also filed to operate in the 17.3-17.8 GHz band.[10] Logos presents the following analysis to demonstrate that the Logos Network's operations in the 17 GHz band will be compatible with the planned operations of both Kuiper and SpaceX, and other future NGSO FSS operators in this band.

Constellation	**Number of Satellites**
SPACEX – Gen 1	4,408
SPACEX – Gen 2[11]	7,500
SPACEX – Gen 2-Requested	29,988
Kuiper – Gen 1	3,232
Kuiper – Gen1 + Gen2 + Polar	7,736

[10] To date, the FCC has granted the SpaceX request for authority to operate in the 17 GHz band. *See generally* SpaceX 17 GHz Grant.

[11] Logos is aware that SpaceX was recently granted authority for an additional tranche of 7,500 satellites for its Gen2 constellation, increasing its total authorized Gen2 satellites to 15,000. *See generally* SpaceX 17 GHz Grant. While Logos has performed analysis referencing the original 7,500-satellite configuration, Logos has also conducted analysis for the full 29,988-satellite constellation proposed by SpaceX. The 7,5000 satellite configuration analysis is representative and sufficient for technical evaluation as the full-constellation modeling confirms that Logos's operations in the 17 GHz band are compatible with the SpaceX systems.

Table 2: SpaceX and Kuiper Constellation Characteristics

Logos has analyzed the C/N vs. C/N+I statistics from its network into the SpaceX and Amazon Kuiper NGSO networks using representative links in the space-Earth direction. Logos performed its spectrum sharing simulations using a few key assumptions. First, Logos did not implement in line interference avoidance mechanisms; Logos clarifies, however, that such interference avoidance procedures may be considered during any future coordination discussions between operators. Second, out of an abundance of caution, Logos performed its analysis from the perspective of an NGSO FSS operator seeking entry to the 17 GHz band in a later processing round. Logos applied this hypothetical methodology to demonstrate that the Logos Network can appropriately share the 17 GHz spectrum even under the most restrictive circumstances. Logos reiterates, however, that the Commission need not and should not conduct processing rounds to authorize NGSO FSS operations in the 17 GHz band but instead should authorize applications as soon as they are ripe for grant. This approach is consistent with the FCC's recent grant of 17 GHz band authority to SpaceX.[12]

Figures 9 through 13 below illustrate the C/N and C/N+I CDF curves for interference into the SpaceX networks (Gen-1, Gen-2-Granted, and Gen-2-Requested) and the Kuiper networks (Gen-1, and Gen-1 + Gen-2 + Polar), respectively. Washington, DC was selected as the reference location for collocated Logos and Kuiper/SpaceX earths stations because it is representative of the service areas in the United States and also reflects a latitude where all of the simulated NGSO systems provide significant multiple satellite coverage.

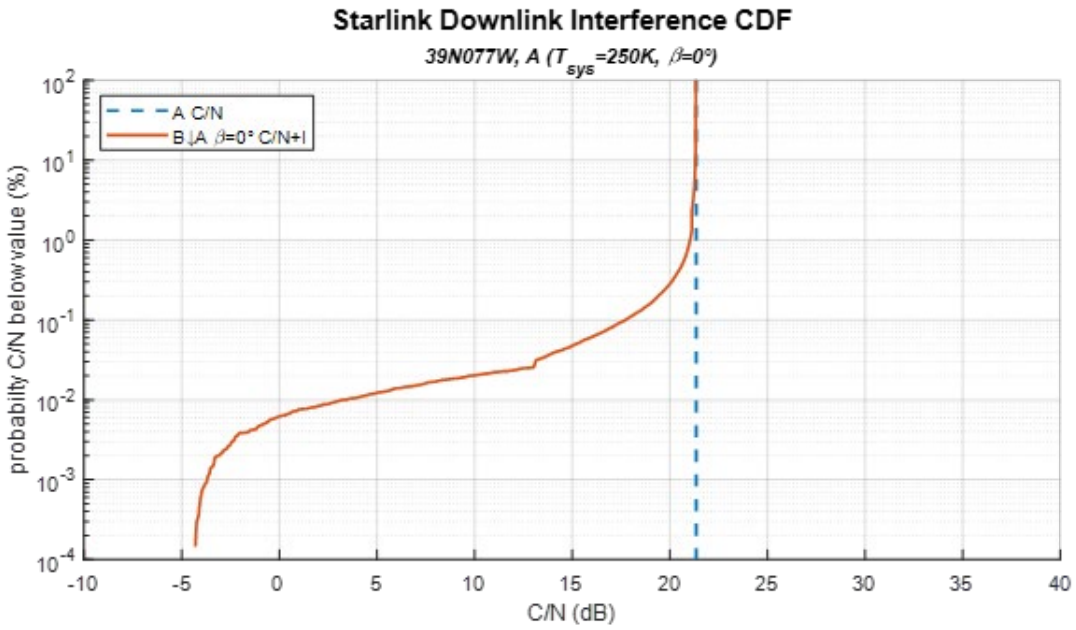

Figure 9: Logos Downlink Interference CDF Into SpaceX Gen-1

[12] *Id.* ¶ 13.

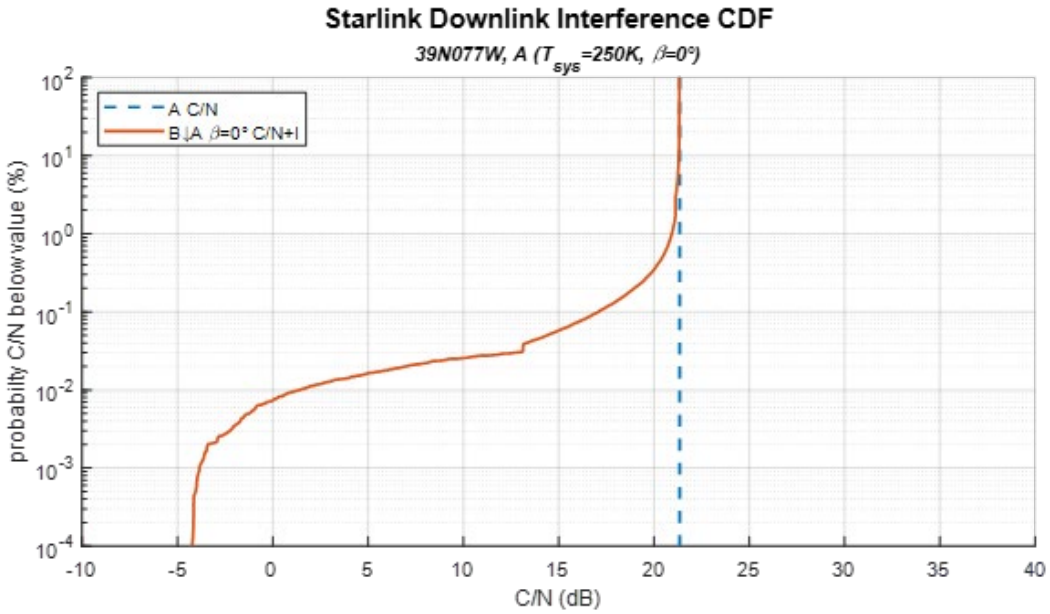

Figure 10: Logos Downlink Interference CDF Into SpaceX Gen-2-Granted

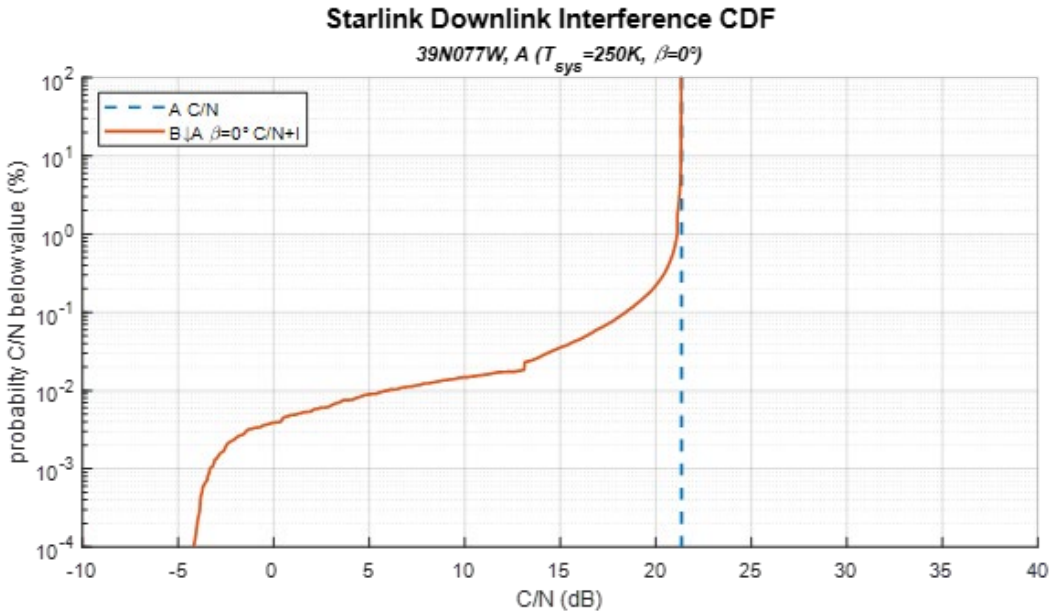

Figure 11: Logos Downlink Interference CDF Into SpaceX Gen-2-Requested

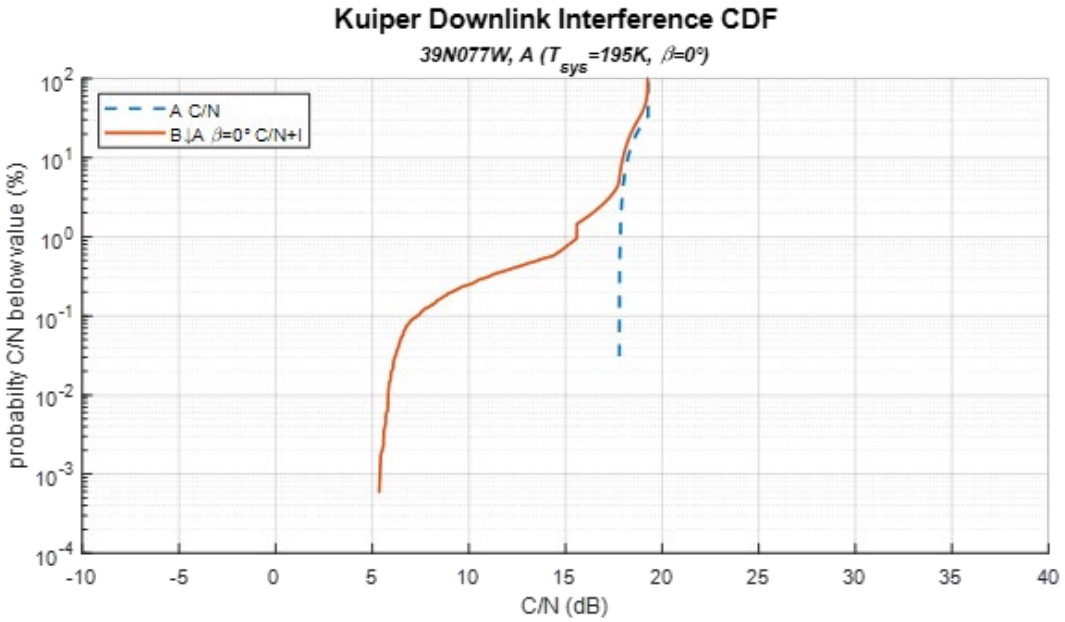

Figure 12: Logos Downlink Interference CDF Into Amazon Kuiper Gen-1

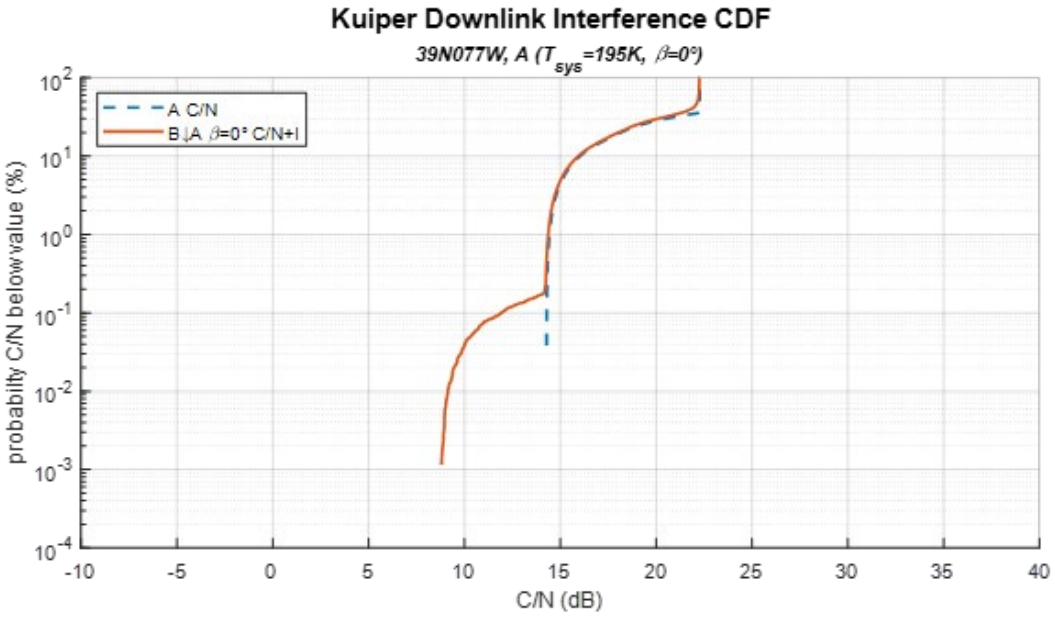

Figure 13: Logos Downlink Interference CDF Into Amazon Kuiper Gen-1 + Gen-2 + Polar

Degraded Throughput and Unavailability Increase Results

As illustrated by these C/N+I curves, even without inline interference event avoidance, the C/N+I is degraded a maximum of ~4 dB on downlink 99.9% of the time when sharing with SpaceX. Furthermore, these degradations are effectively non-existent 99% of the time.

The downlink C/N+I curves show higher degradations when sharing with Amazon Kuiper. However, integration of the C/N vs. C/N+I curves demonstrates that the throughput degradations are well below 1.5% and the availability reduction is insignificant, even with no avoidance angle.

Logos contends that no inline interference avoidance is necessary to provide sufficient protection from both the perspective of degraded throughput and link availability reduction.

In clear sky conditions, the C/N+I curves demonstrate that, when sharing with SpaceX, these reference links are lost less than 0.01% of the time due to external interference. Further, when sharing with Kuiper, the C/N+I curves should never be lost due to external interference.

A summary of the analysis is included below in Table 3. As can easily be seen in the C/N vs C/N+I curves above, the cross-over point when the C/N+I drops below 0 dB is less than 0.01% in all cases. The protection criteria in Section 25.261(d)(1)(ii) suggests that this unavailability increase cannot exceed 0.4%. Logos's analysis herein clearly demonstrates the Logos Network will not approach this limit. The degraded throughput protection criteria, defined in Section 25.261(d)(1)(i) of the Commission's rules, states that the time-weighted average degraded throughput cannot exceed 3%. The C/N+I curves above, barely deviate from the C/N curve (without Logos interference) at the 1% time threshold for the three SpaceX simulations. Accordingly, the throughput degradation was calculated to be less than 1%. For the case of spectrum sharing with Amazon Gen-1 network, the C/N+I 1% of the time reduces from ~18 to ~16.5 or ~1.5 dB reduction. Based upon the DVBS2X MODCOD tables, this would translate to ~10% reduction in throughput for 1% of the time. However, when this degradation is integrated over the entire C/N+I CDF, the aggregate throughput reduction was estimated to be 1.4%. This is still safely below the 3% allocation in the protection criteria. When sharing with the recently expanded Kuiper Gen-1 + Gen-2 + Polar constellation, the curve is more similar to the SpaceX sharing curve, showing degradation less than 1% of the time. As a result, the degraded throughput when integrated over the entire C/N+I CDF is less than 0.9%.

Victim NGSO Network Link	Degraded Throughput No Avoidance	Unavailability Increase No Avoidance
Logos Downlink Into SpaceX GEN1	< 0.3%	< 0.01%
Logos Downlink Into SpaceX GEN2-Granted	< 0.3%	< 0.01%
Logos Downlink Into SpaceX GEN2-Requested	< 0.25%	< 0.01%
Logos Downlink Into Amazon Kuiper Gen-1	< 1.4%	< 0.01%
Logos Downlink Into Amazon Kuiper (Gen-1 + Gen-2 + Polar)	< 0.9%	< 0.01%

Table 3: Degraded Throughput and Unavailability Results

C-5 Co-Existence with Government Systems

The U.S. Table of Frequency Allocations allocates the 17.3-17.7 GHz band to the Radiolocation service for Federal users on a secondary basis. By utilizing highly-focused, pencil-like beams with extremely narrow beamwidths and low sidelobe levels, the Logos Network's design will assure compatibility and co-frequency coexistence between the Logos Network and Federal systems.

Logos commits to coordinating with U.S. government operators in the 17 GHz band, as needed, and is confident that the technical characteristics and operational concepts of the Logos Network

will allow successful coordination with all U.S. government operations. Logos will notify the Commission upon completion of coordination with the U.S. government.

ENGINEERING CERTIFICATION

I hereby certify that I am the technically qualified person responsible for preparation of the engineering information contained in this Modification, that I am familiar with Part 25 of the Commission's rules, that I have either prepared or reviewed the engineering information submitted in this Modification, and that it is complete and accurate to the best of my knowledge and belief.

/s/ Ramakrishna Akella
Ramakrishna Akella
VP of Engineering
Logos Space Services, Inc.

February 5, 2026

ATTACHMENT A: ANTENNA GAIN PATTERNS

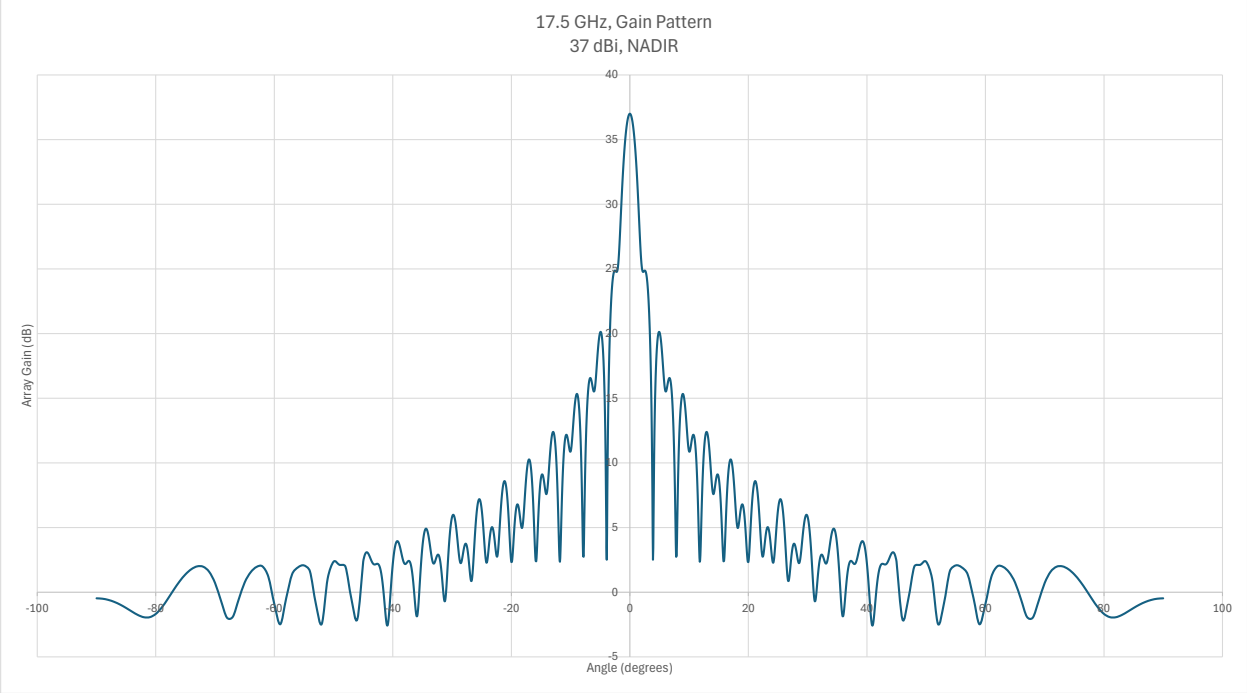

Figure 13: LD1L/LD1R Antenna Pattern

ATTACHMENT B: ANTENNA GAIN CONTOURS

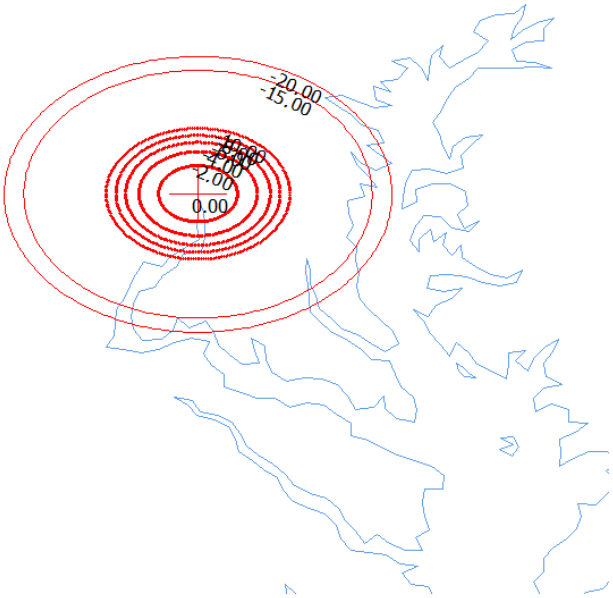

Figure 14: LD1R Antenna Beam Projection over District of Columbia, USA

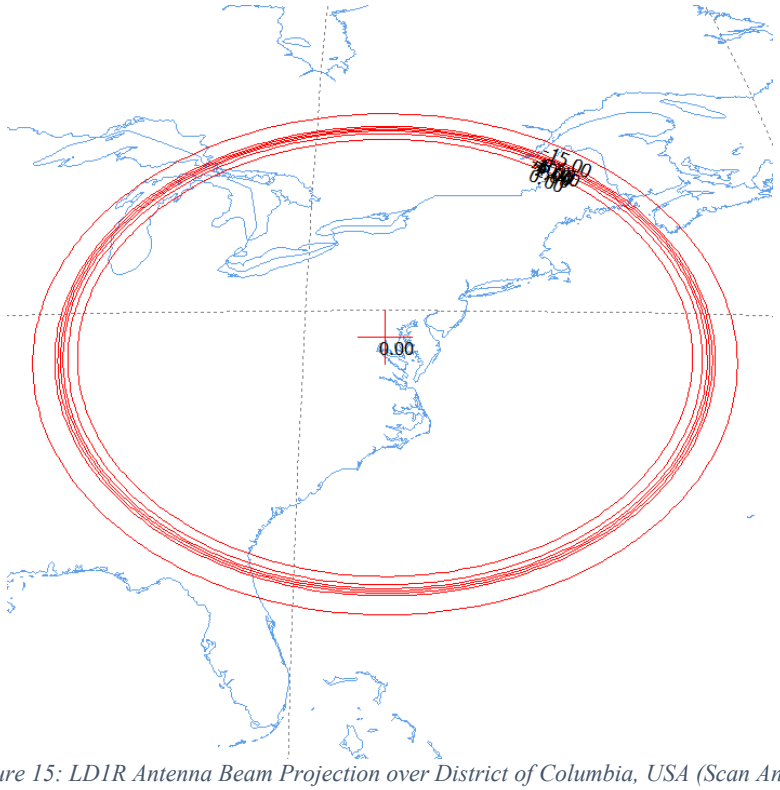

Figure 15: LD1R Antenna Beam Projection over District of Columbia, USA (Scan Angle)

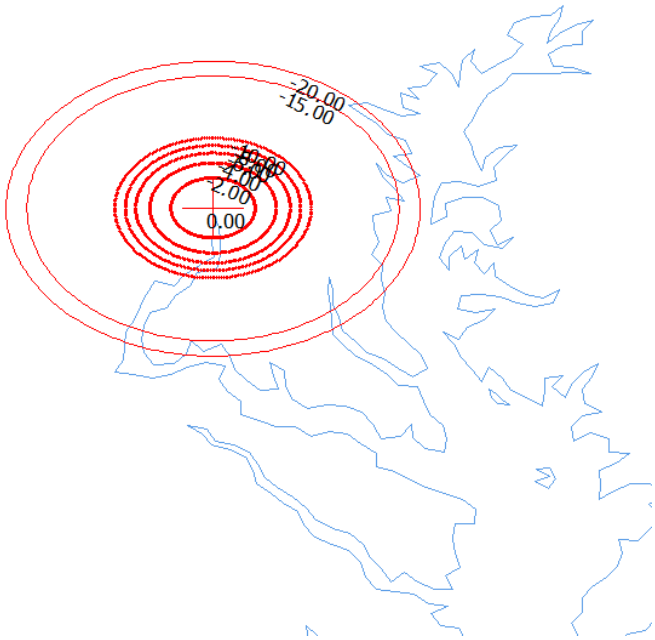

Figure 16: LD1L Antenna Beam Projection over District of Columbia, USA

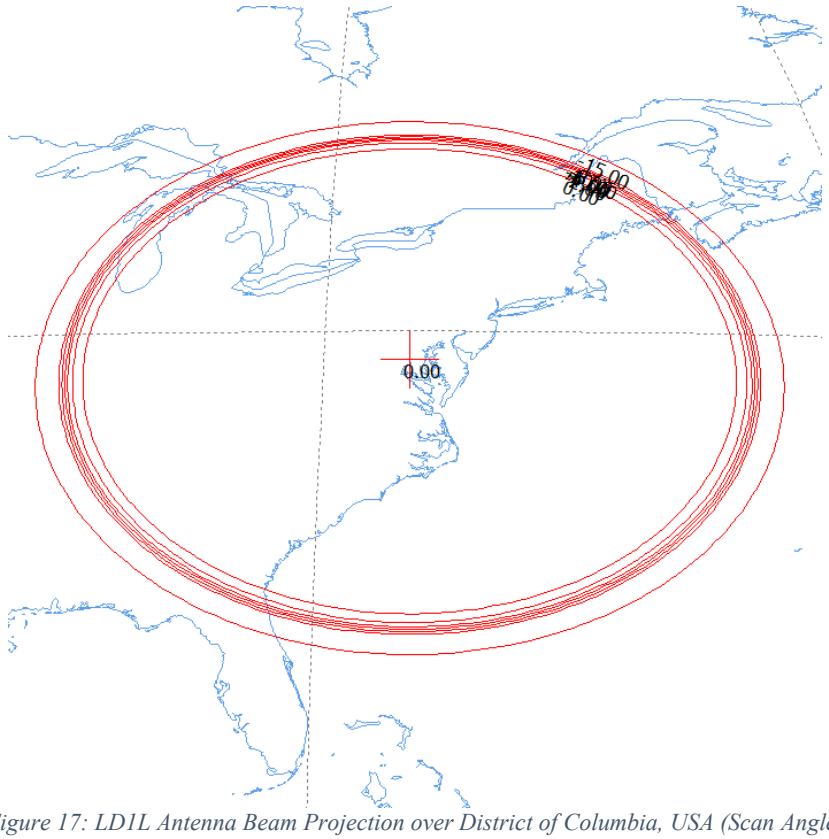

Figure 17: LD1L Antenna Beam Projection over District of Columbia, USA (Scan Angle)

ATTACHMENT C: CHANNELS FOR SCHEDULE S

TX Channel ID	TX Channel BW (MHz)	Center Frequency (MHz)	Link Type	TX Channel ID	TX Channel BW (MHz)	Center Frequency (MHz)	Link Type	TX Channel ID	TX Channel BW (MHz)	Center Frequency (MHz)	Link Type
A001	500	17550	Service	A035	80	17440	Service	A068	40	17640	Service
A002	320	17460	Service	A036	80	17460	Service	A069	40	17660	Service
A003	320	17480	Service	A037	80	17480	Service	A070	40	17680	Service
A004	320	17500	Service	A038	80	17500	Service	A071	40	17700	Service
A005	320	17520	Service	A039	80	17520	Service	A072	40	17720	Service
A006	320	17540	Service	A040	80	17540	Service	A073	40	17740	Service
A007	320	17560	Service	A041	80	17560	Service	A074	40	17760	Service
A008	320	17580	Service	A042	80	17580	Service	A075	40	17780	Service
A009	320	17600	Service	A043	80	17600	Service	A076	20	17310	Service
A010	320	17620	Service	A044	80	17620	Service	A077	20	17330	Service
A011	320	17640	Service	A045	80	17640	Service	A078	20	17350	Service
A012	160	17380	Service	A046	80	17660	Service	A079	20	17370	Service
A013	160	17400	Service	A047	80	17680	Service	A080	20	17390	Service
A014	160	17420	Service	A048	80	17700	Service	A081	20	17410	Service
A015	160	17440	Service	A049	80	17720	Service	A082	20	17430	Service
A016	160	17460	Service	A050	80	17740	Service	A083	20	17450	Service
A017	160	17480	Service	A051	80	17760	Service	A084	20	17470	Service
A018	160	17500	Service	A052	40	17320	Service	A085	20	17490	Service
A019	160	17520	Service	A053	40	17340	Service	A086	20	17510	Service
A020	160	17540	Service	A054	40	17360	Service	A087	20	17530	Service
A021	160	17560	Service	A055	40	17380	Service	A088	20	17550	Service
A022	160	17580	Service	A056	40	17400	Service	A089	20	17570	Service
A023	160	17600	Service	A057	40	17420	Service	A090	20	17590	Service
A024	160	17620	Service	A058	40	17440	Service	A091	20	17610	Service
A025	160	17640	Service	A059	40	17460	Service	A092	20	17630	Service
A026	160	17660	Service	A060	40	17480	Service	A093	20	17650	Service
A027	160	17680	Service	A061	40	17500	Service	A094	20	17670	Service
A028	160	17700	Service	A062	40	17520	Service	A095	20	17690	Service
A029	160	17720	Service	A063	40	17540	Service	A096	20	17710	Service
A030	80	17340	Service	A064	40	17560	Service	A097	20	17730	Service
A031	80	17360	Service	A065	40	17580	Service	A098	20	17750	Service
A032	80	17380	Service	A066	40	17600	Service	A099	20	17770	Service
A033	80	17400	Service	A067	40	17620	Service	A100	20	17790	Service
A034	80	17420	Service								