Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
Heighliner Corp.	)	File No. SES-AMD-_____
Third Amendment to Modification Application for Authority to Deploy and Operate Fixed and Mobile Earth Stations in the Ku-band Frequencies	)	

AMENDMENT APPLICATION

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AMENDMENT APPLICATION

Pursuant to Section 25.116 of the Federal Communications Commission's ("Commission's") rules,[1] Heighliner Corp. ("Heighliner"), a wholly owned subsidiary of Astranis Space Technologies Corp. ("Astranis"), files this application to further amend its Modification Application[2] (Call Sign E220162).[3] Specifically, Heighliner requests to add blanket license authority to deploy and operate a network of transmit/receive fixed-satellite service ("FSS") fixed earth stations and earth stations in motion ("ESIMs") in the Ku-band frequencies (specifically 14.0–14.5, 10.95–11.2, and 11.45–12.2 GHz) across the Contiguous United States ("CONUS") and United States ("U.S.") territories.[4] These earth stations, which include electronically steered phased array antennas and flat-panel antennas, will operate both as ESIMs — including earth stations on vessels ("ESVs"), vehicle-mounted earth stations ("VMESs"), and earth stations aboard aircraft ("ESAAs")[5] — and at temporary fixed locations.

[1] 47 C.F.R. § 25.116.

[2] *See* Heighliner Corp., *Application for Modification of Authority to Deploy and Operate Fixed Earth Stations in the Ku-band and Ka-band Frequencies,* ICFS File No. SES-MOD-20260417-01081 (E220162) (filed May 4, 2026) ("Modification Application") (requesting to operate a blanket license network of fixed transmit/receive 1.2-meter earth station antennas in the Ku-band frequencies and fixed transmit/receive 4.8-meter earth station antennas in the Ka-band frequencies); ICFS File No. SES-AMD-20260512-01307 (filed May 13, 2026) ("First Amendment Application") (requesting to deploy and operate a blanket license network of fixed transmit/receive 4.0-meter earth station antennas in the conventional Ka-band frequencies); ICFS File No. SES-AMD-20260813-02234 (filed August 14, 2026) ("Second Amendment Application") (requesting to add additional Ka-band frequencies to its previously requested blanket license network of 4-meter and 4.8-meter antennas across CONUS and U.S. territories, and to add additional types of operations in previously requested Ka-band frequencies).

[3] This license (Call Sign E220162) will be used for all Heighliner's blanket-license operations. *See* Astranis Projects USA LLC, *Astranis Carrier Gateways License Application* (E220162), ICFS File No. SES-LIC-20221102-01178 (granted Mar. 31, 2023); *see also* Heighliner Corp., *Pro forma assignment of earth station license to Heighliner Corp.*, ICFS File No. SES-ASG-20260304-00622 (granted Mar. 11, 2026).

[4] Under the Commission's rules applicants for blanket-licensed Ku-band earth stations are not required to specify the number of terminals to be deployed. *See Comprehensive Review of Licensing and Operating Rules for Satellite Services*, 30 FCC Rcd 14713, ¶ 291 (2015).

[5] *See* 47 C.F.R. § 25.103 (defining VMES, ESV, ESAA, and ESIM).

Heighliner was previously granted Special Temporary Authority ("STA") to operate 12 mobile earth stations located at Astranis Headquarters ("Pier 70") and 12 mobile earth stations in CONUS, communicating with Astranis's NuView Alpha and NuView Bravo satellites.[6] Through this amendment application, Heighliner seeks a blanket license authorization that encompasses these operations and supports expanded nationwide deployment with additional points of communication. The Commission has routinely granted blanket authorizations for fixed earth stations[7] and ESIMs[8] operating in Ku-band FSS frequencies.

I. FREQUENCIES AND POINTS OF COMMUNICATION

Heighliner requests authority to operate its earth stations with Astranis geostationary satellite orbit ("GSO") satellite systems on the Commission's Permitted Space Station List.[9] Specifically, Heighliner proposes to operate its earth stations in the following Ku-band frequencies:[10]

- Conventional Ku-bands, on a transmit/receive basis:

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[6] *See* Heighliner Corp., *Application for Special Temporary Authority*, ICFS File No. SES-STA-20260114-00989 (granted Mar. 18, 2026); *see also* Heighliner Corp., *Application for Renewal of Special Temporary Authority*, ICFS File No. SES-STA-20260723-02095 (filed July 23, 2026) (latest STA renewal).

[7] *See, e.g.*, WorldVu Satellites Limited, *Exhibit A: Narrative Statement* (E190727), ICFS File No. SES-LIC-20190930-01217 (granted Apr. 27, 2021) (OneWeb was granted a blanket license to operate up to 1,500,000 fixed compact steered antenna user terminals to communicate with the OneWeb NGSO FSS system in the Ku-band frequencies); Worldvu Satellites Limited, *Exhibit A: Narrative Statement* (E220121), ICFS File No. SES-LIC-20220801-00883 (granted Dec. 19, 2022) (OneWeb was granted a blanket license to operate up to 200,000 fixed single parabolic user terminals to communicate with the OneWeb NGSO FSS system in the Ku-band frequencies).

[8] *See, e.g.*, Kymeta Corporation, *Application for Blanket License* (E170070), ICFS File No. SES-LIC-20170223-00195 (granted Aug. 24, 2017) (Kymeta was granted a blanket license to operate 5,000 Ku-band technically identical transmit/receive VMESs and 1,000 transmit/receive EVSs operating in the Ku-band FSS frequencies); Viasat, Inc., *Narrative Exhibit* (E240154), ICFS File No. SES-LIC-20240729-01635 (Viasat was granted authority to operate Kymeta u8 terminals that would operate as ESIMs in the Ku-band frequencies).

[9] *Approved Space Station List*, Federal Communications Commission, https://www.fcc.gov/approved-space-station-list (last visited Aug. 5, 2026). The Approved Space Station List includes space stations added to the Commission's Permitted Space Station List pursuant to 47 C.F.R. § 25.103.

[10] *See* 47 C.F.R. § 25.103 (The Commission defines "Conventional Ku-band" as the 11.7–12.2 GHz (space-to-Earth) and 14.0–14.5 GHz (Earth-to-space) FSS frequency bands. The Commission defines the "Extended Ku-band" as the 10.95–11.2 GHz (space-to-Earth), 11.45–11.7 GHz (space-to-Earth), and 13.75–14.0 GHz (Earth-to-space) FSS frequency bands).

- 11.7–12.2 GHz (space-to-Earth);
- 14.0–14.5 GHz (Earth-to-space).

- Extended Ku-bands, on a receive-only basis:[11]
  - 10.95–11.2 GHz (space-to-Earth);
  - 11.45–11.7 GHz (space-to-Earth).

The Commission's rules specifically contemplate blanket licensing for earth stations operating in these bands.[12] However, Section 2.106 limits GSO FSS operations in the 10.95–11.7 GHz (space-to-Earth) frequency band to international communications. Accordingly, Heighliner requests a limited waiver below.[13] These operations will comply with relevant provisions of Part 25, including Section 25.228 governing ESIMs and Section 25.218 governing fixed earth stations.[14]

II. WAIVER REQUEST

The Commission may waive any of its rules if there is "good cause" to do so.[15] In general, waiver is appropriate if (1) special circumstances warrant a deviation from the general rule; and (2) such deviation would better serve the public interest than would strict adherence to the rule.[16] Generally, the Commission will grant a waiver of its rules in a particular case if the relief

[11] *See* 47 C.F.R. § 2.106, n. NG527A (authorizing ESIM operations in the 10.7–11.7 GHz band for reception of FSS emissions on an unprotected basis relative to non-Federal stations in the fixed service).

[12] *See* 47 C.F.R. § 25.115(c)(1).

[13] *See* 47 C.F.R. § 2.106 n. NG52.

[14] *See* 47 C.F.R. §§ 25.228 and 25.218.

[15] *See* 47 C.F.R. § 1.3; Northeast Cellular Tel. Co. v. FCC, 897 F.2d 1164 (D.C. Cir. 1990); WAIT Radio v. FCC, 418 F.2d 1153 (D.C. Cir. 1969).

[16] *See* Northeast Cellular, 897 F.2d at 1166.

requested would not undermine the policy objective of the rule in question and would otherwise serve the public interest.[17]

A. SECTION 2.106, FOOTNOTE NG52

Heighliner seeks a limited waiver of Footnote NG52 of the U.S. Table of Frequency Allocations[18] to allow for receive-only FSS operations in the 10.95–11.2 and 11.45–11.7 GHz frequency bands on a blanket license basis. Footnote NG52 has long been understood as intending to limit constraints to deployment of terrestrial services in this spectrum. The requested waiver is justified because Heighliner seeks to operate in these frequency bands on a receive-only, non-protected basis with respect to terrestrial services. As a result, these operations will not constrain deployment of terrestrial stations. Heighliner acknowledges that, pursuant to Section 25.115(c)(1), blanket licensing for earth station receive operations in the 10.7–11.7 GHz band is provided on an unprotected basis with respect to terrestrial Fixed Service.[19] Accordingly, the proposed operations are consistent with the intent of Footnote NG52, and granting a waiver would not undermine its policy objective.

Further, grant of this waiver is in the public interest because it promotes spectrally efficient use of the frequency bands without posing any risk of harmful interference to co-primary terrestrial licensees. The Commission recently granted a similar waiver request for Astranis and other operators.[20]

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[17] *See* WAIT Radio, 418 F.2d at 1157.

[18] 47 C.F.R. § 2.106, n. NG52.

[19] 47 C.F.R. § 25.115(c)(1).

[20] *See* Heighliner Corp., *Application for Extension of Special Temporary Authority*, Stamp Grant, ICFS File No. SES-STA-20251210-01019, Condition 8 (granted Feb. 26, 2026). *See also* Intelsat License LLC, *Application of Intelsat License LLC to Modify Authorization for Intelsat 905* (S2409), Stamp Grant, ICFS File No. SAT-MOD-20250117-00020, Condition 9 (granted Sep. 16, 2025).

III. PUBLIC INTEREST

Grant of this application will serve the public interest, convenience, and necessity by permitting these earth stations to communicate with Astranis satellites, enabling Astranis to expand the range of antenna types communicating with its GSO systems.

IV. CONCLUSION

Heighliner respectfully requests that the Commission grant its Modification Application, as amended to date,[21] for authority to deploy and operate these additional earth stations in the above-referenced frequency bands. All requests in the First Amendment Application and Second Amendment Application remain unchanged.[22] The required technical information is provided in the accompanying Form 312, Schedule B,[23] and Exhibit B. Radiation hazard analyses for each antenna are included in Exhibit A.

Respectfully submitted,

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[21] *See* Modification Application, First Amendment Application, and Second Amendment Application, *supra* note 2.

[22] *See* First Amendment Application and Second Amendment Application, *supra* note 2.

[23] The amended Schedule B covers the entire modification, including the two previous amendment applications and this third amendment application. *See* Modification Application, First Amendment Application, and Second Amendment Application, *supra* note 2.

Dated: September 10, 2026

EXHIBIT A – RADIATION HAZARD ANALYSES

Exhibit A provides the radio frequency ("RF") radiation hazard analyses for the following antenna models:

1. Satcube Ku
2. Kymeta Goshawk U8
3. Kymeta Osprey U8
4. Global Konet Mini
5. L3Harris Shadow
6. Requtech RESA M Ku

The analyses for the SatCube Ku, Kymeta Goshawk U8, and Kymeta Osprey U8 antennas are incorporated by reference to the RF radiation hazard testing results submitted by their respective manufacturers.

1. Satcube Ku

For the Satcube Ku antenna, Astranis incorporates by reference the RF radiation hazard testing results submitted by the manufacturer and available in the FCC's equipment authorization database under FCC ID: 2AUV4SATCUBEKU.[24] The test report is dated November 19, 2020. The RF-exposure assessment shows that the FCC's general-population/uncontrolled limits are exceeded within 19 m of the pointing direction of the antenna and the occupational/controlled limits are exceeded within 7 m of the pointing direction of antenna. At typical elevation angles to Astranis satellites in CONUS, 30 degrees or greater, and the typical height of an adult male (6 feet) and the antenna positioned 25 cm above the ground, the keep out distance reduces from 19 m to 2.5 m. At minimum elevation angles to Astranis satellites in CONUS, approximately 20 degrees, and the typical height of an adult male and the antenna positioned 25 cm above the ground, the keep out distance is 4 m. An RF-exclusion zone with a minimum radius of 4 m will be established around the antenna. The exclusion area will be physically secured and posted with noticeable RF-safety signage; entry by untrained personnel will be prevented, and trained staff may enter the occupational zone only under a transmitter shutdown or power-reduction procedure. With these controls in place, the installation will fully comply with the FCC's human-exposure requirements.

2. Kymeta Goshawk U8

For the Kymeta Goshawk U8 antenna, Astranis incorporates by reference the RF radiation hazard testing results submitted by the manufacturer and available as part of a Kymeta earth station application (SES-MOD-20200611-00674, attached RF Radiation Hazard Analyses, submitted June 11, 2020). The summary, starting on page 27 of the Kymeta RF Radiation Hazard Attachment, concludes that the limits to protect

[24] Satcube AB, FCC ID 2AUV4SATCUBEKU, RF exposure report (Nov. 17, 2020), available via FCC.report at https://fcc.report/FCC-ID/2AUV4SATCUBEKU.

occupational staff are not exceeded, and that the limits to protect the general public are exceeded within 50 cm of the antenna and within 1.55 m of the edge of the terminal. The analyses used a maximum duty cycle of 30%. Astranis will follow the signage and access control measures described on pages 27-30 of the Kymeta RF Radiation Hazard Attachment, as well as the 30% duty cycle limitation.

3. **Kymeta Osprey U8**

   For the Kymeta Osprey U8 antenna, Astranis incorporates by reference the RF radiation hazard testing results submitted by the manufacturer and available as part of a Kymeta earth station application (SES-MOD-20211110-01988, attached RF Radiation Hazard Analyses, submitted November 10, 2021). The summary, starting on page 27 of the RF Radiation Hazard Attachment, concludes that the limits to protect occupational are exceeded in a vertical column extending 100 cm radially from the center of the antenna up to a height of 20 cm above the horizontal plane of the antenna. The summary also concludes that the limits to protect the general public are exceeded in a vertical column within the diameter of the antenna up to 300 cm from the surface of the antenna and in a vertical column extending 200 cm radially from the center of the antenna up to a height of 50 cm above the horizontal plane of the antenna. The analyses used a maximum duty cycle of 30%. Astranis will follow the signage and access control measures described on pages 27-30 of the Kymeta RF Radiation Hazard Attachment, as well as the 30% duty cycle limitation.

For the Global Konet Mini, L3Harris Shadow, and Requtech RESA M Ku antennas, the RF radiation hazard analyses were performed for seven zones surrounding the antennas. The tables labeled "Input Values" provide the input data required to perform the analysis. The tables labeled "OET 65 Calculated Values" provide the intermediate calculation used to perform the assessment in accordance with OET 65. The results are shown in the tables labeled "Radiation Analysis Zone." The analyses were performed for each of the seven radiation zones as described below:

Zone 1.	Point between the feed and the sub-reflector
Zone 2.	The power at the surface of the antenna
Zone 3.	The power level between the main reflector and ground
Zone 4.	The near-field or Fresnel region in which the maxima can be reached before the field starts to diminish with distance
Zone 5.	The Transition region where power begins to decrease inversely with distance from the antenna
Zone 6.	The Far Field or Fraunhofer region where power decreases inversely with the square of the distance. This is the point at which the antenna beam is fully collimated
Zone 7.	The off-axis level in the near field. This is defined as the area outside of the main beam removed and at least one antenna diameter removed from the main beam

4. Global Konet Mini

Input Values	*Value*	*Unit*
D = Aperture Diameter	*0.60*	*Meters*
d = Subreflector Diameter	*0.6*	*Meters*
G = Antenna Gain	*36.6*	*dBi*
FCC Designation	*Ku*	*Band*
F = Frequency	*14.500*	*GHz*
P = Transmitter Power Watts:	*4.4*	*Watts*
R_{ua} = closest point to uncontrolled area	*20*	*meters*
Elevation angle at closest point R_{ua}	*30*	*Degrees*

OET 65 Calculated Values	*Formula*	*Value*	*Unit*
λ= Wavelength	$\frac{c}{F}$	*0.0207*	*meters*
G = Antenna Gain	$10^{(G/10)}$	*4570.881896*	*(W) linear*
h = Apperture Efficiency	$\frac{Gl^2/4p}{pD^2/4}$	*55%*	*percentage*
A = Area of reflector	pR^2	*0.283*	*meters²*
a = area of subreflector	pr^2	*2827.433*	*cm²*
R_{nf} = Near-Field Region	$\frac{D^2}{4l}$	*4.353*	*meters*
R_t = Transition Region	$>R_{nf}$	*4.353*	*>meters*
	$<R_{ff}$	*10.447*	*<meters*
R_{ff} = Far Field Region	$\frac{0.6D^2}{l}$	*10.447*	*meters*

Radiation Analysis Zone		*Formula*	*Level*	*Value*	*Exposure Limits*	
					General Public	*Occupational*
					<1mW/cm2	*<5mW/cm2*
1	*Power Subreflector*	$\frac{4P}{a}$	*6.225*	*mW/cm2*	*>FCC MPE See Note 1*	*>FCC MPE See Note 2*
2	*Antenna Surface*	$\frac{4P}{A}$	*6.225*	*mW/cm2*	*>FCC MPE See Note 1*	*>FCC MPE See Note 2*
3	*Main Reflector Ground*	$\frac{P}{A}$	*1.556*	*mW/cm2*	*>FCC MPE See Note 1*	*<FCC MPE*
4	*S_{nf} =Near-Field Power Density*	$\frac{4P}{hA}$	*11.319*	*mW/cm2*	*>FCC MPE See Note 1*	*>FCC MPE See Note 2*
5	*S_t = Max Transition Power Density*	$\leq S_{nf}$	*11.319*	*mW/cm2*	*>FCC MPE See Note 1*	*>FCC MPE See Note 2*
6	*S_{ff} = Max Far field Power Density*	$\frac{PG}{4pR_{ff}^2}$	*1.466*	*mW/cm2*	*>FCC MPE See Note 3*	*<FCC MPE*
7	*Off Access Level Near Field*	S_{nf} - 20 dB	*0.11319*	*mW/cm2*	*<FCC MPE*	*<FCC MPE*

Notes:

1. *The antenna is installed in a controlled location access is restricted to authorized personnel only. The antenna is marked with RF Radiation Hazard signage.*

2. *Inside the controlled area, MPE levels exceed the MPE exposure for occupational levels. The levels will be reduced to safe MPE by removing power to the transmitters when work is performed on or around the antenna. This area can only be accessed by qualified personnel.*
3. *The field develops 10.0 meters above ground level at the minimum elevation angle which is not accessible to the general public.*

The radiation analysis levels shown above for the Global Konet Mini results in a Category 3 mitigation and safety plan as per Section 1.307(c)(4) of the Commission's rules. During the testing period, the Global Konet Mini antenna will be installed on the rooftop of the Astranis headquarters facility. Access to this area is strictly limited to authorized Astranis personnel directly involved in the test activities. Accordingly, all antenna testing and operational activities will occur within a controlled, restricted-access environment that is isolated from the general public. Consequently, given the measures described in the above Notes, there is no risk of radiation exposure beyond the acceptable limits. These equations were developed for parabolic antennas and have been adapted as much as possible for the flat panel case. Safety mitigations will occur as described in the notes above.

3. L3Harris Shadow

Input Values	*Value*	*Unit*
D = Aperture Diameter	*0.45*	*Meters*
d = Subreflector Diameter	*0.45*	*Meters*
G = Antenna Gain	*34.1*	*dBi*
FCC Designation	*Ku*	*Band*
F = Frequency	*14.500*	*GHz*
P = Transmitter Power Watts:	*8.9*	*Watts*
R_{ua} = closest point to uncontrolled area	*20*	*meters*
Elevation angle at closest point R_{ua}	*30*	*Degrees*

OET 65 Calculated Values	*Formula*	*Value*	*Unit*
λ= Wavelength	$\frac{c}{F}$	*0.0207*	*meters*
G = Antenna Gain	$10^{(G/10)}$	*2570.395783*	*(W) linear*
h = Apperture Efficiency	$\frac{Gl^2/4p}{pD^2/4}$	*55%*	*percentage*
A = Area of reflector	pR^2	*0.159*	*meters²*
a = area of subreflector	pr^2	*1590.431*	*cm²*
R_{nf} = Near-Field Region	$\frac{D^2}{4l}$	*2.449*	*meters*
R_t = Transition Region	$>R_{nf}$	*2.449*	*>meters*
	$<R_{ff}$	*5.876*	*<meters*
R_{ff} = Far Field Region	$\frac{0.6D^2}{l}$	*5.876*	*meters*

Radiation Analysis Zone	*Formula*	*Level*	*Value*	*Exposure Limits*	
				General Public	*Occupational*

					<1mW/cm2	<5mW/cm2
1	Power Subreflector	$\frac{4P}{a}$	22.384	mW/cm2	>FCC MPE See Note 1	>FCC MPE See Note 2
2	Antenna Surface	$\frac{4P}{A}$	22.384	mW/cm2	>FCC MPE See Note 1	>FCC MPE See Note 2
3	Main Reflector Ground	$\frac{P}{A}$	5.596	mW/cm2	>FCC MPE See Note 1	>FCC MPE See Note 2
4	S_{nf} =Near-Field Power Density	$\frac{4P}{hA}$	40.713	mW/cm2	>FCC MPE See Note 1	>FCC MPE See Note 2
5	S_t = Max Transition Power Density	$\leq S_{nf}$	40.713	mW/cm2	>FCC MPE See Note 1	>FCC MPE See Note 2
6	S_{ff} = Max Far field Power Density	$\frac{PG}{4pR_{ff}^2}$	5.272	mW/cm2	>FCC MPE See Note 3	>FCC MPE See Note 2
7	Off Access Level Near Field	S_{nf} - 20 dB	0.40713	mW/cm2	<FCC MPE	<FCC MPE

Notes:

1. *The antenna is installed in a controlled location access is restricted to authorized personnel only. The antenna is marked with RF Radiation Hazard signage.*
2. *Inside the controlled area, MPE levels exceed the MPE exposure for occupational levels. The levels will be reduced to safe MPE by removing power to the transmitters when work is performed on or around the antenna. This area can only be accessed by qualified personnel.*
3. *The field develops 10.0 meters above ground level at the minimum elevation angle which is not accessible to the general public.*

The radiation analysis levels shown above for the L3Harris Shadow results in a Category 3 mitigation and safety plan as per Section 1.307(c)(4) of the Commission's rules. Consequently, there is no risk of radiation exposure beyond the acceptable limits. During the testing period, the L3Harris Shadow antenna will be installed on the rooftop of the Astranis headquarters facility. Access to this area is strictly limited to authorized Astranis personnel directly involved in the test activities. Accordingly, all antenna testing and operational activities will occur within a controlled, restricted-access environment that is isolated from the general public These equations were developed for parabolic antennas and have been adapted as much as possible for the flat panel case. Safety mitigations will occur as described in the notes above.

4. Requtech RESA M Ku

Input Values	Value	Unit
D = Aperture Diameter	0.90	Meters
d = Subreflector Diameter	0.9	Meters
G = Antenna Gain	40.1	dBi
FCC Designation	Ku	Band
F = Frequency	14.500	GHz
P = Transmitter Power Watts:	8.9	Watts
R_{ua} = closest point to uncontrolled area	20	meters
Elevation angle at closest point R_{ua}	30	Degrees

OET 65 Calculated Values	Formula	Value	Unit
λ= Wavelength	$\frac{c}{F}$	0.0207	meters

G = Antenna Gain	$10^{(G/10)}$	*10232.92992*	*(W) linear*
h = Apperture Efficiency	$\frac{Gl^2/4p}{pD^2/4}$	*55%*	*percentage*
A = Area of reflector	pR^2	*0.636*	*meters²*
a = area of subreflector	pr^2	*6361.725*	*cm²*
R_{nf} = Near-Field Region	$\frac{D^2}{4l}$	*9.794*	*meters*
R_t = Transition Region	$>R_{nf}$	*9.794*	*>meters*
	$<R_{ff}$	*23.506*	*<meters*
R_{ff} = Far Field Region	$\frac{0.6D^2}{l}$	*23.506*	*meters*

	Radiation Analysis Zone	***Formula***	***Level***	***Value***	***Exposure Limits***	
					General Public	***Occupational***
					<1mW/cm2	*<5mW/cm2*
1	*Power Subreflector*	$\frac{4P}{a}$	*5.596*	*mW/cm2*	*>FCC MPE See Note 1*	*>FCC MPE See Note 2*
2	*Antenna Surface*	$\frac{4P}{A}$	*5.596*	*mW/cm2*	*>FCC MPE See Note 1*	*>FCC MPE See Note 2*
3	*Main Reflector Ground*	$\frac{P}{A}$	*1.399*	*mW/cm2*	*>FCC MPE See Note 1*	*<FCC MPE*
4	*S_{nf} =Near-Field Power Density*	$\frac{4P}{hA}$	*10.227*	*mW/cm2*	*>FCC MPE See Note 1*	*>FCC MPE See Note 2*
5	*S_t = Max Transition Power Density*	$\leq S_{nf}$	*10.227*	*mW/cm2*	*>FCC MPE See Note 1*	*>FCC MPE See Note 2*
6	*S_{ff} = Max Far field Power Density*	$\frac{PG}{4pR_{ff}^2}$	*1.312*	*mW/cm2*	*>FCC MPE See Note 3*	*<FCC MPE*
7	*Off Access Level Near Field*	S_{nf} - 20 dB	*0.10227*	*mW/cm2*	*<FCC MPE*	*<FCC MPE*

Notes:

1. *The antenna is installed in a controlled location access is restricted to authorized personnel only. The antenna is marked with RF Radiation Hazard signage.*
2. *Inside the controlled area, MPE levels exceed the MPE exposure for occupational levels. The levels will be reduced to safe MPE by removing power to the transmitters when work is performed on or around the antenna. This area can only be accessed by qualified personnel.*
3. *The field develops 10.0 meters above ground level at the minimum elevation angle which is not accessible to the general public.*

The radiation analysis levels shown above for the Requtech RESA M Ku results in a Category 3 mitigation and safety plan as per Section 1.307(c)(4) of the Commission's rules. During the testing period, the Requtech RESA M Ku antenna will be installed on the rooftop of the Astranis headquarters facility. Access to this area is strictly limited to authorized Astranis personnel directly involved in the test activities. Accordingly, all antenna testing and operational activities will occur within a controlled, restricted-access environment that is isolated from the general public. Consequently, given the measures described in the above Notes, there is no risk of radiation exposure beyond the acceptable limits. These equations were developed for parabolic antennas and have been adapted as much as possible for the flat panel case. Safety mitigations will occur as described in the Notes above.