EXHIBIT 43

DG Consents Sub, Inc.
Modification Application
FCC Form 312
April 2016

Description of Modification of License Application

With this application, DG Consents Sub, Inc. ("DigitalGlobe") requests modification of its Earth Exploration Satellite Service ("EESS") system authorization licensed under Call Sign S2348 in several respects:

- To update references to the GeoEye-2 space station from GeoEye-2 to WorldView-4, which is the commercial name of the space station;[1]

- To modify certain technical specifications included as part of the WorldView-4 authorization; and

- To extend the WorldView-4 "launch and begin operations" milestone deadline for a period of seven months, from the existing deadline date of April 10, 2016 to November 10, 2016. As explained below, DigitalGlobe intends to launch WorldView-4 in the September-October 2016 timeframe and respectfully requests Commission action on this request in advance of the anticipated launch.

In support of its request for modification, DigitalGlobe offers the information and demonstrations provided below.

I. Information Required Under Section 25.114 of the Commission's Rules

DigitalGlobe provides the following information in accordance with Section 25.114 of the Commission's rules.[2] DigitalGlobe provides this information only to the extent that it has changed from the information currently on file for Call Sign S2348, and hereby certifies that the remaining information has not changed.[3]

A. General Description of Overall Facilities, Operations and Services

The Commission granted the request to add the WorldView-4 authorization to the non-geostationary ("NGSO") EESS constellation licensed under Call Sign S2348 on October 10, 2012.[4] In the application requesting the addition of WorldView-4, the then-current licensee,

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[1] All subsequent references to the subject space station herein shall be in the name of WorldView-4.

[2] 47 C.F.R. § 25.114.

[3] *See* 47 C.F.R. § 25.117(d)(1).

[4] *See* FCC File No. SAT-MOD-20120427-00079 (granted Oct. 10, 2012) ("*GeoEye-2 Modification*").

GeoEye License Corp., explained that the new space station would offer dramatically superior high resolution commercial imagery after its anticipated launch in 2013. Following its acquisition of GeoEye License Corp. in early 2013, DigitalGlobe decided to postpone the launch of WorldView-4 in light of the planned (and ultimately successful) launch of DigitalGlobe's WorldView-3 satellite on August 13, 2014.[5] DigitalGlobe now anticipates launching WorldView-4 in the September-October 2016 timeframe.

The modifications requested herein will not alter the basic function and purpose of WorldView-4. As before, WorldView-4 will transmit high-resolution satellite images and telemetry using the 8025-8400 MHz band allocated to the EESS. DigitalGlobe's ground segment will send commands to WorldView-4 using the 2025-2110 MHz band. All radio frequency communications between WorldView-4 and the U.S. will be via DigitalGlobe's global network of Remote Ground Terminals ("RGT"), including the RGT's located in the U.S. listed in Section I.E below.

With this modification, DigitalGlobe seeks to alter the orbit altitude, inclination and orbit period that are currently authorized for WorldView-4. While it has not finalized the precise altitude, DigitalGlobe is certain that the altitude will be between 496 kilometers and 770 kilometers, inclusive. Thus, for purposes of demonstrating compliance with regulatory and technical provisions such as power flux-density limits, link budgets and predicted antenna gain contours, DigitalGlobe includes data and showings for both 496 kilometers and 770 kilometers. Although the altitude of WorldView 4 can thus be anywhere in the 496-770 kilometer range, DigitalGlobe also includes data for a representative or nominal altitude of 617 kilometers, which represents the current benchmark with DigitalGlobe's customer base and launch vehicle provider. To ensure accuracy, all analyses in connection with this modification request have been updated to include measured values wherever possible (e.g., antenna patterns and transmitter powers).

On June 10, 2015, DigitalGlobe received a modified license from the National Oceanic and Atmospheric Administration ("NOAA") to operate WorldView-4 consistent with the altitude range requested in this modification.[6]

B. Schedule S

The technical characteristics of the modifications to the WorldView-4 satellite are detailed in the Schedule S portion of the FCC Form 312 of this Application, a copy of which is included as Attachment A hereto. DigitalGlobe completed the Schedule S to the best of its ability notwithstanding aspects of the form that are more readily suited for geostationary communications satellites. Any discrepancies between the data in the electronic version of

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[5] GeoEye License Corp. was acquired by DigitalGlobe Inc., DG Consents Sub, Inc.'s parent company, pursuant to a plan of merger. *See* FCC File No. SAT-T/C-20120817-00139 (granted Jan. 10, 2013).

[6] *See* NOAA License to Operate a Private Remote Sensing Space System (WorldView License). WorldView-4 was added to DigitalGlobe's NOAA authorization by amendment dated June 10, 2015.

Schedule S and the version included in the print version as Attachment A should be resolved in favor of the print version in Attachment A.

C. Link Budgets and Power Flux Density Calculation

The modified WorldView-4 link budgets and power flux density ("PFD") limits at the surface of the Earth are included as Attachment B hereto. The PFDs at the Earth's surface produced by WorldView-4 data and telemetry transmissions satisfy the PFD limits in Table 21-4 of the ITU Radio Regulations.[7] Tables B-1 and B-2 in Attachment B to this Exhibit 43 show that the PFDs at the Earth's surface produced by the WorldView-4 satellite's data and telemetry transmissions satisfy the PFD limits in Article 21 of the ITU Radio Regulations, under assumed free-space propagation conditions, for all angles of arrival.

No. 22.5 of the ITU Radio Regulations specifies that in the frequency band 8025-8400 MHz, which the EESS using NGSO satellites shares with the fixed-satellite service (Earth-to-space) or the meteorological-satellite service (Earth-to-space), the maximum PFD produced at the geostationary satellite orbit ("GSO") by any EESS space station shall not exceed -174 dB(W/m^2) in any 4 kHz band. The calculation below shows that the PFD produced by the transmissions from the proposed WorldView-4 satellite does not exceed the limit in No. 22.5, even in the worst possible hypothetical case.

The PFD at the GSO produced by the WorldView-4 transmissions are:

Wideband PFD [dB(W/m^2/4 kHz)] = EIRP - 20log(D) - 10log(BW) - 94.97
Narrowband PFD[dB(W/m^2/4 kHz)] = EIRP - 20log(D) – 82.75

Where:

- EIRP is the Maximum EIRP of the transmission, in dBW;
- D is distance between the WorldView-3 satellite and GSO, in km;
- BW is the symbol bandwidth of the transmission, in MHz.

The minimum possible distance between the WorldView-4 satellite and the GSO is 34,956 kilometers for the highest possible satellite orbit of 770 kilometers. Under a hypothetical assumption that the WorldView-4 satellite antennas are radiating at their peak EIRP toward the GSO, the wideband data downlink transmission with the peak EIRP = 28.83 dBW (peak antenna gain, maximum transmitter output power over temperature at BOL, 2 transmitters operating) and BW = 200 MHz produces a PFD at the GSO of -180 dB(W/m^2) in any 4 kHz band. Under the same hypothetical assumptions, the narrowband telemetry transmission from the WorldView-4 satellite has a peak EIRP = 4.0 dBW and produces a PFD at the GSO of -177.6 dB(W/m^2) in any 4 kHz band.

[7] Section 25.208 of the Commission's rules does not contain PFD limits at the Earth's surface produced by emissions from NGSO EESS space stations operating in the 8025-8400 MHz band.

D. Space Station Antenna Patterns

Attachment C hereto updates the predicted downlink and uplink antenna patterns for the WorldView-4 space station with measured patterns from antenna level testing.

E. Predicted Antenna Gain Contours

Attachment D hereto shows the predicted antenna gain contours required by Section 25.114(c)(vi)(B) of the Commission's rules at the following DigitalGlobe earth station sites:

- Fairbanks, Alaska (Call Sign E950499)
- Prudhoe Bay, Alaska (Call Sign E040264)
- Green River, Wyoming (Call Sign E120040)
- Clewiston, Florida (Call Sign E110171)
- Dulles, Virginia (Call Sign E980375)

The gain contours are plotted for WorldView-4's nominal altitude of 617 kilometers, and at the highest (770 kilometers) and lowest (496 kilometers) points of its anticipated altitude range. The Attachment D showing depicts the contours from a 90° elevation angle.

F. Interference Analysis

The modifications requested herein do not alter the interference analysis for the WorldView-4 space station, as set forth in the original application for WorldView-4.

G. Public Interest Considerations

The grant of this Modification Application will serve the public interest by permitting DigitalGlobe to launch and operate a high-resolution imagery satellite. WorldView-4 will enable DigitalGlobe to expand its ability to provide its Government and non-Government users with high resolution data to meet national defense, meteorology, mapping, land use, natural disaster monitoring and other critical customer demands.[8]

H. Orbital Debris Mitigation

DigitalGlobe certifies that it has submitted post-mission disposal plans to NOAA. Accordingly, it need not submit such plans to the Commission for independent review.[9] The Orbital Debris Mitigation plan submitted as part of the original application for WorldView-4 envelops the technical specifications proposed herein.

DigitalGlobe notes that the minimum proposed operational orbit altitude of 496 kilometers for WorldView-4 is approximately 90 kilometers from the current orbital altitude of

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[8] Section III of this application discusses the public interest benefits of extending the launch milestone applicable to the WorldView-4 authorization.

[9] *See* 47 C.F.R. § 25.114(d)(14)(iv).

the International Space Station, the nearest inhabited orbiting object, and approximately 100 kilometers from the orbital altitude of the Chinese Tiangong-1 Space Station. Far greater separation between WorldView-4 and these inhabited objects will exist in the likely event that WorldView-4 is operated at its nominal altitude of 617 kilometers. In any event, DigitalGlobe will be proactive to ensure that risks to inhabited orbiting objects from WorldView-4 are mitigated, including coordinating with NASA to assure protection of the International Space Station on an ongoing basis, and with the China National Space Agency with respect to Tiangong-1 and any successor vehicles.

I. Extent of Communications with WorldView-4 During Descent to the Atmosphere

DigitalGlobe intends to utilize WorldView-4 for imaging services from the point at which the satellite is placed into its operational orbit until imaging services are no longer possible. After terminating services, DigitalGlobe will prepare the satellite for eventual reentry as described in the Orbital Debris Mitigation Plan. As stated in this Plan, lowering perigee to an altitude of 530 km or less will ensure re-entry within 25 years. However, given its substantial propellant reserves, WorldView-4 will most likely be capable of performing additional maneuvers to further reduce its altitude to approximately 300 km, the predicted limit for positive pointing control. This would serve the public interest by ensuring re-entry in a matter of weeks, rather than years. Under this scenario, DigitalGlobe would need to continue operating the narrowband downlink to obtain health and status telemetry and assure command authority during the de-orbit campaign. As depicted in Figure 1 below, the narrowband downlink would exceed the PFD limits below 460 km. The time spent below this altitude would be on the order of one to two weeks, with one or two contacts per orbit. Under these circumstances, DigitalGlobe would seek a Special Temporary Authority ("STA") from the Commission to continue narrowband transmissions. Due to the inherent uncertainties in predicting atmospheric drag many years into the future, the precise decommissioning orbit and need for an STA request cannot be determined until WorldView-4 nears the end of its useful life.

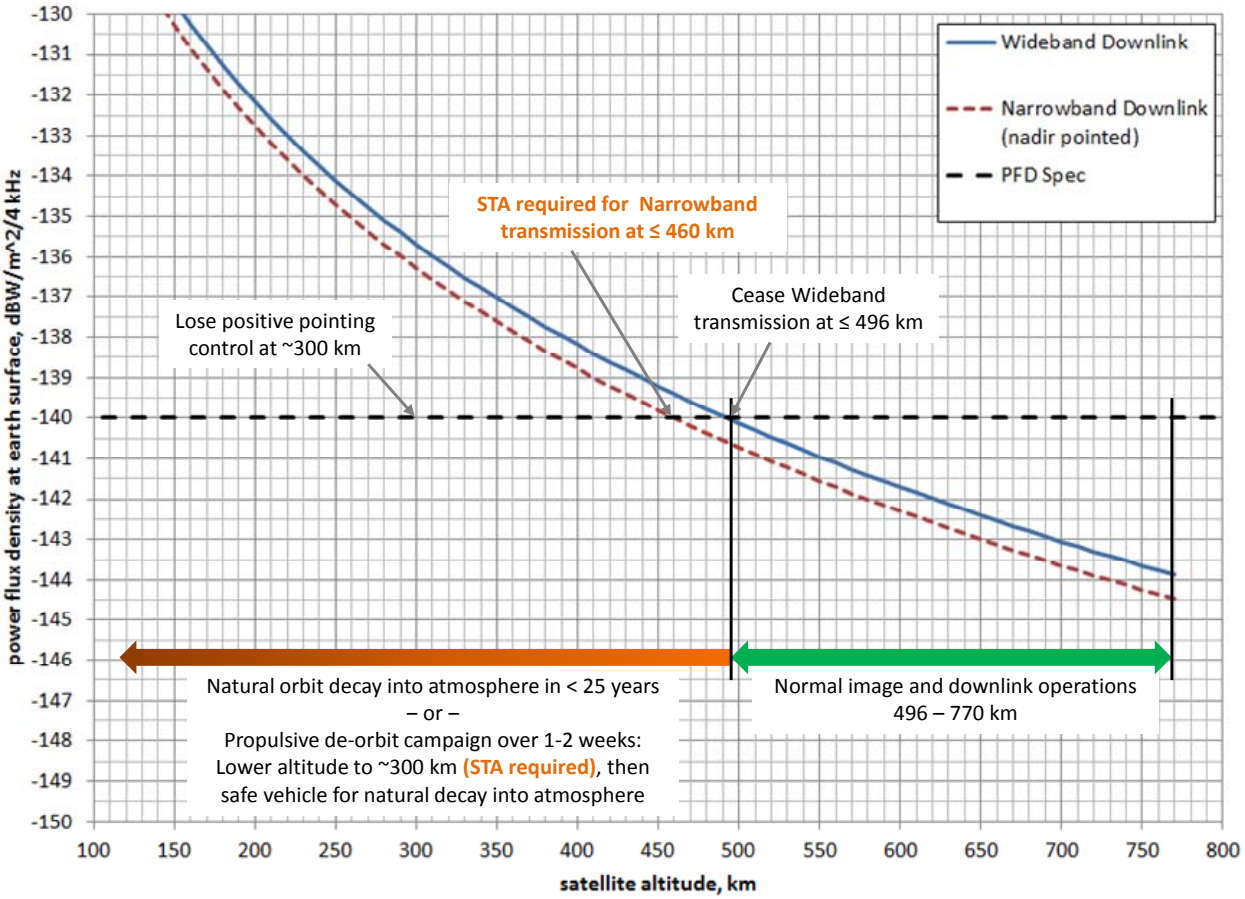

Figure 1. PFD at Earth's Surface versus Altitude

II. Additional/General Considerations

A. Waiver Request of Modified Processing Round Rules

DigitalGlobe requests that this application be processed pursuant to the first-come, first-served procedure adopted for "GSO-like satellite systems" under Section 25.158 of the Commission's rules.[10] To the extent necessary to allow for such processing, DigitalGlobe also requests waiver of Sections 25.156 and 25.157 of the Commission's rules, which stipulate the processing of "NGSO-like satellite systems" under a modified processing round framework.[11] DigitalGlobe requested similar waivers when it modified its EESS system under Call Sign S2129 to add a new spacecraft.[12] The Commission granted that request, concluding that authorizing an EESS licensee to operate in a particular frequency does not preclude other EESS licensees from

[10] 47 C.F.R. § 25.158.

[11] 47 C.F.R. §§ 25.156 & 25.157.

[12] *See DigitalGlobe, Inc.*, 20 FCC Rcd 15696 (2005). *See also GeoEye-2 Modification* (granting request to waive Sections 25.156 and 25.157 of the Commission's Rules to add authority to launch and operate WorldView-4).

operating in that band or cause harmful interference to other EESS systems currently operating in the band.[13] The waiver requested here presents similar circumstances, and warrants similar GSO-like treatment.

B. Waiver Request of Default Service Rules

DigitalGlobe requests a waiver of the default service rules under Section 25.217(b) of the Commission's rules.[14] Although the Commission has not adopted band-specific rules for EESS NGSO operations in the 8025-8400 MHz band, the Commission has previously granted a waiver of the default service rules contained in Section 25.217(b) to NGSO EESS system licensees – including in the cases of DigitalGlobe's existing EESS systems under Call Signs S2129 and S2348 – based on the fact that EESS operators in the 8025-8400 MHz band are required to comply with technical requirements in Part 2 of the Commission's rules and applicable ITU regulations.[15] In these cases, the Commission concluded that because the cited requirements had been sufficient to prevent harmful interference in the 8025-8400 MHz band, there was no need to impose additional technical requirements on operations in that band, and therefore granted the waiver requests. For these same reasons, the Commission should, to the extent necessary, grant DigitalGlobe a waiver of the default service rules contained in Section 25.217(b).

C. ITU Advance Publication Materials and Cost Recovery

DigitalGlobe will prepare the International Telecommunication Union ("ITU") Advance Publication Information submission for WorldView-4, and will provide this information to the Commission under separate cover. DigitalGlobe will separately provide the Commission with a letter acknowledging that it is responsible for any and all cost recovery fees associated with filings for the proposed system, as required under Section 25.111(d) of the Commission's rules.[16]

III. Request for Extension of Launch Milestone

As previously noted, the Commission granted authority to construct, launch and operate WorldView-4 on October 10, 2012. The grant of authority for WorldView-4 was conditioned on DigitalGlobe's compliance with the milestone schedule in Section 25.164(b) of the Commission's rules, including the requirement to launch and begin operations in accordance with the space station authorization by April 10, 2016. DigitalGlobe, however, has determined that it will not be able to launch WorldView-4 until sometime within the September-October 2016 timeframe. Accordingly, DigitalGlobe respectfully requests a seven-month extension of time, through November 10, 2016, in which to comply with the "launch and begin operations" milestone.

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[13] *See id.* at 15699.

[14] 47 C.F.R. § 25.217.

[15] *See DigitalGlobe Inc.*, 20 FCC Rcd at 15701-02 (2005); *see also GeoEye-2 Modification*, Attachment to Grant at 4.

[16] 47 C.F.R. § 25.211(d).

The policy objective of the Commission's milestone rules is to ensure that licensees provide service to the public in a timely manner by preventing the warehousing of scarce orbit and spectrum resources, to deter speculative license applications, and to ensure that the Commission's satellite licensees fulfill their obligation to build their systems.[17] Requests to extend a milestone may be granted when there are unique and overriding public interest concerns that justify an extension.[18] As explained below, public interest factors strongly support grant of DigitalGlobe's milestone extension request.

DigitalGlobe (together with its acquired predecessor GeoEye License Corp.) has diligently pursued the development of WorldView-4. As DigitalGlobe has previously demonstrated to the Commission, construction of the WorldView-4 space station was completed in May 2013 at significant cost to DigitalGlobe nearly two years in advance of the April 2015 milestone deadline to commence construction.[19] Although WorldView-4 was equipped for launch at the time construction was completed, DigitalGlobe opted to postpone the WorldView-4 launch in order to launch another of its EESS space stations, WorldView-3, in August 2014. Given the capacity added by WorldView-3 and the overall health of DigitalGlobe's EESS constellation, WorldView-4 was placed in storage at the satellite manufacturer site with the intent of launching in the latter half of 2016. Scheduling at the Vandenberg Air Force Base launch range dictated a launch window in the September-October 2016 timeframe. Barring unforeseen circumstances, DigitalGlobe anticipates launching WorldView-4 within this time period.

The record demonstrates DigitalGlobe's substantial and continuing commitment to the timely deployment of WorldView-4. Although DigitalGlobe's will not be able to meet the April 10, 2016 launch milestone, DigitalGlobe seeks only a brief seven-month extension of time to launch WorldView-4. As explained in the Milestone Showing Waiver Request, cancelling the

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[17] *See EchoStar Satellite Operating Corporation and Hughes Network Systems, Inc.*, Order, DA No. 16-278 (IB 2016), *citing Amendment of the Commission's Space Station Licensing Rules and Policies*, First Report and Order and Further Notice of Proposed Rulemaking in IB Docket No. 02-34, 18 FCC Rcd 10760, 10827 (2003).

[18] 47 C.F.R. § 25.117(e)(2). *See also New ICO Satellite Services G.P*, Memorandum Opinion and Order, 22 FCC Rcd 2229, 2233 (2007).

[19] On March 17, 2016, DigitalGlobe submitted a request to waive the requirement to demonstrate compliance with the first three milestones applicable to WorldView-4. *See* Request for Waiver of Requirement to Demonstrate Compliance with Satellite Implementation Milestones, FCC File No. SAT-MOD-20120427-00079 (filed March 17, 2016) ("*Milestone Showing Waiver Request*"). The request remains pending before the Commission. In the Milestone Showing Waiver Request, DigitalGlobe provided the dates by which the first three WorldView-4 milestones were met, and noted that each milestone was achieved well in advance of the deadline required under the applicable milestone. DigitalGlobe also provided evidence of the significant financial outlay made for construction of WorldView-4. In light of the accelerated construction of, and considerable financial investment made in, WorldView-4, DigitalGlobe explained that waiver was appropriate because its demonstrated development of the space station furthered the anti-warehousing objective of the Commission's milestone policy and would best serve the public interest by allowing the launch of WorldView-4 to go forward in 2016 as planned. DigitalGlobe supported its waiver request with a Declaration under penalty of perjury from Gina Knapp, Contracts Manager of Lockheed Martin Space Systems Company, attesting to the accuracy of the proffered timeline and costs associated with the construction of WorldView-4. For purposes of this modification request, DigitalGlobe incorporates to the extent necessary the Milestone Showing Waiver Request and accompanying Declaration of Gina Knapp.

WorldView-4 authorization now, at the point where the satellite is fully constructed and only months away from launch, would disserve the public interest (without any countervailing benefit) by delaying the provision of the wide range of high resolution satellite imagery services made possible by WorldView-4. In prior cases involving launch milestone extension requests, the Commission has determined that grant of the extension request would best serve the public interest by allowing a licensee "that has demonstrated diligence and commitment . . . to expeditiously complete implementation of a satellite system with advanced capabilities."[20] Indeed, the Commission has granted milestone extensions of even longer duration than the seven months sought by DigitalGlobe when the launch of the satellite is deemed to be "imminent."[21] Consistent with this precedent, the Commission has ample grounds to grant the comparatively brief seven-month launch milestone extension requested herein to allow the public interest benefits of WorldView-4 to be realized at the earliest possible date.

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In sum, DigitalGlobe respectfully requests that the Commission grant the modification application as detailed herein.

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[20] *TerreStar Networks, Inc.*, Memorandum Opinion and Order, 22 FCC Rcd 17698, 17702 (2007).

[21] *See, e.g., DIRECTV Enterprises, LLC Applications for Milestone Extension for DIRECTV RB-2*, Opinion, 30 FCC Rcd 4796 (2015) (granting extension of the launch and begin operations milestone for a period of one year and four days); *TerreStar Networks, Inc.* 22 FCC Rcd at 17702 (ten month extension).

ATTACHMENT A

FCC FORM 312, SCHEDULE S

FCC 312
Schedule S

FEDERAL COMMUNICATIONS COMMISSION
SATELLITE SPACE STATION AUTHORIZATIONS
(Technical and Operational Description)

Page 1: General, Frequency Bands, and GSO Orbit

S1. GENERAL INFORMATION Complete for all satellite applications.

a. Space Station or Satellite Network Name:	e. Estimated Date of Placement into Service:	i. Will the space station(s) operate on a Common Carrier basis?
USASAT 30C - WorldView-4	11/01/2016	☐ YES ☒ NO
b. Construction Commencement Date:	f. Estimated Lifetime of Satellite(s):	j. Number of transponders offered on a Common Carrier basis:
3/25/2010	7 Years	0
c. Construction Completion Date:	g. Total Number of Transponders:	k. Total Common Carrier Transponder Bandwidth:
3/13/2013	0	0 MHz
d. Estimated Launch Date:	h. Total Transponder Bandwidth (No. Transponders x Bandwidth):	l. Orbit Type: Mark all boxes that apply.
9/15/2016	0 MHz	☐ GSO ☒ NGSO

S2. OPERATING FREQUENCY BANDS Identify the frequency range and transmit/receive mode for all frequency bands inwhich this station will operate. Also indicate the nature of service(s) for each frequency band.

Frequency Band Limits				e. T/R Mode	f. Nature of Service(s): List all that apply to this band
Lower Frequency (_Hz)		Upper Frequency (_Hz)			
a. Numeric	b. Unit (K/M/G)	c. Numeric	d. Unit (K/M/G)		
8025	M	8400	M	T	Earth exploration satellite service
2051.342	M	2052.658	M	R	Earth exploration satellite service

S3. ORBITAL INFORMATION FOR GEOSTATIONARY SATELLITES ONLY:

a. Nominal Orbital Longitude (Degrees E/W):

b. Reason for orbital location selection:

Longitudinal Tolerance or E/W Station-Keeping:
c. Toward West: _____ Degrees
d. Toward East: _____ Degrees

e. Inclination Excursion or N/S Station-Keeping Tolerance: _____ Degrees

Range of orbital arc in which adequate service can be provided (Optional): Degrees E/W
f. Westernmost: _____ ___
g. Easternmost: _____ ___

h. Reason for service arc selection (Optional):

FEDERAL COMMUNICATIONS COMMISSION
SATELLITE SPACE STATION AUTHORIZATIONS
FCC Form 312 - Schedule S: (Technical and Operational Description)

S4. ORBITAL INFORMATION FOR NON-GEOSTATIONARY SATELLITES ONLY

S4a. Total Number of Satellites in Network or System: 5

S4b. Total Number of Orbital Planes in Network or System: 5

S4c. Celestial Reference Body (Earth, Sun, Moon, etc.): Earth

S4d. Orbit Epoch Date: 2016/09/01

For each Orbital Plane Provide:

(e) Orbital Plane No.	(f) No. of Satel-lites in Plane	(g) Inclination Angle (degrees)	(h) Orbital Period (Seconds)	(i) Apogee (km)	(j) Perigee (km)	(k)* Right Ascension of the Ascending Node (Deg.)	(l) Argument of Perigee (Degrees)	Active Service Arc Range (Degrees)		
								(m) Begin Angle	(n) End Angle	(o) Other
WV-4 min 1:30 PM	1	97.36	5671	521	506	2.863	90			
WV-4 nom 1:30 PM	1	97.83	5823	643	628	2.863	90			
WV-4 max 1:30 PM	1	98.45	6013	795	780	2.863	90			
WV-4 min 10:30 AM	1	97.36	5671	521	506	317.866	90			
WV-4 nom 10:30 AM	1	97.83	5823	643	628	317.866	90			
WV-4 max 10:30 AM	1	98.45	6013	795	780	317.866	90			
	Note: The final orbit selection for WorldView-4 has not yet been made. The altitude will be between									
	the min and max values shown; and the LMST will be will either be 10:30 AM or 1:30 PM. The "nominal"									
	rows represent the current reference baseline but is subject to change.									

S5. INITIAL SATELLITE PHASE ANGLE For each satellite in each orbital plane, provide the initial phase angle.

(a) Orbital Plane No.	(b) Satellite Number	(c) Initial Phase Angle (Degrees)	(a) Orbital Plane No.	(b) Satellite Number	(c) Initial Phase Angle (Degrees)	(a) Orbital Plane No.	(b) Satellite Number	(c) Initial Phase Angle (Degrees)	(a) Orbital Plane No.	(b) Satellite Number	(c) Initial Phase Angle (Degrees)

* Right ascension of ascending node values are valid for an assumed epoch time of 2016/9/1 12:00:00 UTC. The value nnn.nnn corresponds to 10:30 AM local mean solar time (LMST) of the descending node; and mmm.mmm corresponds to a 1:30 PM LMST.

FEDERAL COMMUNICATIONS COMMISSION
SATELLITE SPACE STATION AUTHORIZATIONS
FCC Form 312 - Schedule S: (Technical and Operational Description)

S6. SERVICE AREA CHARACTERISTICS For each service area provide:

(a) Service Area ID	(b) Type of Associated Station (Earth or Space)	(c) Service Area Diagram File Name (GXT File)	(d) Service Area Description. Provide list of geographic areas (state postal codes or ITU 3-ltr codes), satellites or Figure No. of Service Area Diagram.

FEDERAL COMMUNICATIONS COMMISSION
SATELLITE SPACE STATION AUTHORIZATIONS
FCC Form 312 - Schedule S: (Technical and Operational Description)

S7. SPACE STATION ANTENNA BEAM CHARACTERISTICS For each antenna beam provide:

(a) Beam ID	(b) T/R Mode	Isotropic Antenna Gain		(e) Pointing Error (Degrees)	(f) Rotational Error (Degrees)	(g) Min. Cross-Polar Iso-lation (dB)	(h) Polar-ization Switch-able? (Y/N)	(i) Polarization Alignment Rel. Equatorial Plane (Degrees)	(j) Service Area ID	Transmit			Receive				
		(c) Peak (dBi)	(d) Edge (dBi)							(k) Input Losses (dB)	(l) Effective Output Power (W)	(m) Max. EIRP (dBW)	(n) System Noice Temp-erature (K)	(o) G/T at Max.Gain Pt. (dB/K)	(p) Min. Saturation Flux Density (dBW/m2)	Input Attenuator (dB)	
																(q) Max. Value	(r) Step Size
WB-L	T	29.1	28.1	1		23	N			9.8	0.98	28.1					
WB-R	T	29.1	28.1	1		23	N			9.8	0.98	28.1					
NB	T	-4.5	-11	0		0	N			8.8	0.46	-7.8					
CMD	R	-2	-11	0		0	N						927	-37.6	-98.7		

FEDERAL COMMUNICATIONS COMMISSION
SATELLITE SPACE STATION AUTHORIZATIONS
FCC Form 312 - Schedule S: (Technical and Operational Description)

Page 5: Beam Diagrams

S8. ANTENNA BEAM DIAGRAMS For each beam pattern provide the reference to the graphic image and numerical data:
Also provide the power flux density levels in each beam that result from the emission with the highest power flux density.

(a) Beam ID	(b) T/R Mode	(c) Co- or Cross-Polar Mode ("C" or "X")	(d) GSO Ref. Orbital Longitude (Deg. E/W)	(e) NGSO Antenna Gain Contour Description (Figure / Table / Exhibit)	(f) GSO Antenna Gain Contour Data (GXT File)	Max. Power Flux Density (dBW/m2 per Reference Bandwidth*) At Angle of Arrival above horizontal (for emission with highest PFD)					(l) Reference Bandwidth* (4kHz or 1MHz)
						(g) 5 Deg	(h) 10 Deg	(i) 15 Deg	(j) 20 Deg	(k) 25 Deg	

*Use a Reference Bandwidth of 4 kHz or 1 MHz as appropriate to the FCC Rules that apply to the subject frequency band (§ 25.208).

FEDERAL COMMUNICATIONS COMMISSION
SATELLITE SPACE STATION AUTHORIZATIONS
FCC Form 312 - Schedule S: (Technical and Operational Description)

S9. SPACE STATION CHANNELS For each frequency channel provide:

(a) Channel No.	(b) Assigned Bandwidth (kHz)	(c) T/R Mode	(d) Center Frequency (MHz)	(e) Polarization (H,V,L,R)	(f) TT&C or Comm Channel (T or C)
WB-L	375000	T	8185.0*	L	C
WB-R	375000	T	8185.0*	R	C
NB	120	T	8386.0	R	T
CMD	1316	R	2052.0	R	T

* The center frequency in this case is not the arithmetic mean between the lower frequency (8025 MHz) and the upper frequency (8400 MHz). DigitalGlobe employs a filtering process that ensures that only the spectrum between 8025 and 8400 MHz is used and that emissions are within acceptable levels.

S10. SPACE STATION TRANSPONDERS** For each transponder provide:

(a) Transponder ID	(b) Transponder Gain* (dB)	Receive Band		Transmit Band	
		(c) Channel No.	(d) Beam ID	(e) Channel No.	(f) Beam ID

*Transponder gain between output of receiving antenna and input of transmitting antenna.
**Also complete this table for half-links such as TT&C and on-board processing. In such cases, provide the receive or transmit information, as appropriate.

FEDERAL COMMUNICATIONS COMMISSION
SATELLITE SPACE STATION AUTHORIZATIONS
FCC Form 312 - Schedule S: (Technical and Operational Description)

S11. DIGITAL MODULATION PARAMETERS For each digital emission provide:

(a) Digital Mod. ID	(b) Emission Designator	(c) Assigned Bandwidth (kHz)	(d) No. of Phases	(e) Uncoded Data Rate (kbps)	(f) FEC Error Correction Coding Rate	(g) CDMA Processing Gain (dB)	(h) Total C/N Performance Objective (dB)	(i) Single Entry C/I Objective (dB)
WB-L	375MG7D	375000	4	348387	0.871		16.6	24
WB-R	375MG7D	375000	4	348387	0.871		16.6	24
NB	120KG1D	120	4	104.516	0.871		12.01	24
CMD	1M32G1D	1316	2	64.0	1		17.63	25

FEDERAL COMMUNICATIONS COMMISSION
SATELLITE SPACE STATION AUTHORIZATIONS
FCC Form 312 - Schedule S: (Technical and Operational Description)

S12. ANALOG MODULATION PARAMETERS For each analog emission provide:

(a) Analog Mod. ID	(b) Emission Designator	(c) Assigned Bandwidth (kHz)	(d) Signal Type* (see below)	(e) Channels per Carrier	Multi-channel Telephony				(j) Video Standard NTSC, PAL, etc.	(k) Video Noise Weighting (dB)	(l) Video & SCPC/FM Modulation Index	(m) SCPC/FM Compander, Preemphasis, & Noise Weighting (dB)	(n) Total C/N Performance Objective (dB)	(o) Single Entry C/I Objective (dB)
					(f) Ave. Companded Talker Level (dBm0)	(g) Bottom Baseband Freq. (MHz)	(h) Top Baseband Freq. (MHz)	(i) RMS Modulation Index						

*Indicate whether signal is (a) FDM/FM, (b) CSSB/AM, (c) SCPC/FM, or (d) TV/FM.

FEDERAL COMMUNICATIONS COMMISSION
SATELLITE SPACE STATION AUTHORIZATIONS
FCC Form 312 - Schedule S: (Technical and Operational Description)

S13. TYPICAL EMISSIONS For each planned type of emission provide:

Associated Transponder ID Range		Modulation ID		(e) Carriers per Transponder	(f) Carrier Spacing (kHz)	(g) Noise Budget Reference (Table No.)	(h) Energy Dispersal Bandwidth* (kHz)	Receive Band (Assoc.Transmit Stn)			Transmit Band (This Space Station)				
								(i)Assoc.Stn Max.Antenna Gain (dBi)	Assoc. Station Transmit Power (dBW)		EIRP (dBW)		Max. Power Flux Density		(p) Assoc. Stn Rec. G/T (dB/K)
(a) Start	(b) End	(c) Digital (Table S11)	(d) Analog (Table S12)						(j) Min.	(k) Max.	(l) Min.	(m) Max.	(n)dBW/m2	(o)Ref. BW** (4kHz or 1MHz)	

* For those emissions using energy dispersal, provide the bandwidth of the energy dispersal. Otherwise, leave blank.
**Use a Reference Bandwidth of 4 kHz or 1 MHz as appropriate to the FCC Rules that apply to the subject frequency band (§ 25.208).

FEDERAL COMMUNICATIONS COMMISSION
SATELLITE SPACE STATION AUTHORIZATIONS
FCC Form 312 - Schedule S: (Technical and Operational Description)

S14. Is the space station(s) controlled and monitored remotely? If YES, provide the location and telephone number of the TT&C control point(s). [X] **YES** [ ] **NO**

Remote Control (TT&C) Location(s):

S14a. Street Address			
DigitalGlobe MCC: 1601 Dry Creek Drive, Suite 260			
S14b. City	S14c. County	S14d. State / Country	S14e. Zip Code
Longmont	Boulder	CO	80503
S14f. Telephone Number	S14g. Call Sign of Control Station (if appropriate)		
303-684-4000	None		

S14a. Street Address			
S14b. City	S14c. County	S14d. State / Country	S14e. Zip Code
S14f. Telephone Number	S14g. Call Sign of Control Station (if appropriate)		

S14a. Street Address			
S14b. City	S14c. County	S14d. State / Country	S14e. Zip Code
S14f. Telephone Number	S14g. Call Sign of Control Station (if appropriate)		

S14a. Street Address			
S14b. City	S14c. County	S14d. State / Country	S14e. Zip Code
S14f. Telephone Number	S14g. Call Sign of Control Station (if appropriate)		

S14a. Street Address			
S14b. City	S14c. County	S14d. State / Country	S14e. Zip Code
S14f. Telephone Number	S14g. Call Sign of Control Station (if appropriate)		

S14a. Street Address			
S14b. City	S14c. County	S14d. State / Country	S14e. Zip Code
S14f. Telephone Number	S14g. Call Sign of Control Station (if appropriate)		

S15. SPACECRAFT PHYSICAL CHARACTERISTICS

S15a. Mass of spacecraft without fuel (kg)	Spacecraft Dimensions (meters)	Probability of Survival to End of Life (0.0 - 1.0)
1969		
S15b. Mass of fuel & disposables at launch (kg)		
454		
S15c. Mass of spacecraft and fuel at launch (kg)	S15f. Length (m)	S15i. Payload
2423	7.73	0.92
S15d. Mass of fuel, in orbit, at beginning of life (kg)	S15g. Width (m)	S15j. Bus
454	7.73	0.76
S15e. Deployed Area of Solar Array (square meters)	S15h. Height (m)	S15k. Total
16	5.33	0.70

S16. SPACECRAFT ELECTRICAL CHARACTERISTICS

Spacecraft Subsystem	Electrical Power (Watts) At Beginning of Life		Electrical Power (Watts) At End of Life	
	At Equinox	At Solstice	At Equinox	At Solstice
Payload (Watts)	(a) 297	(f) 297	(k) 297	(p) 297
Bus (Watts)	(b) 1065	(g) 1065	(l) 1065	(q) 1065
Total (Watts)	(c) 1362	(h) 1362	(m) 1362	(r) 1362
Solar Array (Watts)	(d) 3670	(i) 3817	(n) 3494	(s) 3641
Depth of Battery Discharge (%)	(e) 14 %	(j) 14 %	(o) 17 %	(t) 17 %

S17. CERTIFICATIONS

a. Are the power flux density limits of § 25.208 met?	☒ **YES**	☐ **NO**	☐ **N/A**
b. Are the appropriate service area coverage requirements of § 25.143(b)(ii) and (iii), or § 25.145(c)(1) and (2) met?	☐ **YES**	☐ **NO**	☒ **N/A**
c. Are the frequency tolerances of § 25.202(e) and the out-of-band emission limits of § 25.202(f)(1), (2), and (3) met?	☒ **YES**	☐ **NO**	☐ **N/A**

In addition to the information required in this Form, the space station applicant is required to provide all the information specified in Section 25.114 of the Commission's rules, 47 C.F.R. § 25.114.

ATTACHMENT B

LINK BUDGETS AND SUMMARY POWER FLUX DENSITY GRAPHS

WV-4
400 Mbps DATA RATE DOWNLINK ANALYSIS **Fairbanks, AK**

Fo = 8.185 GHz **OQPSK Modulation** **770 km Altitude**

DOWNLINK PARAMETERS:

Frequency	8185	GHz
Orbit height in km	770	km
Local elevation above horizon	5	degrees
Data rate	400	Mbps
Bandwidth (baseband)	200	MHz
Spacecraft ant. EIRP (incl pointing loss)	57.1	dBm
Slant range	2718.88	km
Ground ant. G/T	31.4	dB/K
BER	3.00E-05	
Required Eb/No (without coding)	9.4	dB
Hardware imp. BER loss	-2.5	dB

LINK CALCULATION:

TOTAL POWER TO GROUND:

Satellite EIRP (min)	57.1	dBm
Path loss	-179.4	dB
Total loss (rain)	-1.7	dB

RECEIVER SENSITIVITY:

Required Eb/No	9.4	dB
Crosspol Interference Loss	-0.3	dB
Received C/N (incl rain depol, crosspol)	23.4	dB
Implementation Loss	-2.5	dB
Available Eb/No	20.4	dB
DOWNLINK MARGIN	**8.5**	**dB**

ANTENNA SIZES:

Spacecraft Antenna Segment

Spacecraft antenna diameter	19.7	inches
Approx. HPBW	6.3	degrees
Gain of spacecraft antenna	29.1	dBic
Loss between HPA out and ant. Input	-9.8	dB
Pointing Loss	-1.0	dB
Transmitter Po	7.5	watts
EIRP of satellite system (min)	57.1	dBm

Ground Antenna Segment

Ground antenna G/T	31.4	dB/K
System noise temperature	143.9	K (referenced at antenna output)
Ground antenna diameter	7.3	meters
Approx. HPBW	0.4	degrees

WV-4
400 Mbps DATA RATE DOWNLINK ANALYSIS **Fairbanks, AK**

Fo = 8.185 GHz **OQPSK Modulation** **617** **km Altitude**

DOWNLINK PARAMETERS:

Frequency	8185	GHz
Orbit height in km	617	km
Local elevation above horizon	5	degrees
Data rate	400	Mbps
Bandwidth (baseband)	200	MHz
Spacecraft ant. EIRP (incl pointing loss)	57.1	dBm
Slant range	2369.89	km
Ground ant. G/T	31.4	dB/K
BER	3.00E-05	
Required Eb/No (without coding)	9.4	dB
Hardware imp. BER loss	-2.5	dB

LINK CALCULATION:

TOTAL POWER TO GROUND:

Satellite EIRP (min)	57.1	dBm
Path loss	-178.2	dB
Total loss (rain)	-1.7	dB

RECEIVER SENSITIVITY:

Required Eb/No	9.4	dB
Crosspol Interference Loss	-0.3	dB
Received C/N (incl rain depol, crosspol)	24.4	dB
Implementation Loss	-2.5	dB
Available Eb/No	21.4	dB
DOWNLINK MARGIN	**9.5**	**dB**

ANTENNA SIZES:

Spacecraft Antenna Segment

Spacecraft antenna diameter	19.7	inches
Approx. HPBW	6.3	degrees
Gain of spacecraft antenna	29.1	dBic
Loss between HPA out and ant. Input	-9.8	dB
Pointing Loss	-1.0	dB
Transmitter Po	7.5	watts
EIRP of satellite system (min)	57.1	dBm

Ground Antenna Segment

Ground antenna		
G/T	31.4	dB/K
System noise temperature	143.9	K (referenced at antenna output)
Ground antenna diameter	7.3	meters
Approx. HPBW	0.4	degrees

WV-4
400 Mbps DATA RATE DOWNLINK ANALYSIS **Fairbanks, AK**

Fo = 8.185 GHz **OQPSK Modulation** **496** **km Altitude**

DOWNLINK PARAMETERS:

Frequency	8185	GHz
Orbit height in km	500	km
Local elevation above horizon	5	degrees
Data rate	400	Mbps
Bandwidth (baseband)	200	MHz
Spacecraft ant. EIRP (incl pointing loss)	57.1	dBm
Slant range	2077.94	km
Ground ant. G/T	31.4	dB/K
BER	3.00E-05	
Required Eb/No (without coding)	9.4	dB
Hardware imp. BER loss	-2.5	dB

LINK CALCULATION:
TOTAL POWER TO GROUND:

Satellite EIRP (min)	57.1	dBm
Path loss	-177.1	dB
Total loss (rain)	-1.7	dB

RECEIVER SENSITIVITY:

Required Eb/No	9.4	dB
Crosspol Interference Loss	-0.3	dB
Received C/N (incl rain depol, crosspol)	25.3	dB
Implementation Loss	-2.5	dB
Available Eb/No	22.3	dB
DOWNLINK MARGIN	**10.4**	**dB**

ANTENNA SIZES:
Spacecraft Antenna Segment

Spacecraft antenna diameter	19.7	inches
Approx. HPBW	6.3	degrees
Gain of spacecraft antenna	29.1	dBic
Loss between HPA out and ant. Input	-9.8	dB
Pointing Loss	-1.0	dB
Transmitter Po	7.5	watts
EIRP of satellite system (min)	57.1	dBm

Ground Antenna Segment

Ground antenna		
G/T	31.4	dB/K
System noise temperature	143.9	K (referenced at antenna output)
Ground antenna diameter	7.3	meters
Approx. HPBW	0.4	degrees

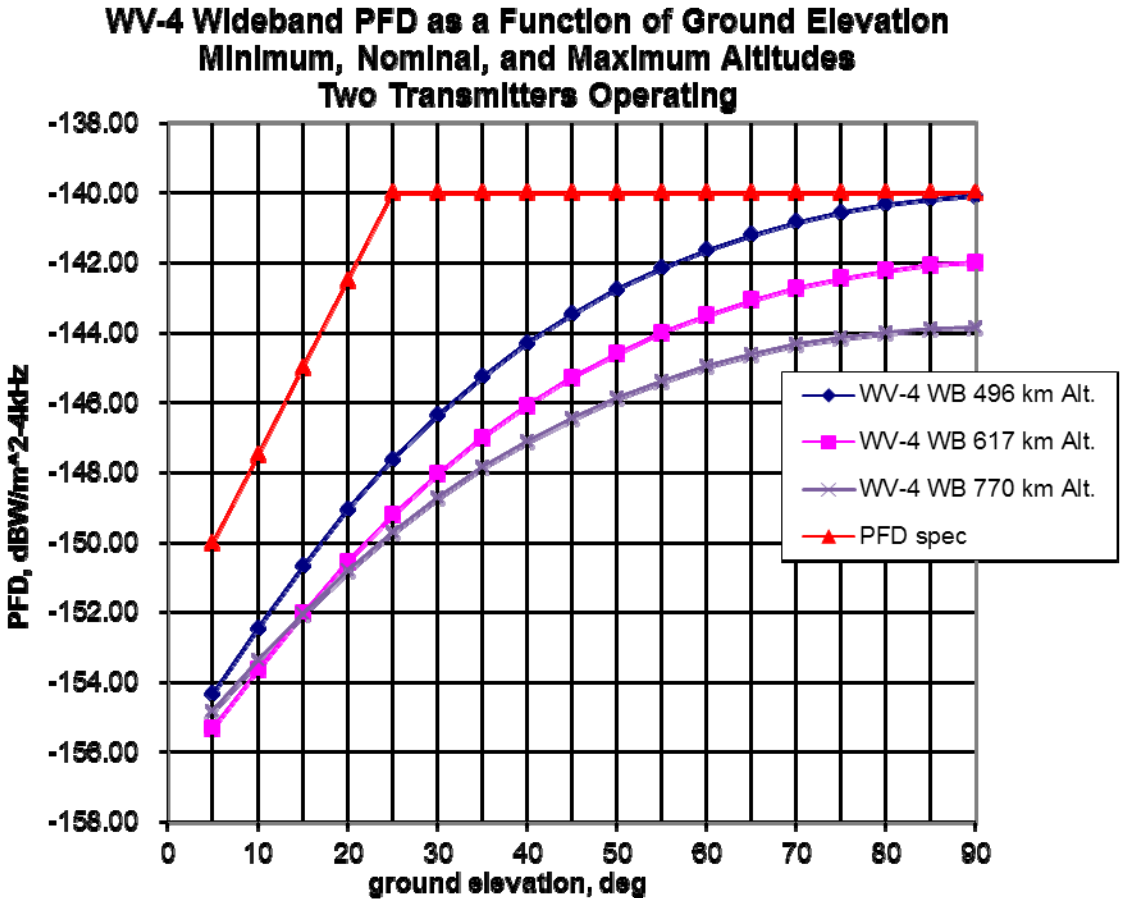


Table B-1. Maximum Wideband PFD versus Ground Elevation Angle

WV-4

TELEMETRY DOWNLINK **Fairbanks, AK**

FREQUENCY	8.386	GHz	WAVELENGTH	0.04	METERS
POWER	3.5	WATTS	5 DEG SLANT RANGE	2718.88	KM
ALTITUDE	770.0	KM			
DATA QPSK			DATA RATE	120	KBPS

MARGIN

DATA 8.2 dB

PARAMETER	UNITS	VALUE
TOTAL TRANSMIT POWER	dBm	35.4
PASSIVE LOSS	dB	-8.8
S/C ANTENNA GAIN	dBic	-7.8
FREE SPACE DISPERSION LOSS	dB	-179.6
ATMOSPHERIC LOSS	dB	-1.7
GROUND STATION G/T	dB/K	31.6
POLARIZATION LOSS	dB	-0.5
TOTAL RECEIVED POWER/T	dBm/K	-131.4
BOLTZMANN CONSTANT	dBm/Hz-K	-198.6
TOTAL RECEIVED POWER/KT	dB-Hz	67.2
DATA CHANNEL		
DATA POWER/KT	dB-Hz	67.2
INFORMATION RATE 104.7 KBPS	dB-Hz	50.2
AVAILABLE Eb/No	dB	17.0
IMPLEMENTATION LOSS	Db	-2.5
REQUIRED Eb/No 1.00E-6 BER	dB	10.5
CODING GAIN	dB	4.2
AVAILABLE SIGNAL MARGIN	**dB**	**8.2**

WV-4
TELEMETRY
DOWNLINK **Fairbanks, AK**

FREQUENCY	8.386	GHz	WAVELENGTH	0.04	METERS
POWER	3.5	WATTS	5 DEG SLANT RANGE	2369.89	KM
ALTITUDE	617.0	KM			
DATA QPSK			DATA RATE	120	KBPS

MARGIN
DATA 9.4 dB

PARAMETER	UNITS	VALUE
TOTAL TRANSMIT POWER	dBm	35.4
PASSIVE LOSS	dB	-8.8
S/C ANTENNA GAIN	dBic	-7.8
FREE SPACE DISPERSION LOSS	dB	-178.4
ATMOSPHERIC LOSS	dB	-1.7
GROUND STATION G/T	dB/K	31.6
POLARIZATION LOSS	dB	-0.5
TOTAL RECEIVED POWER/T	dBm/K	-130.2
BOLTZMANN CONSTANT	dBm/Hz-K	-198.6
TOTAL RECEIVED POWER/KT	dB-Hz	68.4

DATA CHANNEL		
DATA POWER/KT	dB-Hz	68.4
INFORMATION RATE 104.7 KBPS	dB-Hz	50.2
AVAILABLE Eb/No	dB	18.2
IMPLEMENTATION LOSS	dB	-2.5
REQUIRED Eb/No 1.00E-6 BER	dB	10.5
CODING GAIN	dB	4.2
AVAILABLE SIGNAL MARGIN	**dB**	**9.4**

WV-4

TELEMETRY DOWNLINK **Fairbanks, AK**

FREQUENCY	8.386	GHz	WAVELENGTH	0.04	METERS
POWER	3.5	WATTS	5 DEG SLANT RANGE	2077.94	KM
ALTITUDE	496.0	KM			
DATA QPSK			DATA RATE	120	KBPS

MARGIN

DATA 10.5 dB

PARAMETER	UNITS	VALUE
TOTAL TRANSMIT POWER	dBm	35.4
PASSIVE LOSS	dB	-8.8
S/C ANTENNA GAIN	dBic	-7.8
FREE SPACE DISPERSION LOSS	dB	-177.3
ATMOSPHERIC LOSS	dB	-1.7
GROUND STATION G/T	dB/K	31.6
POLARIZATION LOSS	dB	-0.5
TOTAL RECEIVED POWER/T	dBm/K	-129.1
BOLTZMANN CONSTANT	dBm/Hz-K	-198.6
TOTAL RECEIVED POWER/KT	dB-Hz	69.5
DATA CHANNEL		
DATA POWER/KT	dB-Hz	69.5
INFORMATION RATE 104.7 KBPS	dB-Hz	50.2
AVAILABLE Eb/No	dB	19.3
IMPLEMENTATION LOSS	dB	-2.5
REQUIRED Eb/No 1.00E-6 BER	dB	10.5
CODING GAIN	dB	4.2
AVAILABLE SIGNAL MARGIN	**dB**	**10.5**

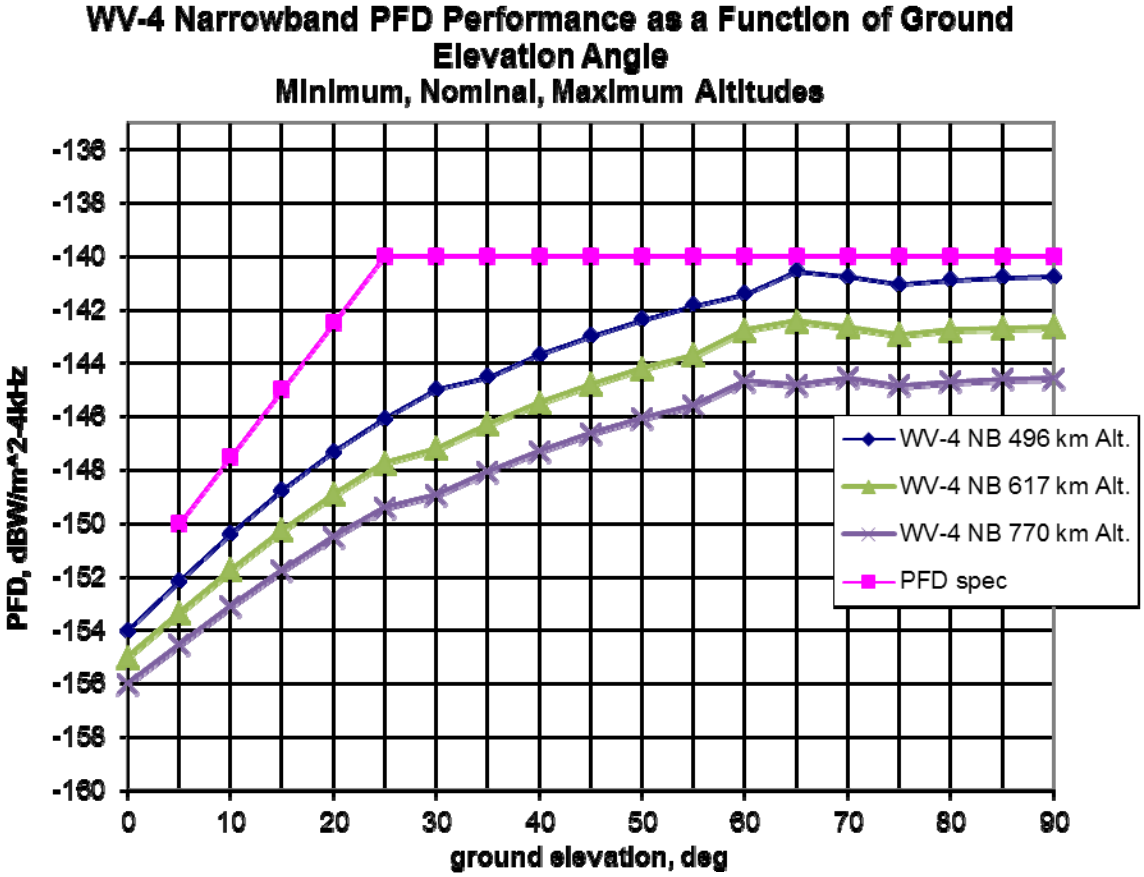


Table B-2. Maximum Narrowband PFD versus Ground Elevation Angle

WV-4
COMMAND
UPLINK

Fairbanks, AK

FREQUENCY	2.0520000	GHz			
UPLINK	53.0	dBW EIRP	WAVELENGTH	0.15	METERS
ALTITUDE	770.0	KM	5 DEG SLANT RANGE	2718.9	KM
			DATA RATE	64	KBPS
CMD MOD INDEX	1.57	RAD	MARGIN	12.9	dB

ANTENNA: OMNI NOMINAL

PARAMETER	UNIT	VALUE
UPLINK EIRP	dBW	53.0
FREE SPACE DISPERSION LOSS	dB	-167.4
POINTING LOSS	dB	0.0
ATMOSPHERIC LOSS	dB	0.9
S/C ANTENNA GAIN 90% COVERAGE	dBic	-3.2
POLARIZATION LOSS	dB	-0.4
S/C LINE LOSS	dB	-5.9
TOTAL S/C RECEIVED POWER	dBm	-94.8
SYSTEM TEMPERATURE	dB-K	29.7
G/T	dB/K	-38.8
RECEIVED C/N0	dB-Hz	74.1
REQUIRED BIT ERROR RATE		1.00E-06
RECEIVED EB/N0	dB	26.0
IMPLEMENTATION LOSS	dB	-2.5
REQUIRED EB/N0	dB	10.6
MARGIN	**dB**	**12.9**

WV-4
COMMAND
UPLINK

Fairbanks, AK

FREQUENCY	2.0520000	GHz			
UPLINK	53.0	dBW EIRP	WAVELENGTH	0.15	METERS
			5 DEG SLANT		
ALTITUDE	617.0	KM	RANGE	2369.9	KM
			DATA RATE	64	KBPS
CMD MOD INDEX	1.57	RAD	MARGIN	14.1	dB

ANTENNA: OMNI NOMINAL

PARAMETER	UNIT	VALUE
UPLINK EIRP	dBW	53.0
FREE SPACE DISPERSION LOSS	dB	-166.2
POINTING LOSS	dB	0.0
ATMOSPHERIC LOSS	dB	0.9
S/C ANTENNA GAIN 90% COVERAGE	dBic	-3.2
POLARIZATION LOSS	dB	-0.4
S/C LINE LOSS	dB	-5.9
TOTAL S/C RECEIVED POWER	dBm	-93.6
SYSTEM TEMPERATURE	dB-K	29.7
G/T	dB/K	-38.8
RECEIVED C/N0	dB-Hz	75.3
REQUIRED BIT ERROR RATE		1.00E-06
RECEIVED EB/N0	dB	27.2
IMPLEMENTATION LOSS	dB	-2.5
REQUIRED EB/N0	dB	10.6
MARGIN	**dB**	**14.1**

WV-4
COMMAND
UPLINK

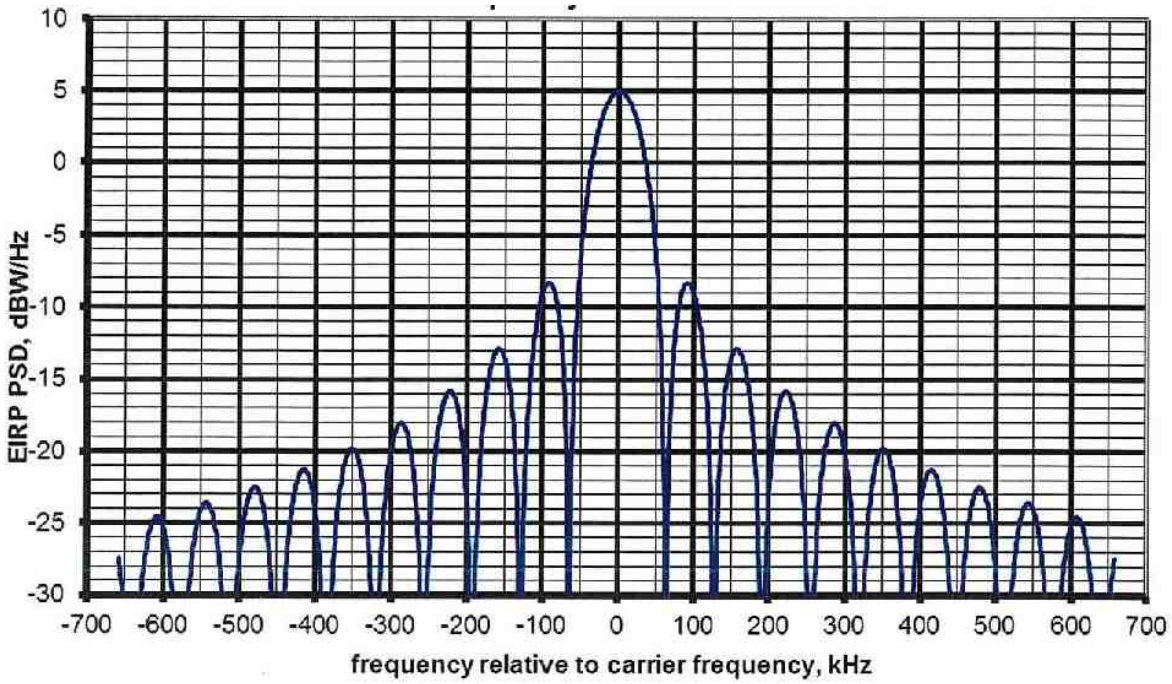
Fairbanks, AK

FREQUENCY	2.0520000	GHz			
UPLINK	53.0	dBW EIRP	WAVELENGTH	0.15	METERS
			5 DEG SLANT		
ALTITUDE	496.0	KM	RANGE	2077.9	KM
			DATA RATE	64	KBPS
CMD MOD INDEX	1.57	RAD	MARGIN	15.3	dB

ANTENNA: OMNI NOMINAL

PARAMETER	UNIT	VALUE
UPLINK EIRP	dBW	53.0
FREE SPACE DISPERSION LOSS	dB	-165.0
POINTING LOSS	dB	0.0
ATMOSPHERIC LOSS	dB	0.9
S/C ANTENNA GAIN 90% COVERAGE	dBic	-3.2
POLARIZATION LOSS	dB	-0.4
S/C LINE LOSS	dB	-5.9
TOTAL S/C RECEIVED POWER	dBm	-92.5
SYSTEM TEMPERATURE	dB-K	29.7
G/T	dB/K	-38.8
RECEIVED C/N0	dB-Hz	76.4
REQUIRED BIT ERROR RATE		1.00E-06
RECEIVED EB/N0	dB	28.4
IMPLEMENTATION LOSS	dB	-2.5
REQUIRED EB/N0	dB	10.6
MARGIN	**dB**	**15.3**

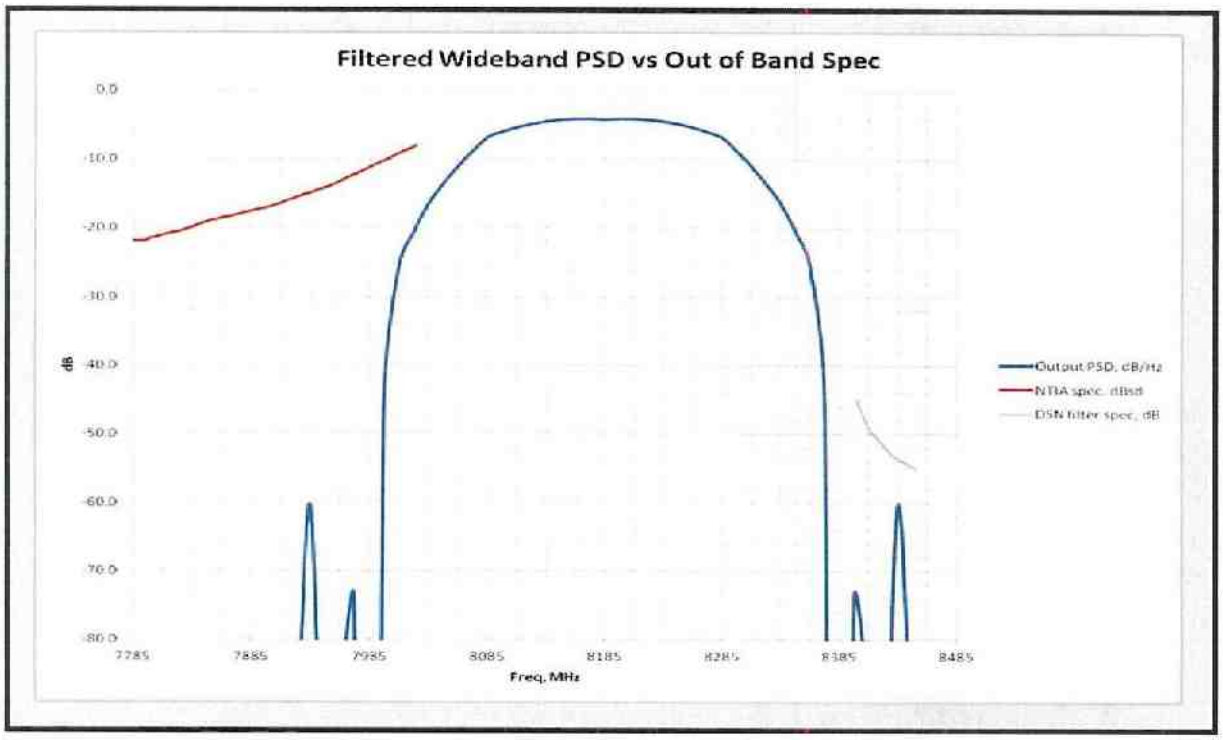
World View-4 Command Signal Spectrum



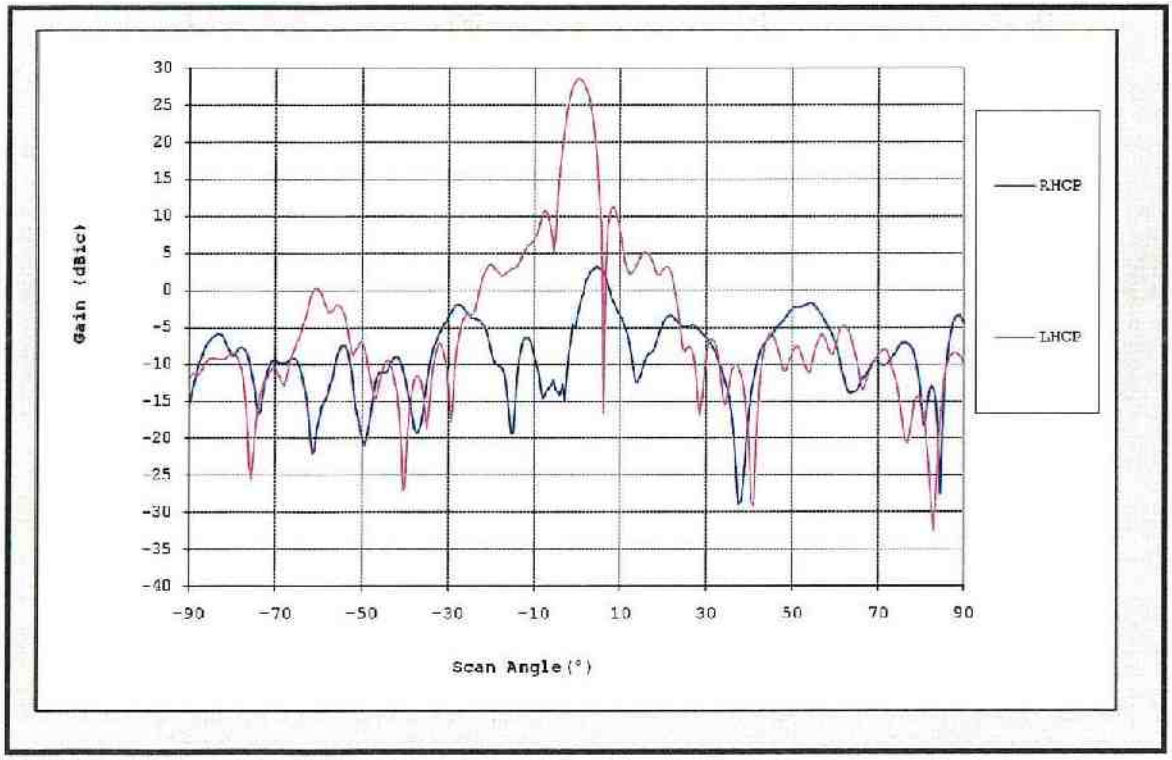
ATTACHMENT C

SPACE STATION ANTENNA PATTERNS

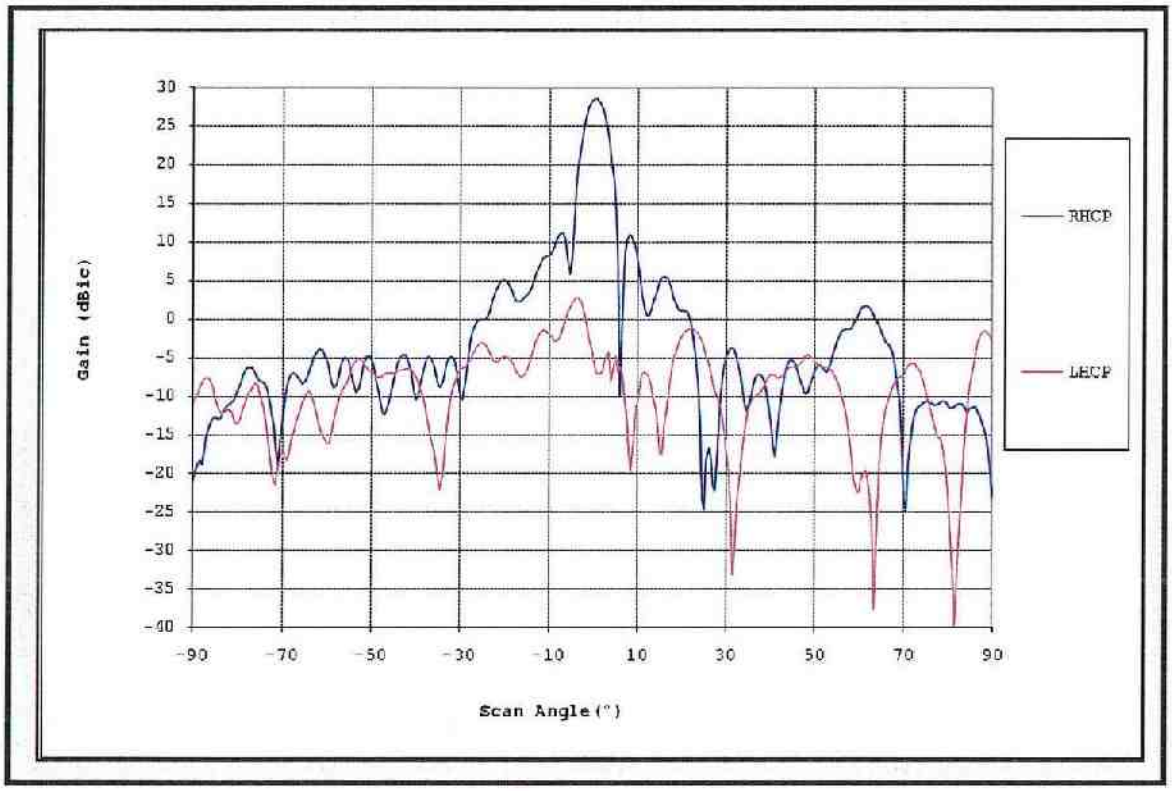
Wideband Downlink Signal Spectrum



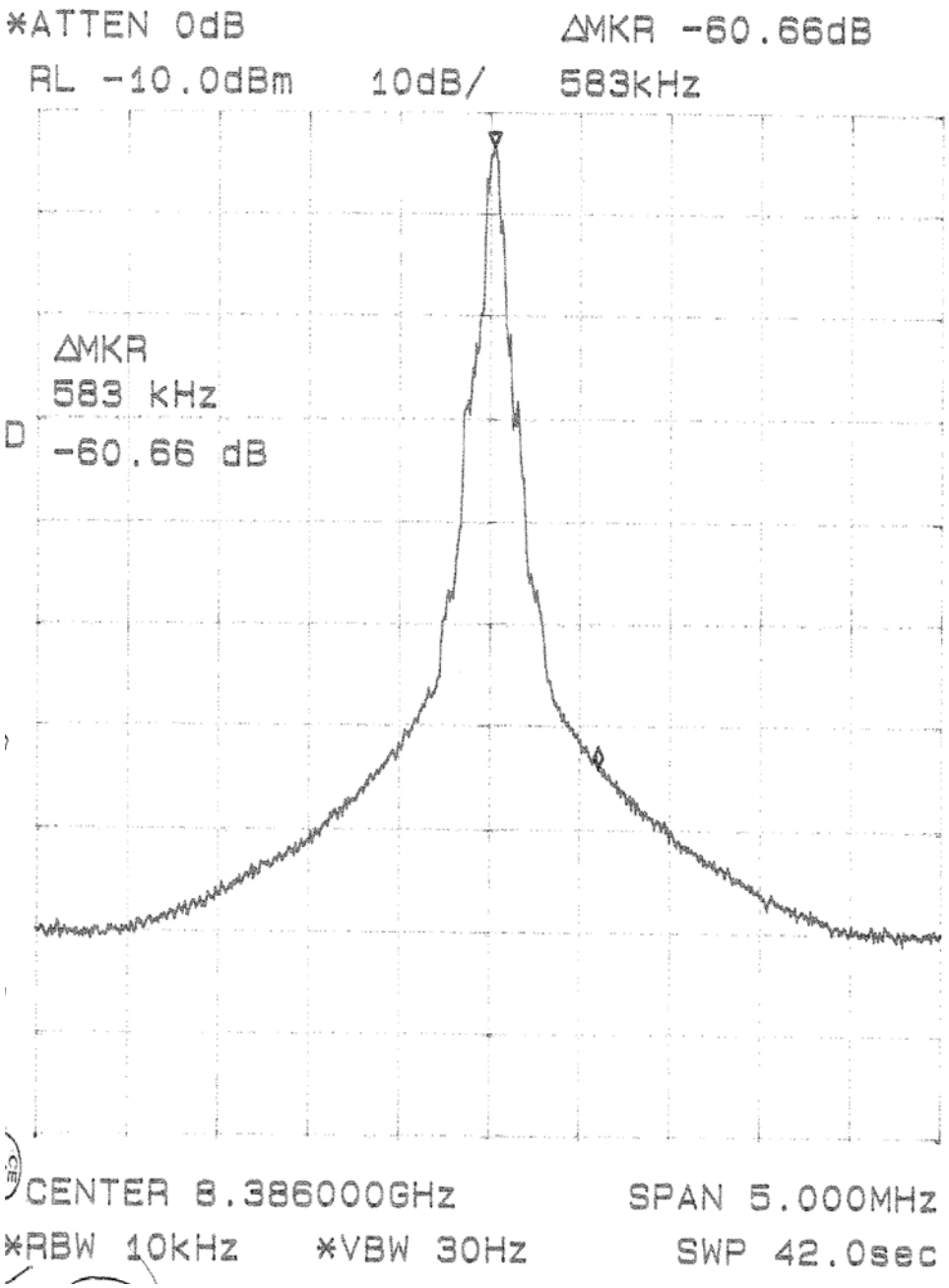
Left Hand CP Wideband Antenna Gain Pattern



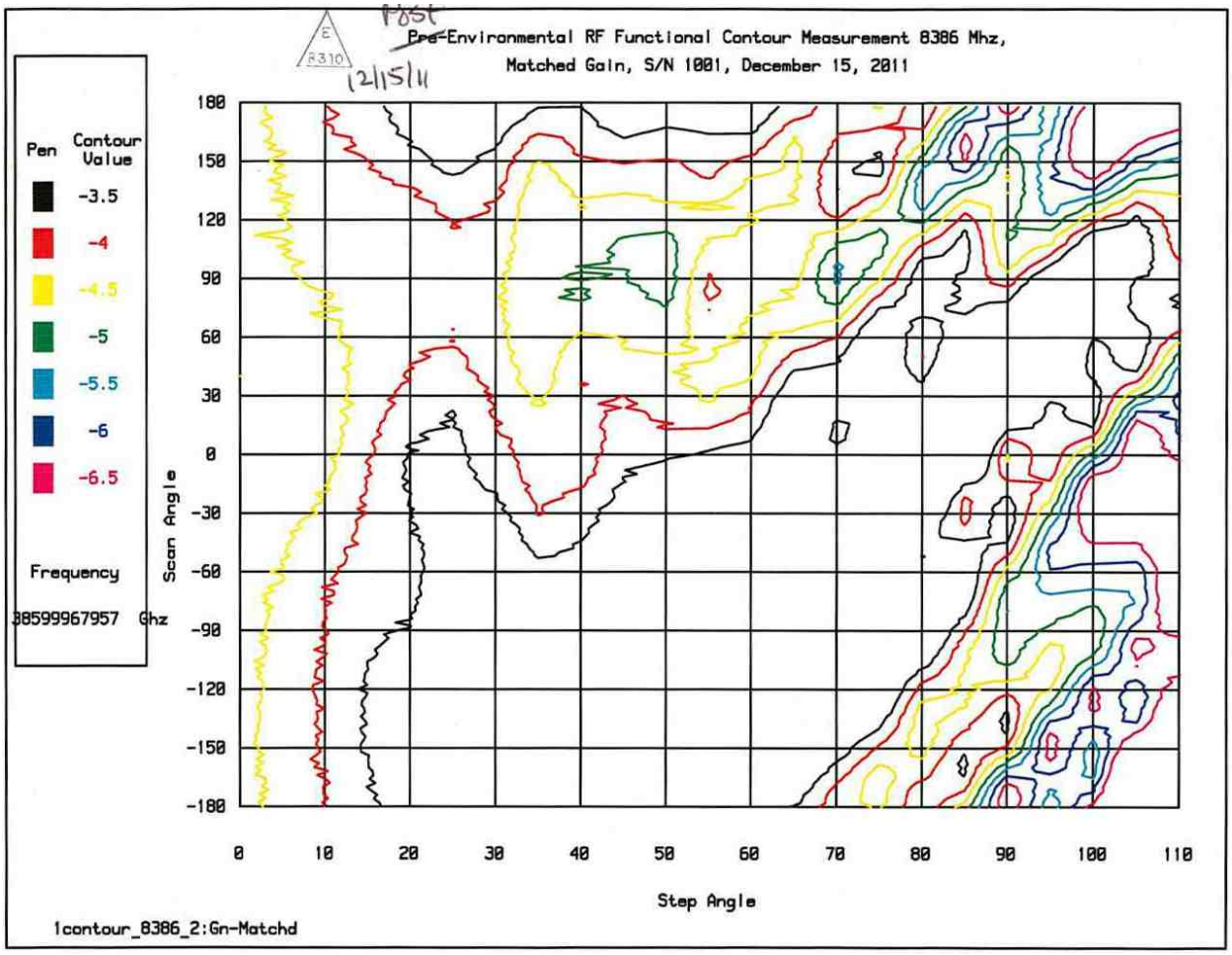
Right Hand CP Wideband Antenna Gain Pattern



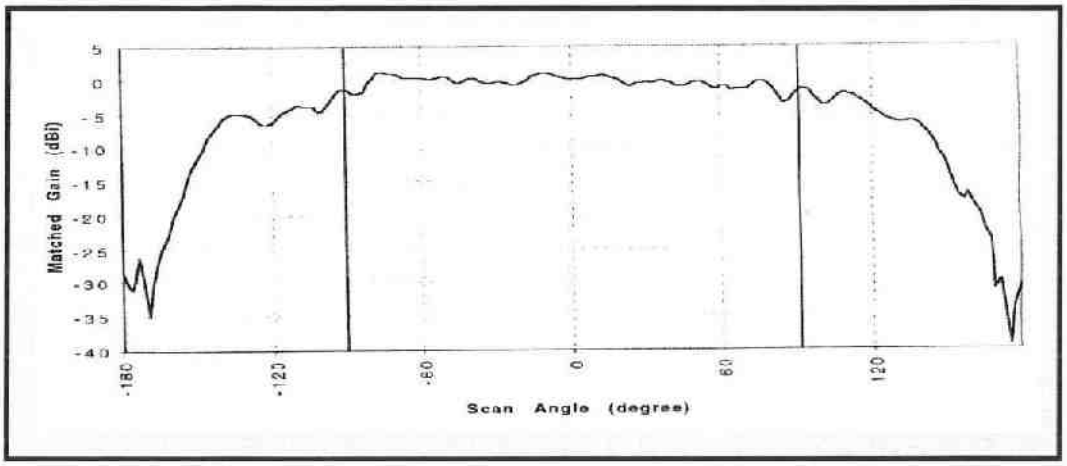
Narrowband Signal Spectrum



Narrowband Antenna Gain Pattern



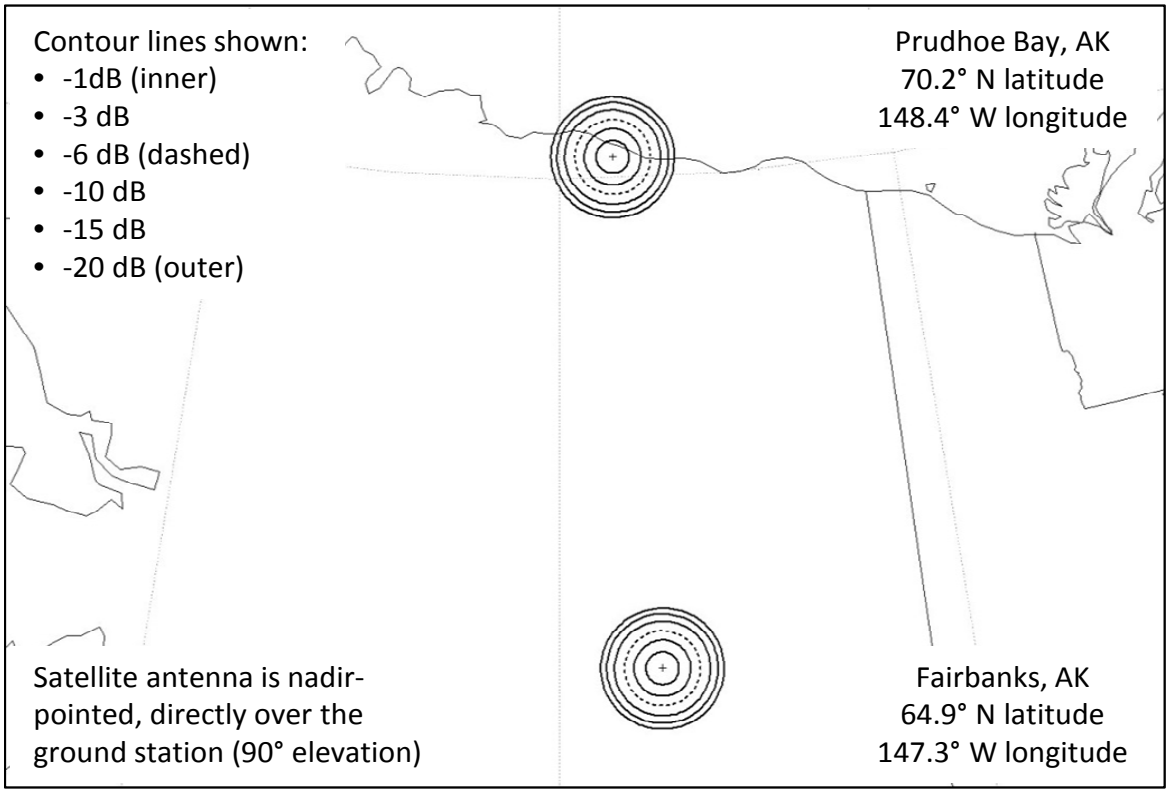
Command Receive Antenna Gain Plot



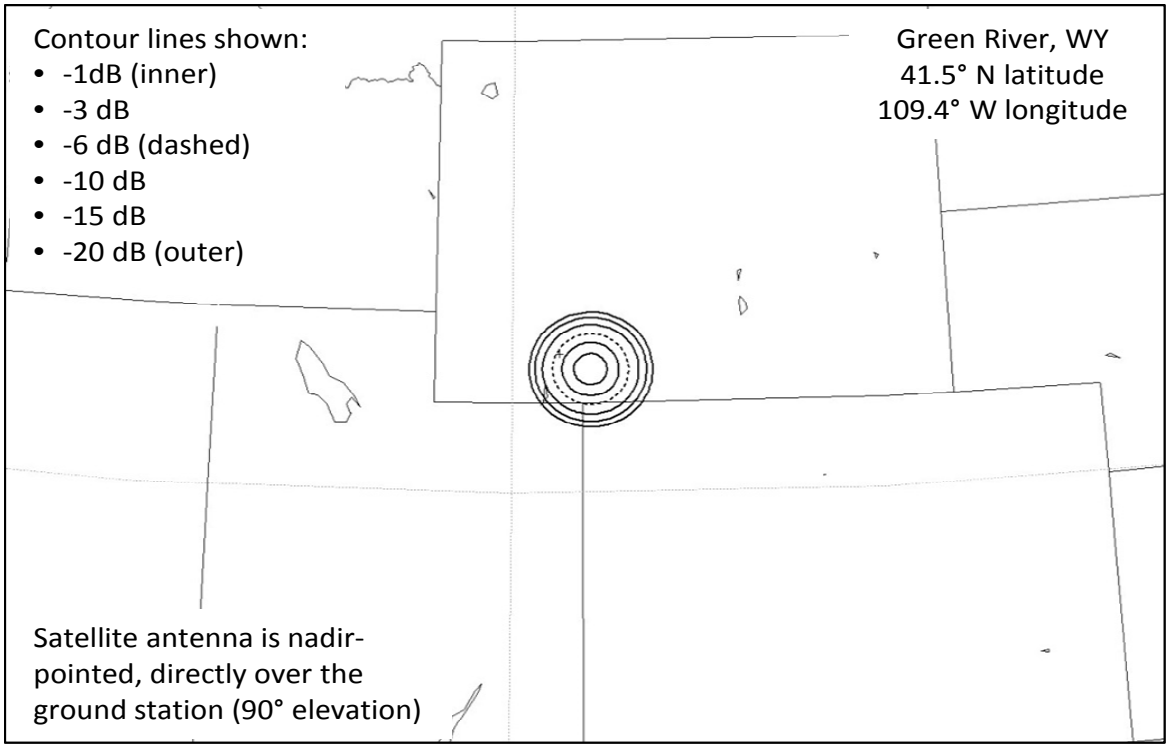
ATTACHMENT D

PREDICTED ANTENNA GAIN CONTOURS

Wideband Downlink Contours: 770 km Altitude (1 of 2)

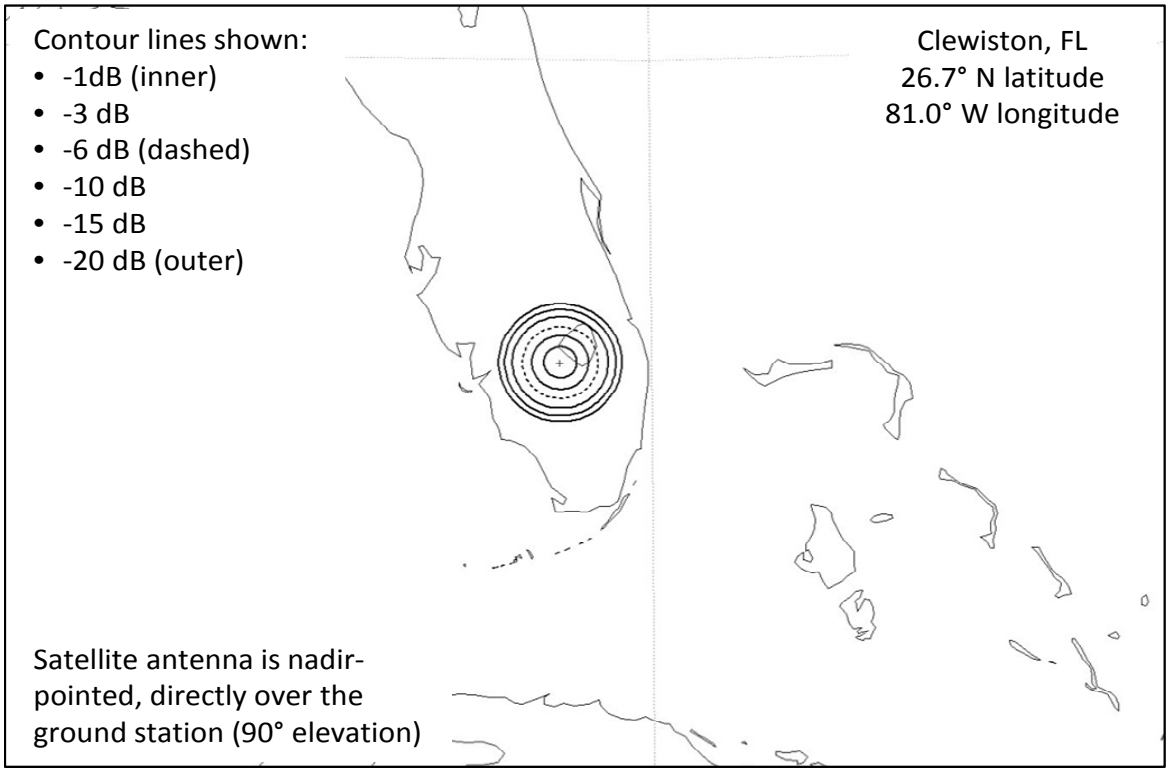


Prudhoe Bay and Fairbanks, AK

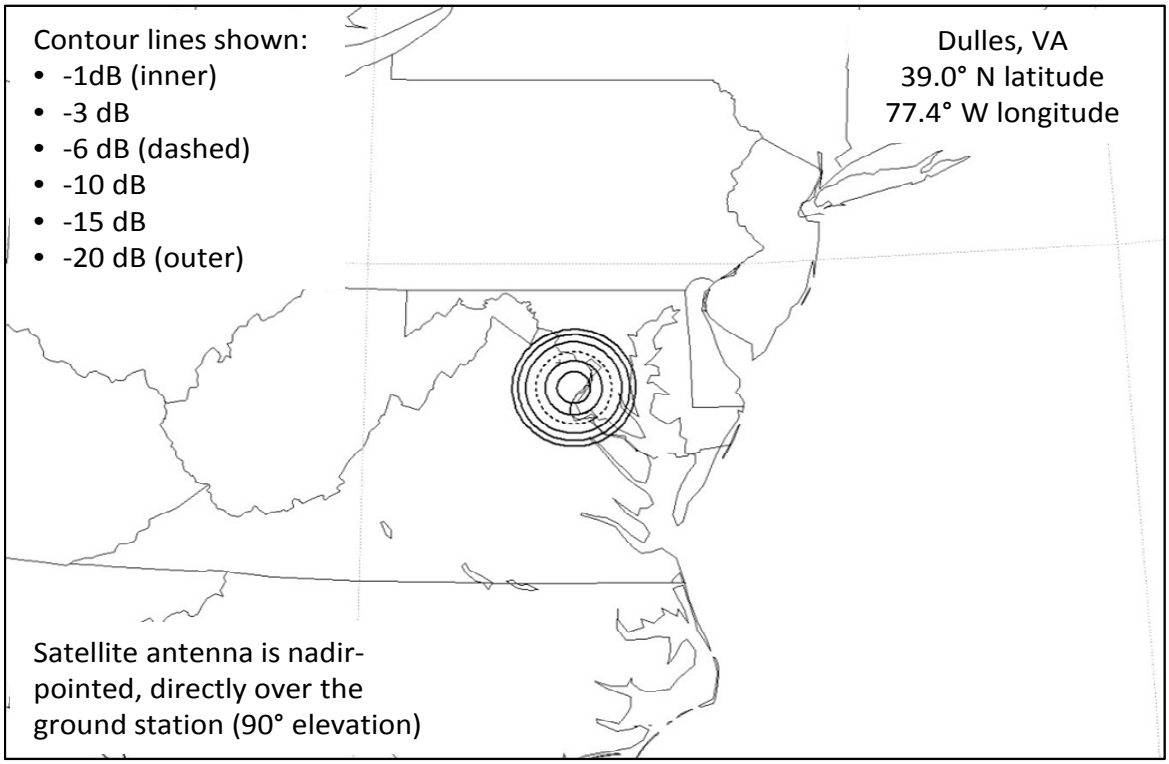


Green River, WY

Wideband Downlink Contours: 770 km Altitude (2 of 2)

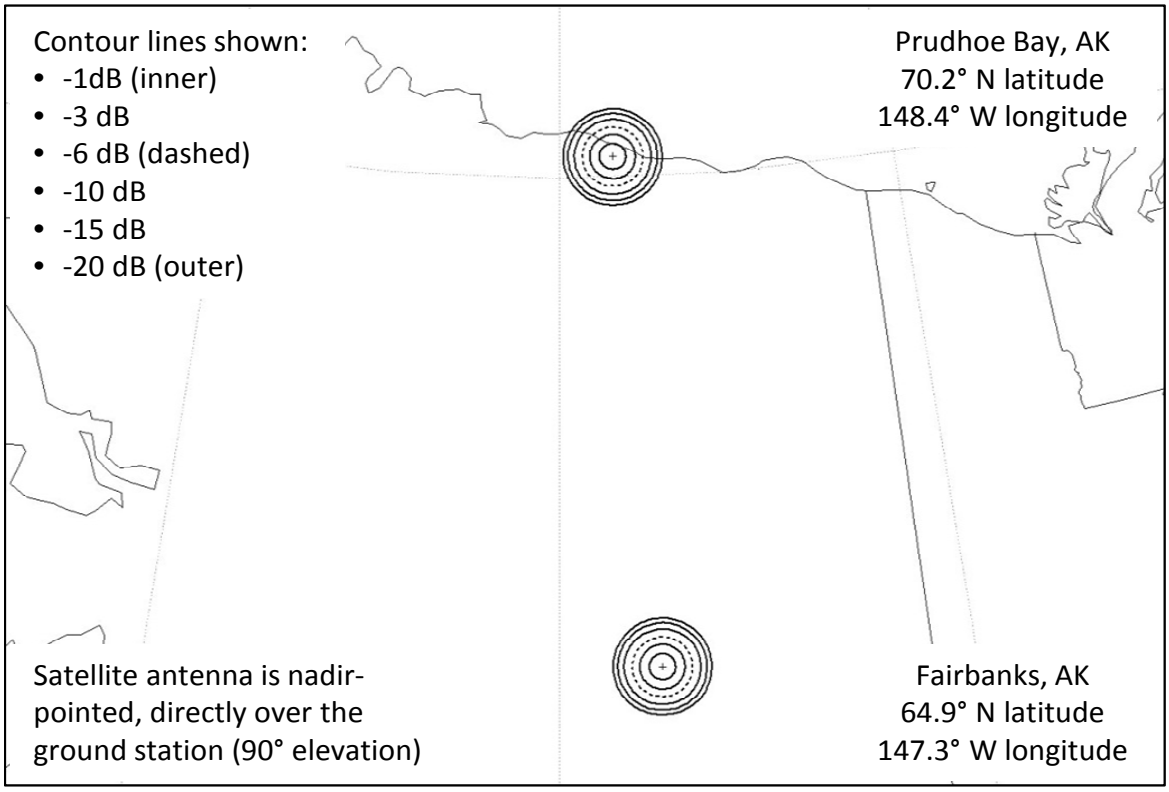


Clewiston, FL

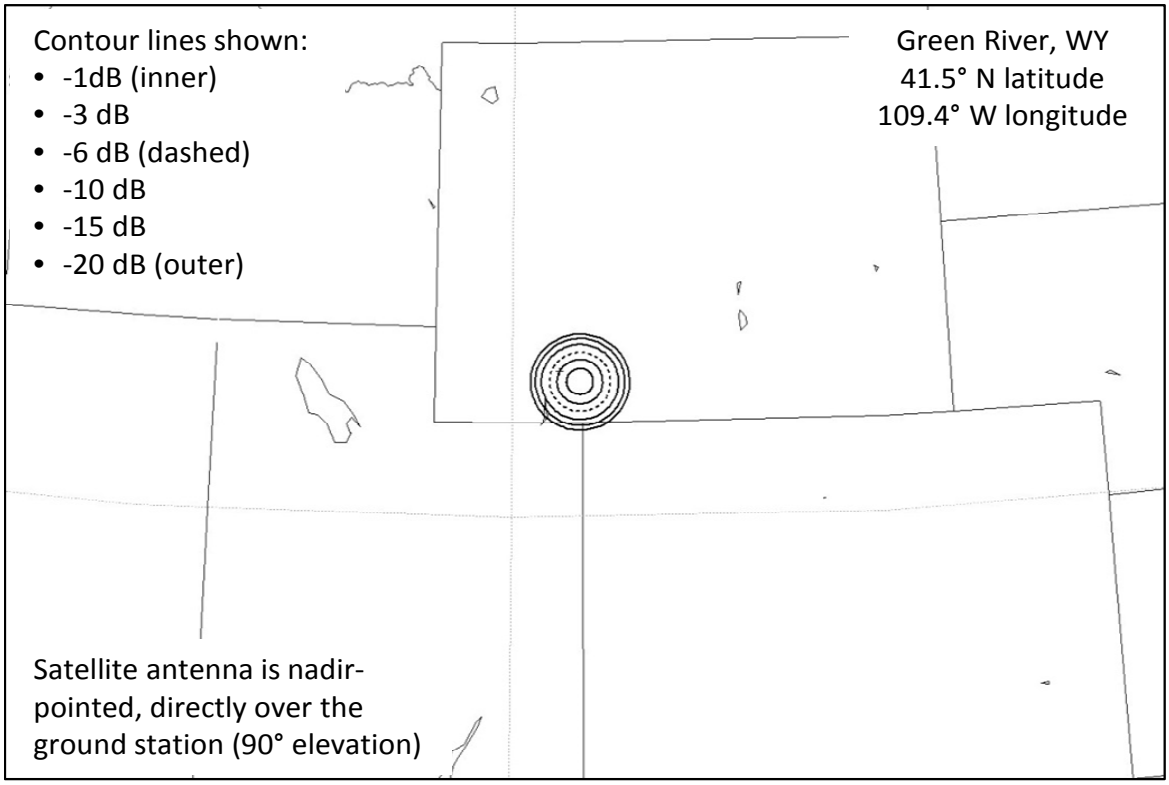


Dulles, VA

Wideband Downlink Contours: 617 km Altitude (1 of 2)

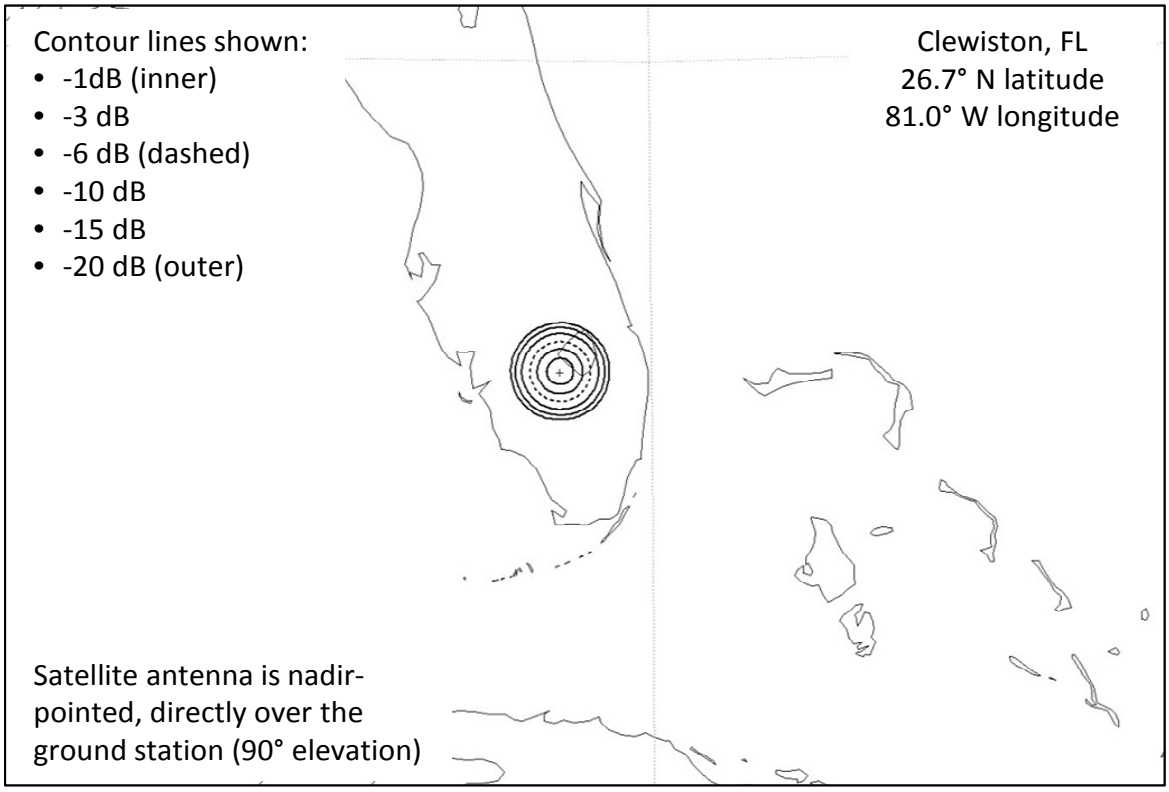


Prudhoe Bay and Fairbanks, AK

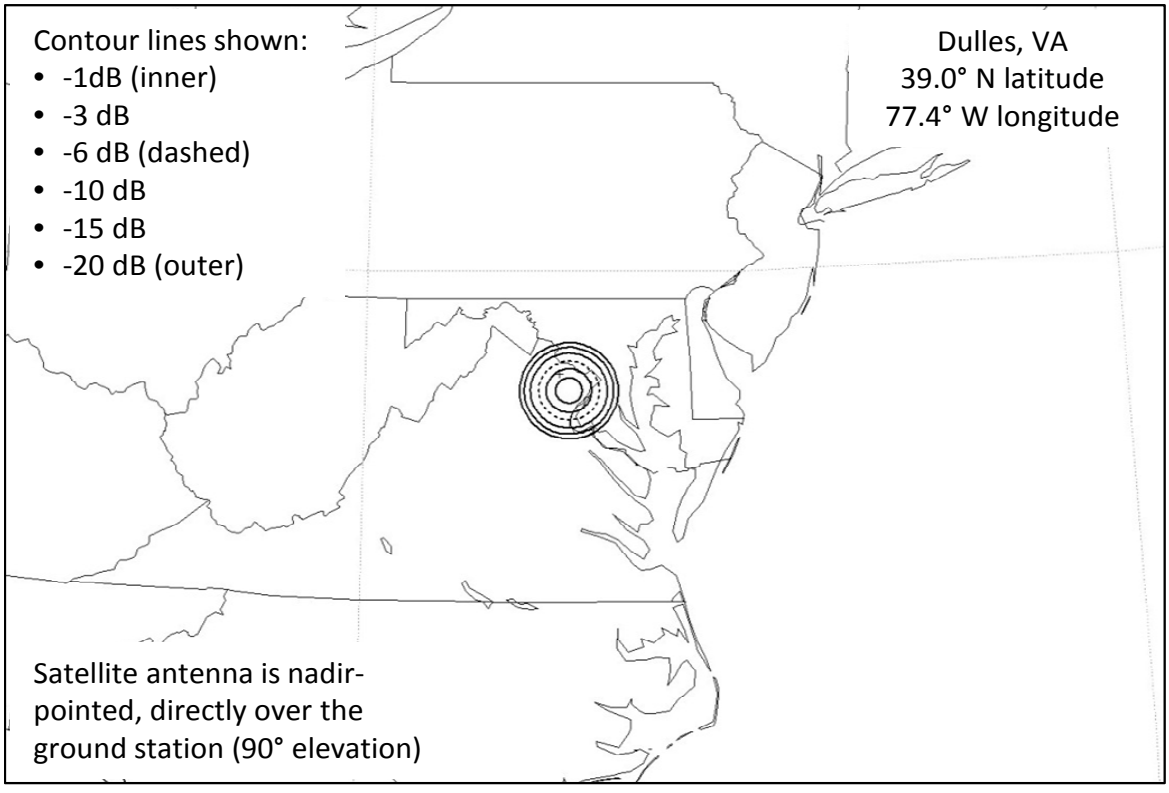


Green River, WY

Wideband Downlink Contours: 617 km Altitude (2 of 2)

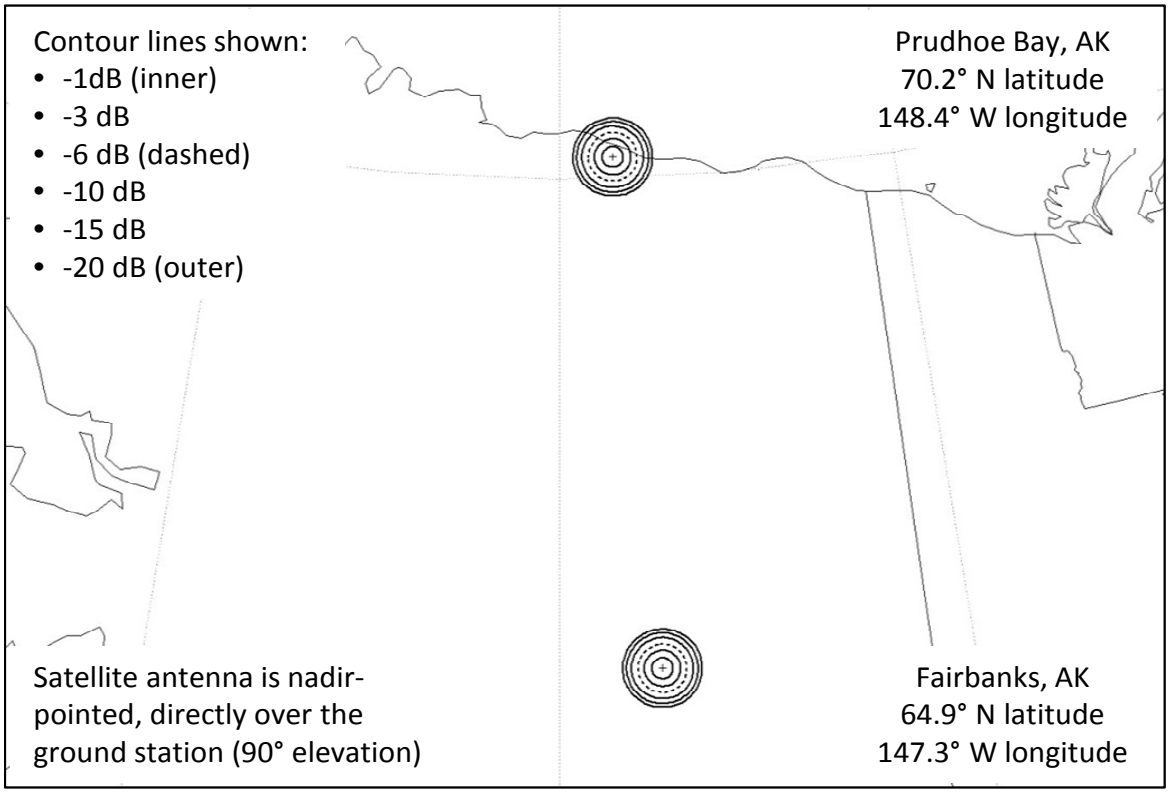


Clewiston, FL

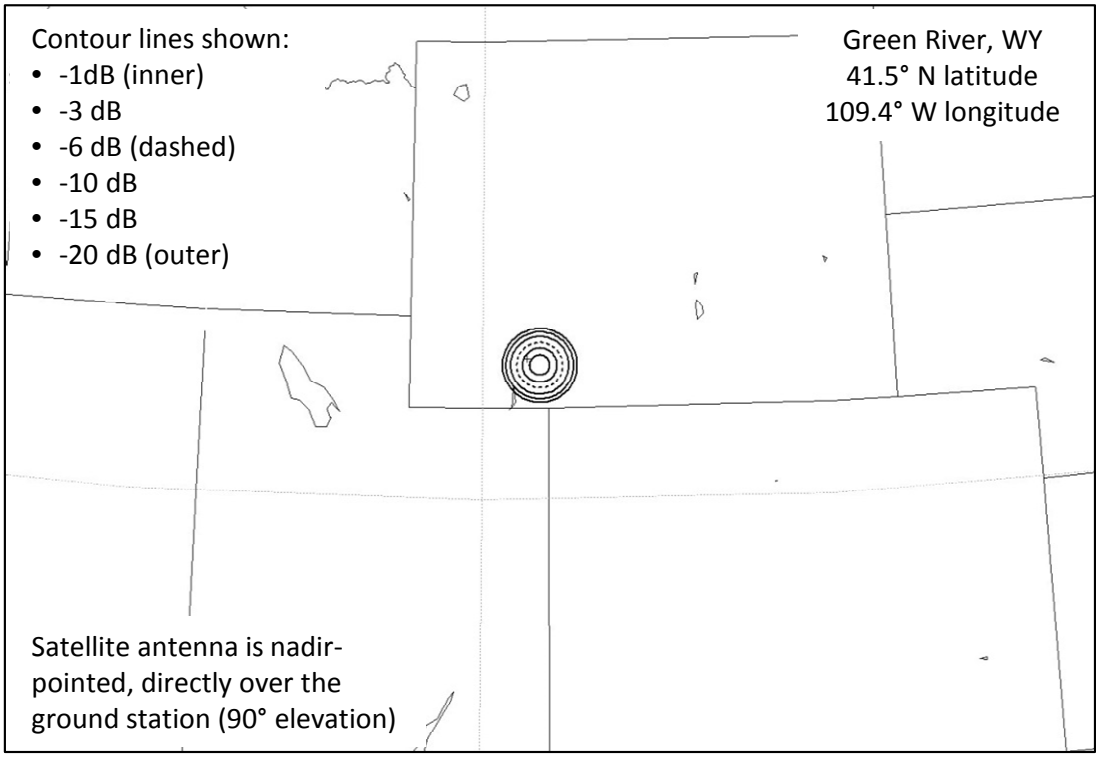


Dulles, VA

Wideband Downlink Contours: 496 km Altitude (1 of 2)

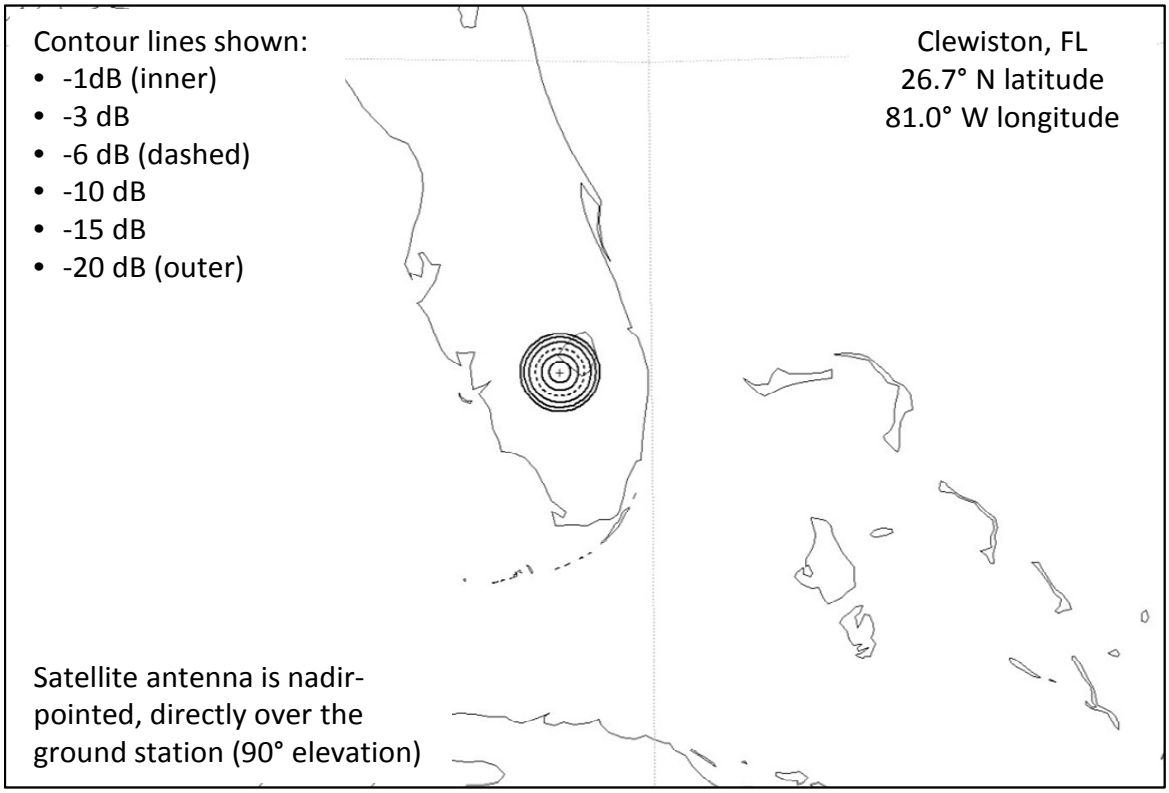


Prudhoe Bay and Fairbanks, AK

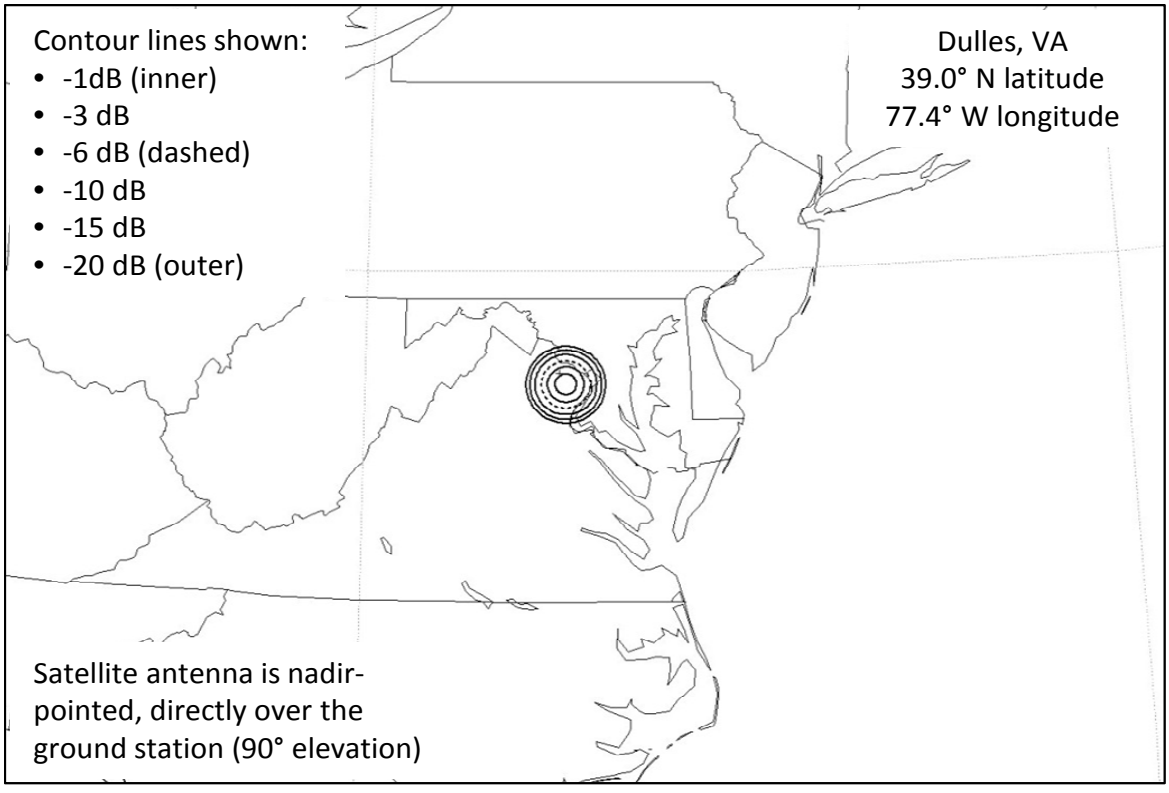


Green River, WY

Wideband Downlink Contours: 496 km Altitude (2 of 2)

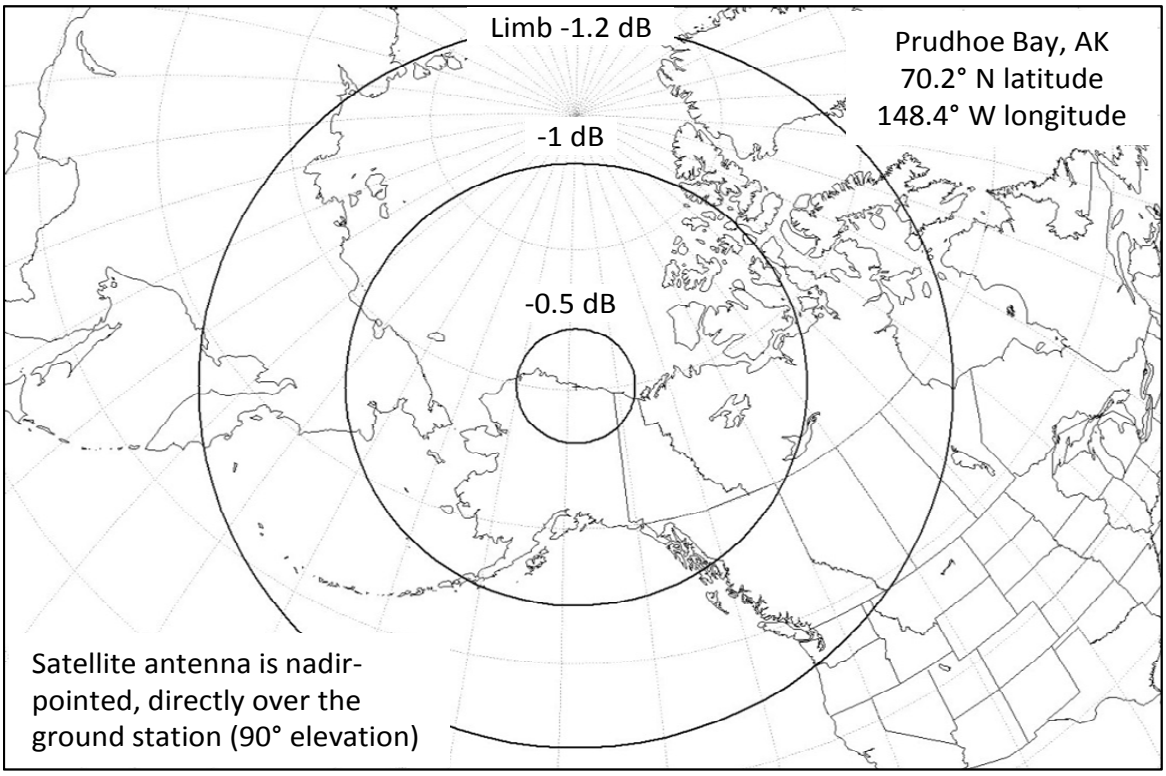


Clewiston, FL

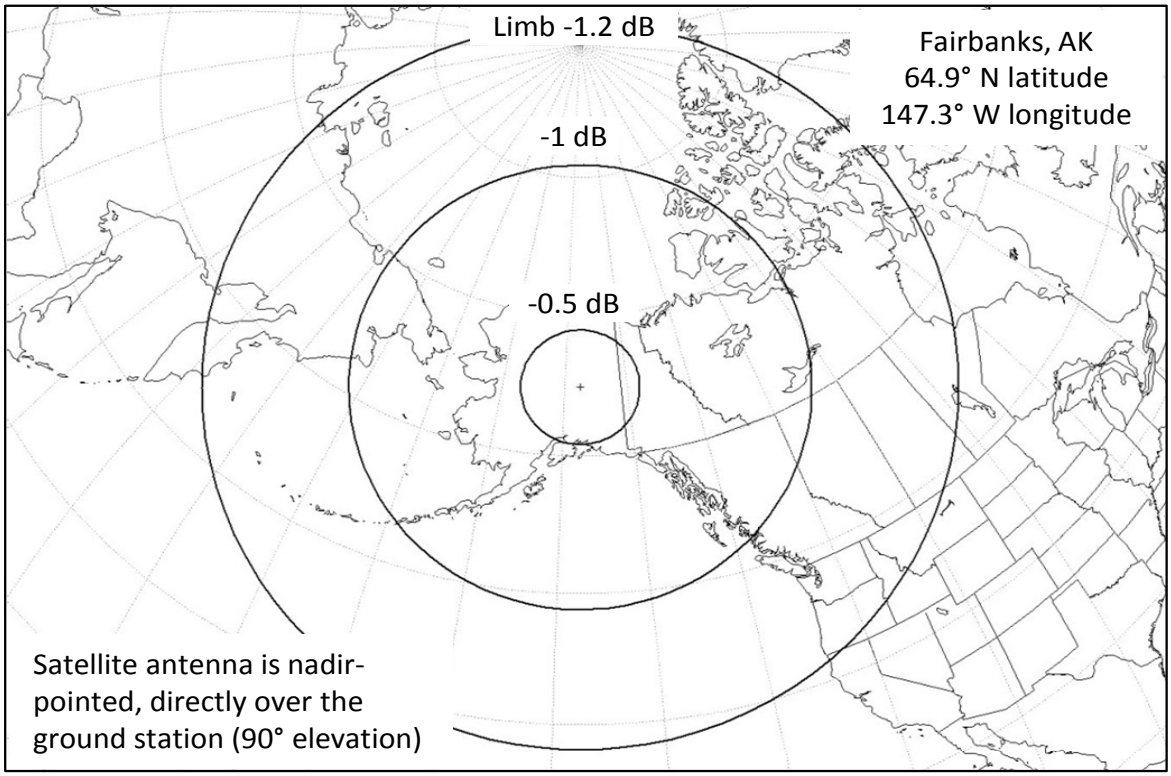


Dulles, VA

Narrowband Downlink Contours: 770 km Altitude (1 of 3)

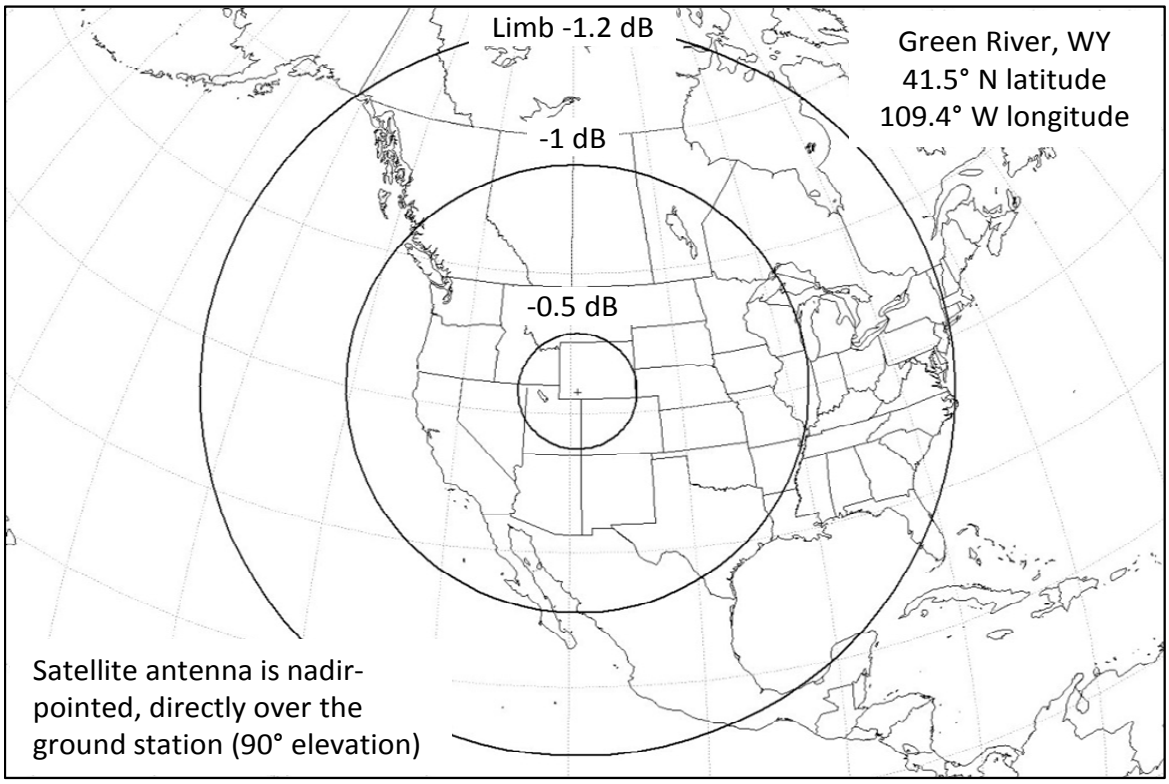


Prudhoe Bay, AK

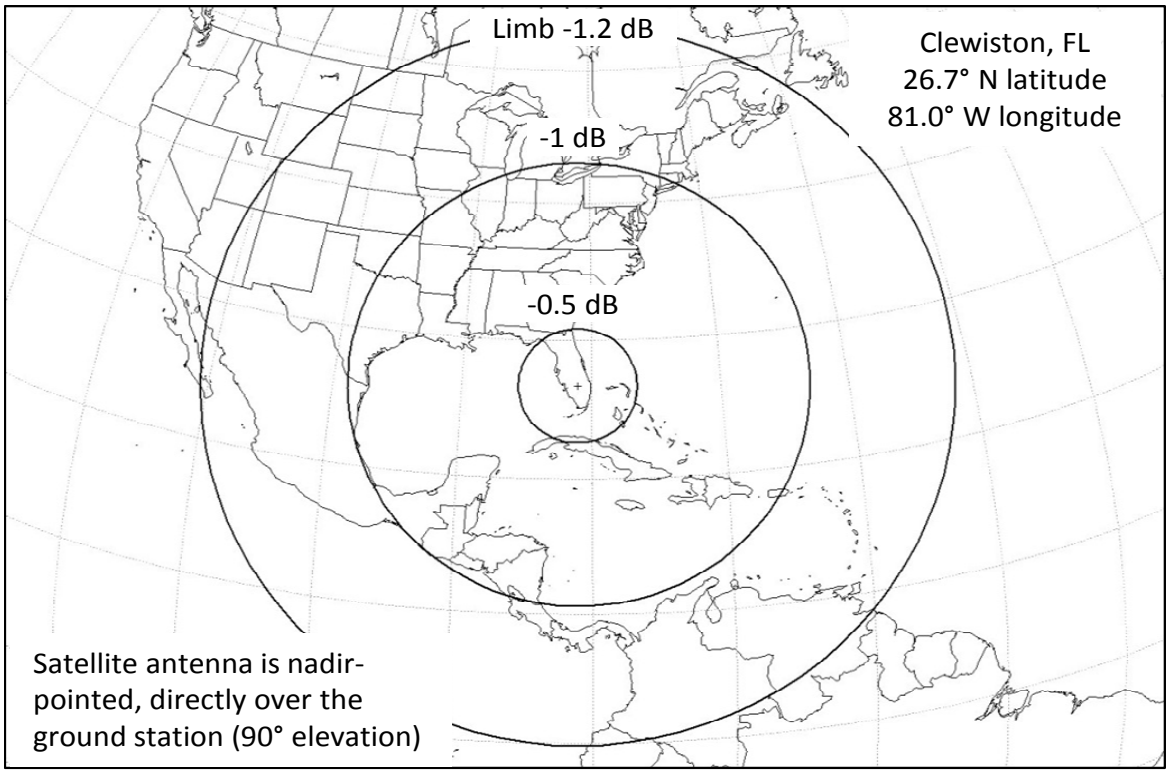


Fairbanks, AK

Narrowband Downlink Contours: 770 km Altitude (2 of 3)

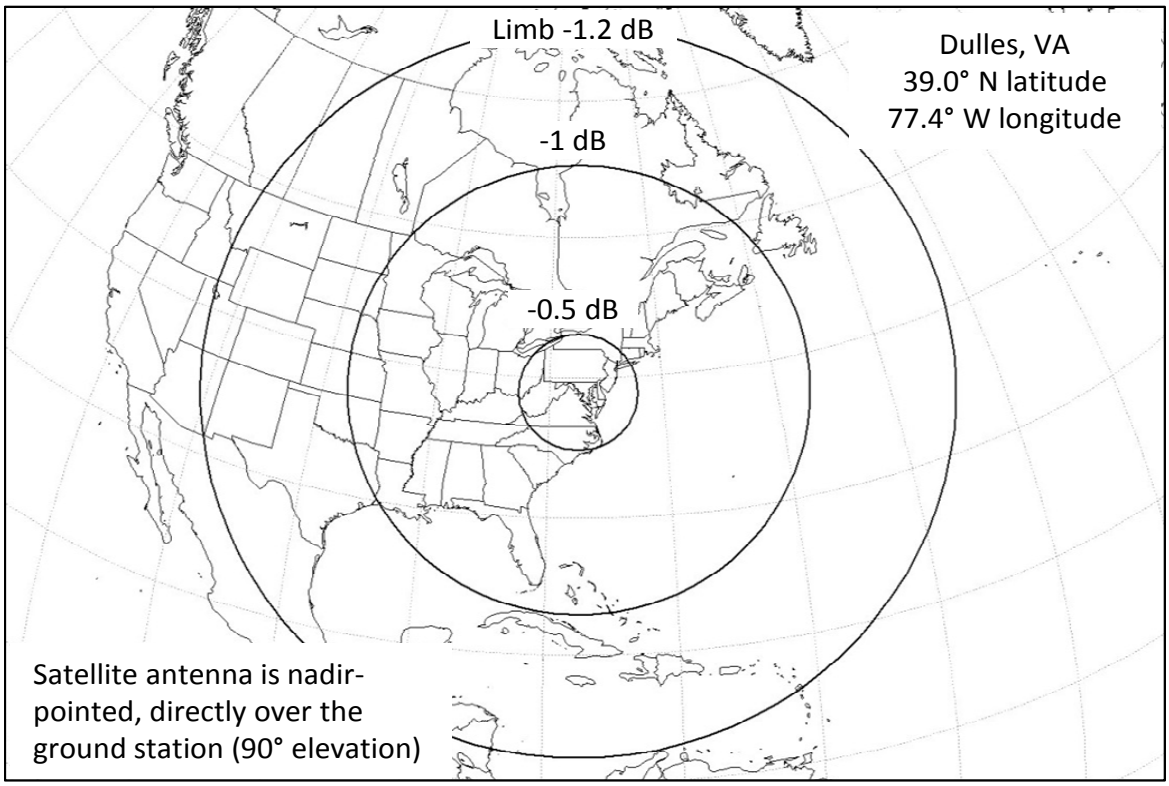


Green River, WY



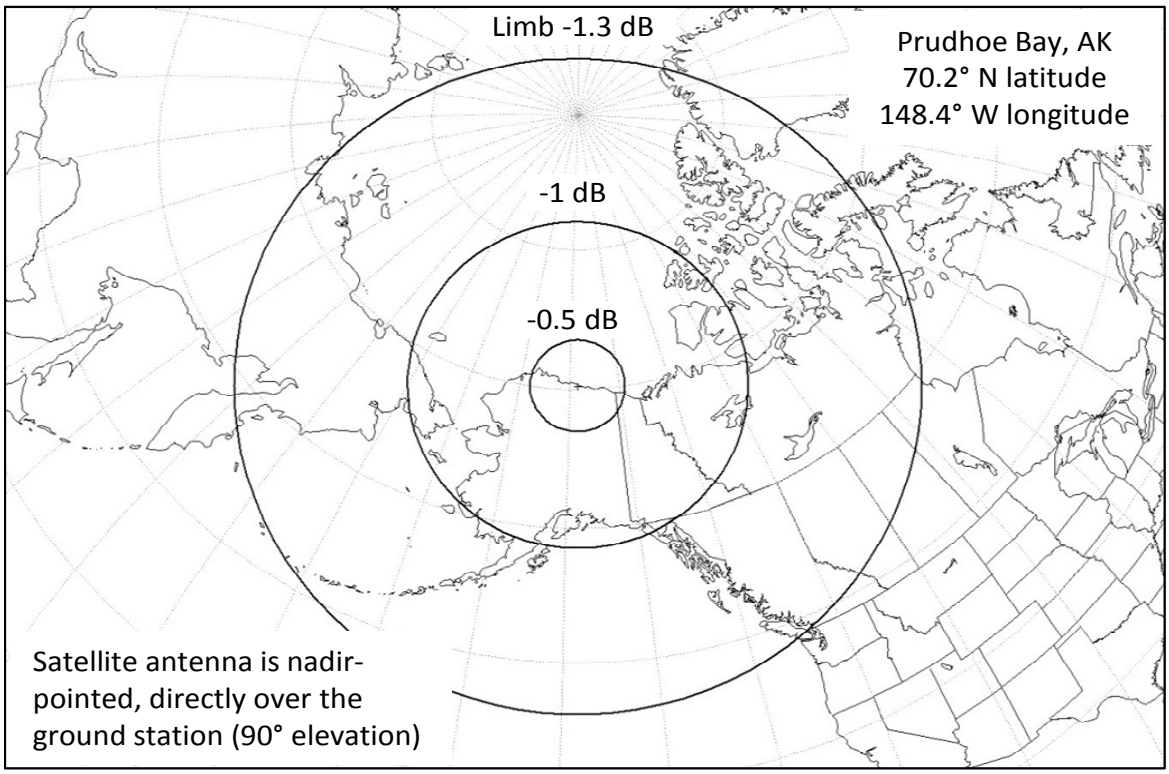
Clewiston, FL

Narrowband Downlink Contours: 770 km Altitude (3 of 3)

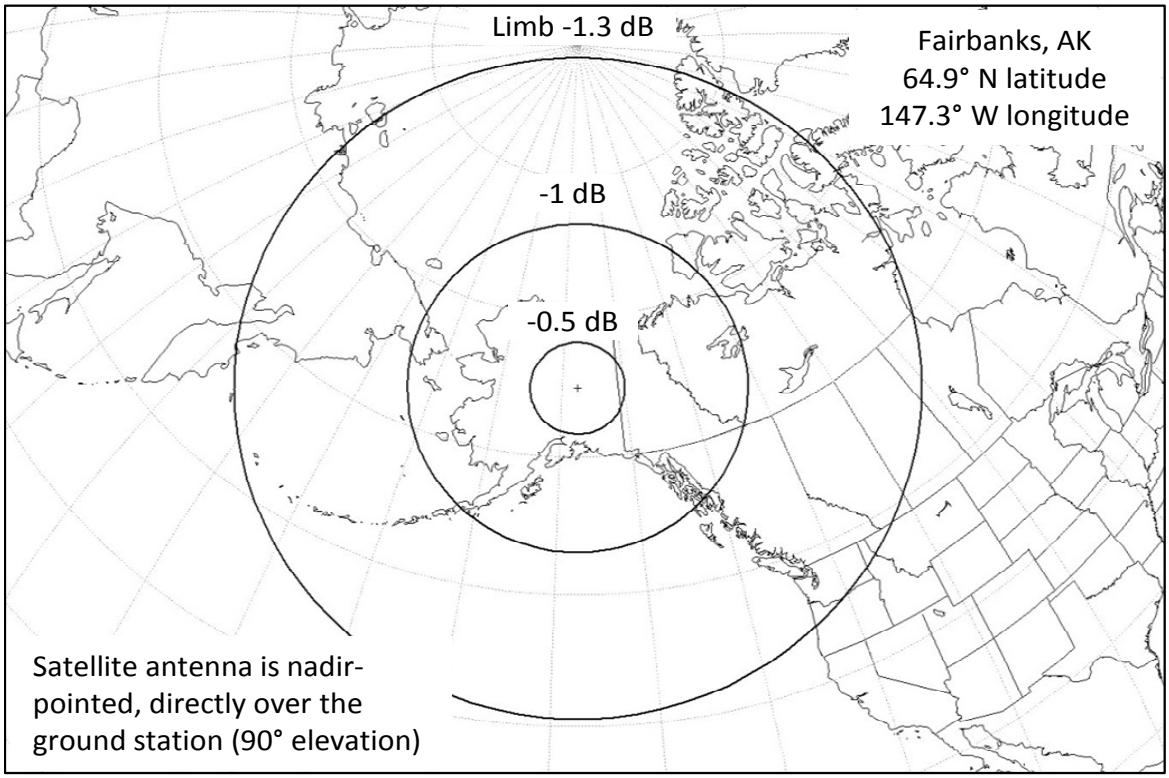


Dulles, VA

Narrowband Downlink Contours: 617 km Altitude (1 of 3)

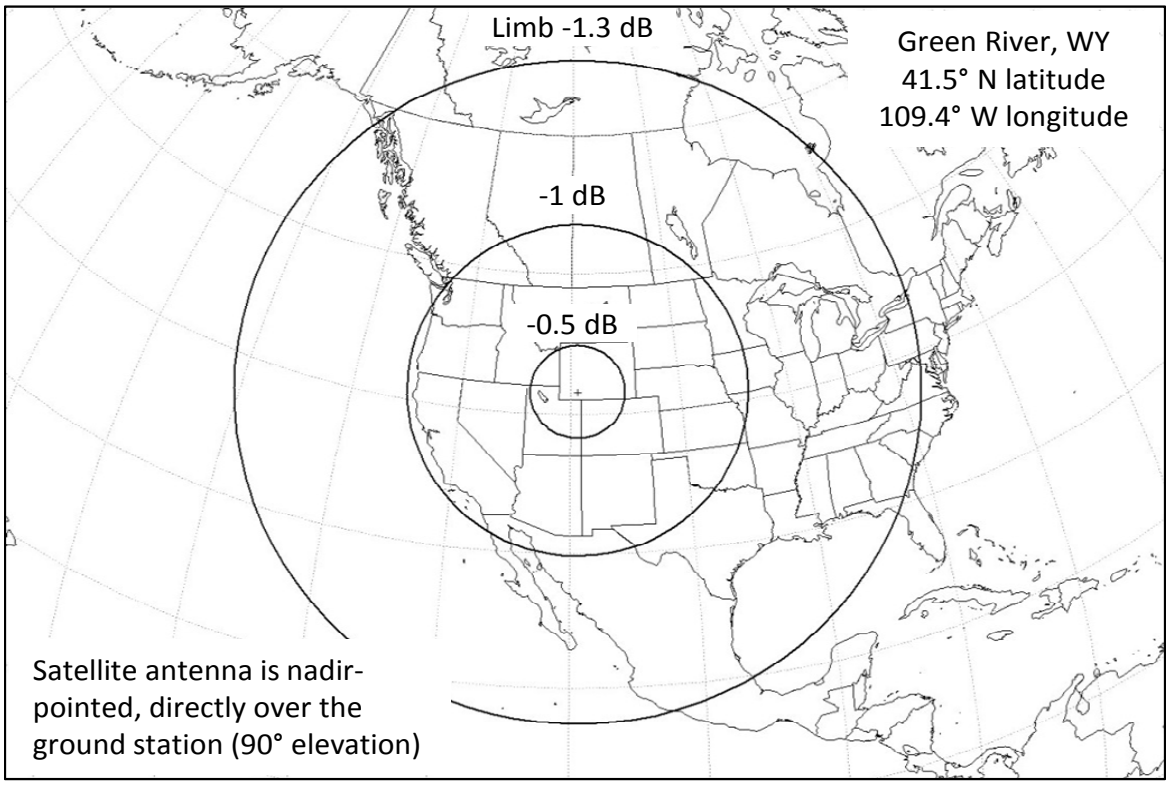


Prudhoe Bay, AK

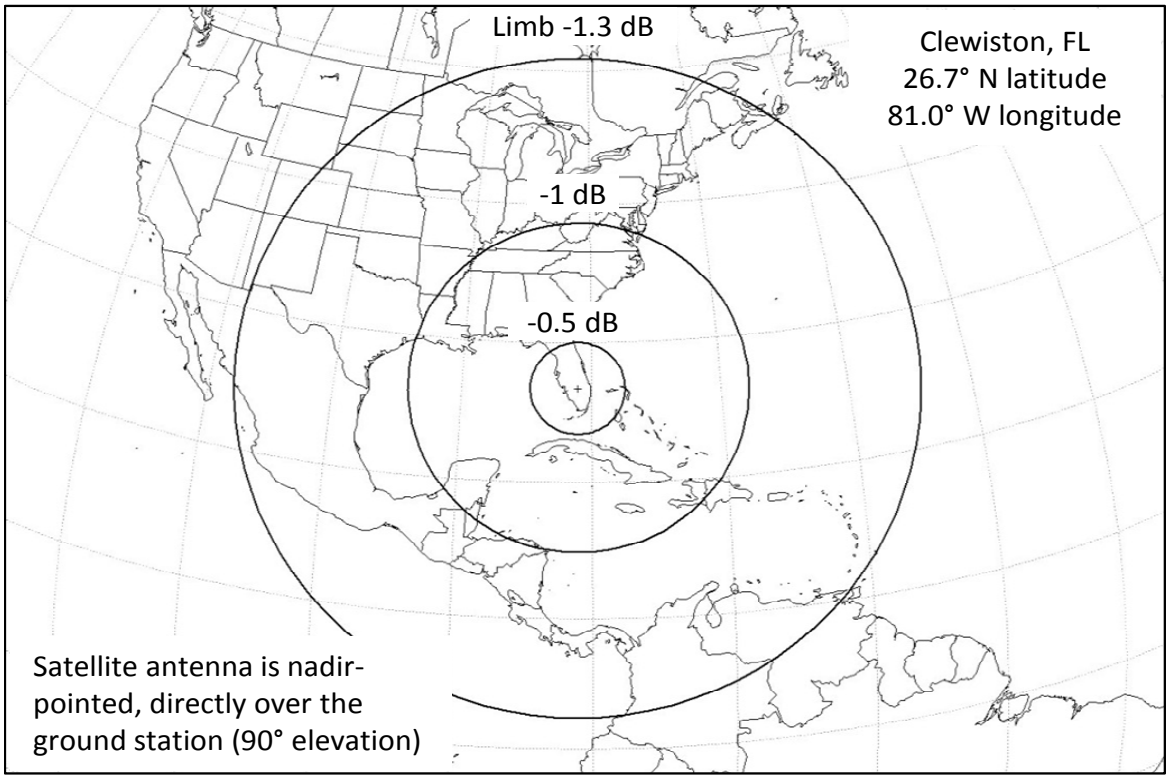


Fairbanks, AK

Narrowband Downlink Contours: 617 km Altitude (2 of 3)

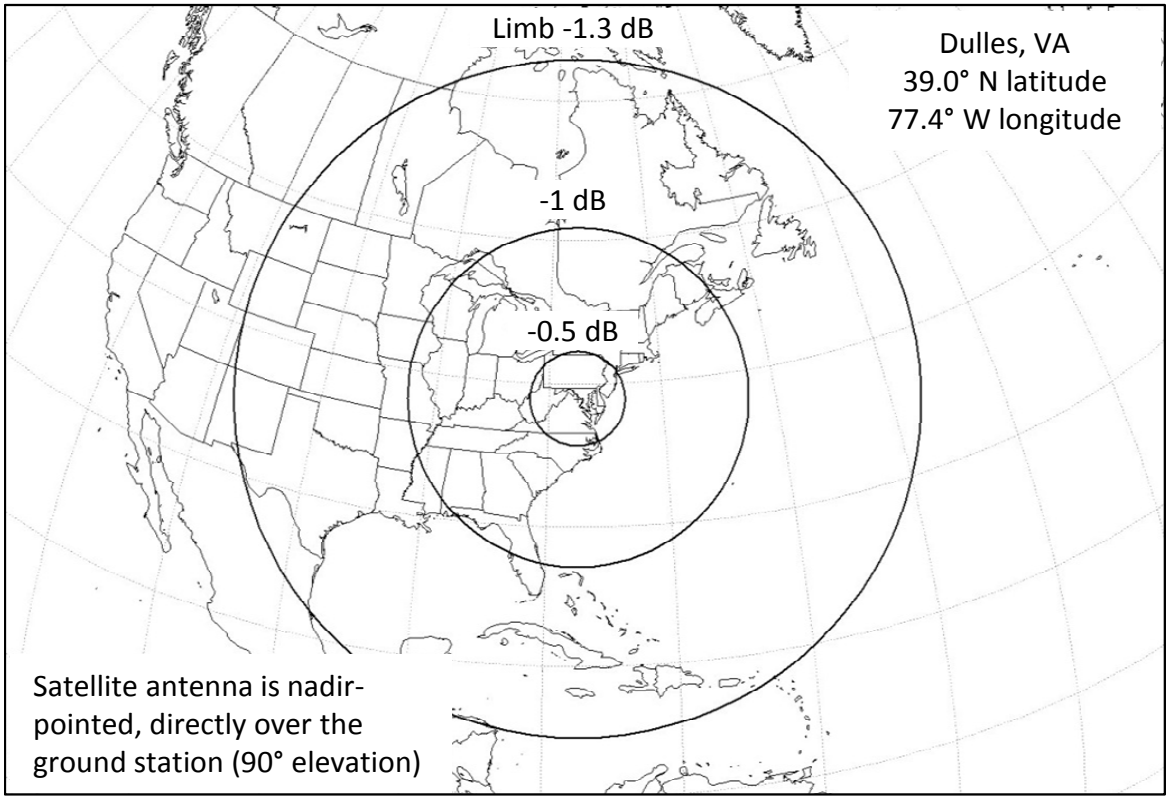


Green River, WY



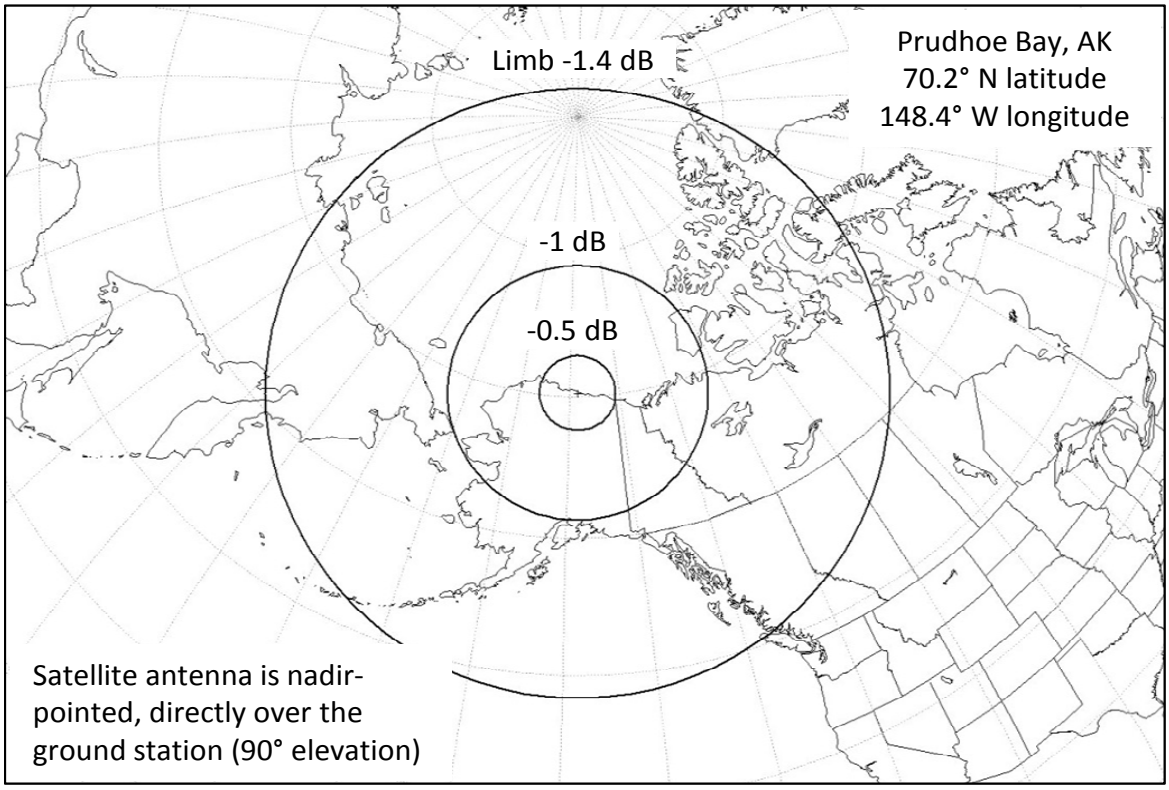
Clewiston, FL

Narrowband Downlink Contours: 617 km Altitude (3 of 3)

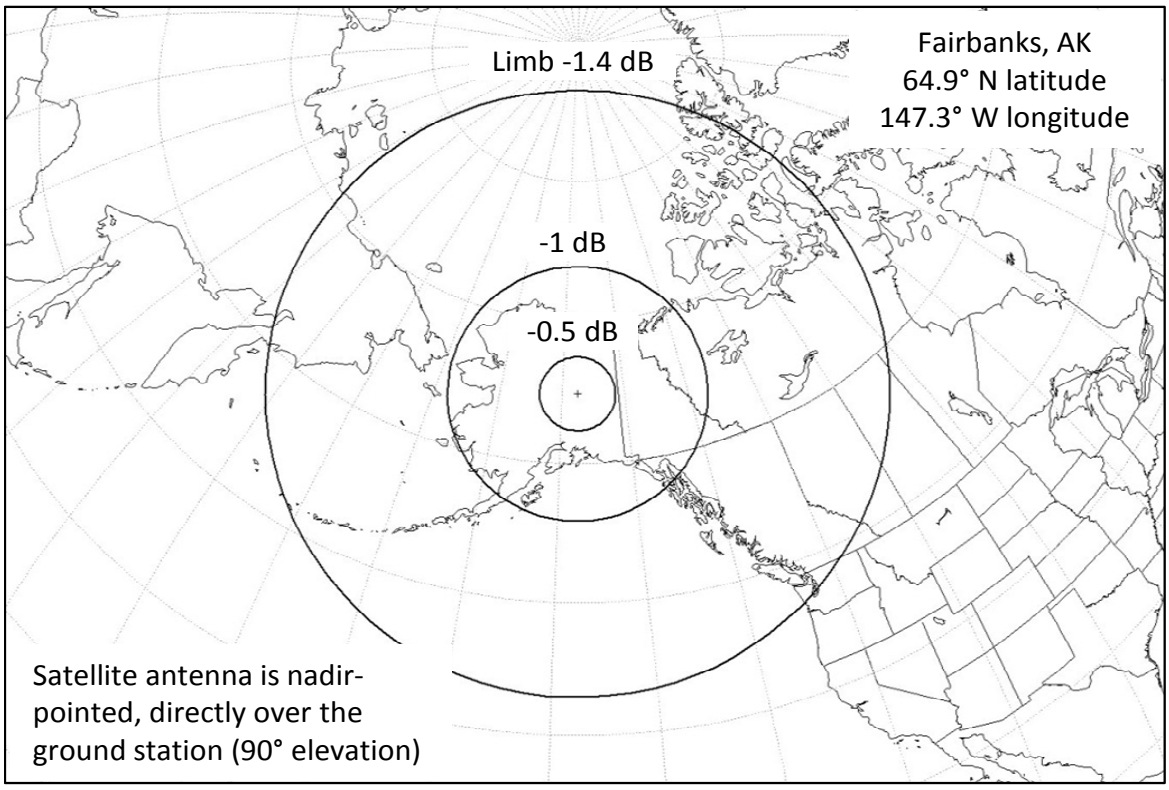


Dulles, VA

Narrowband Downlink Contours: 496 km Altitude (1 of 3)

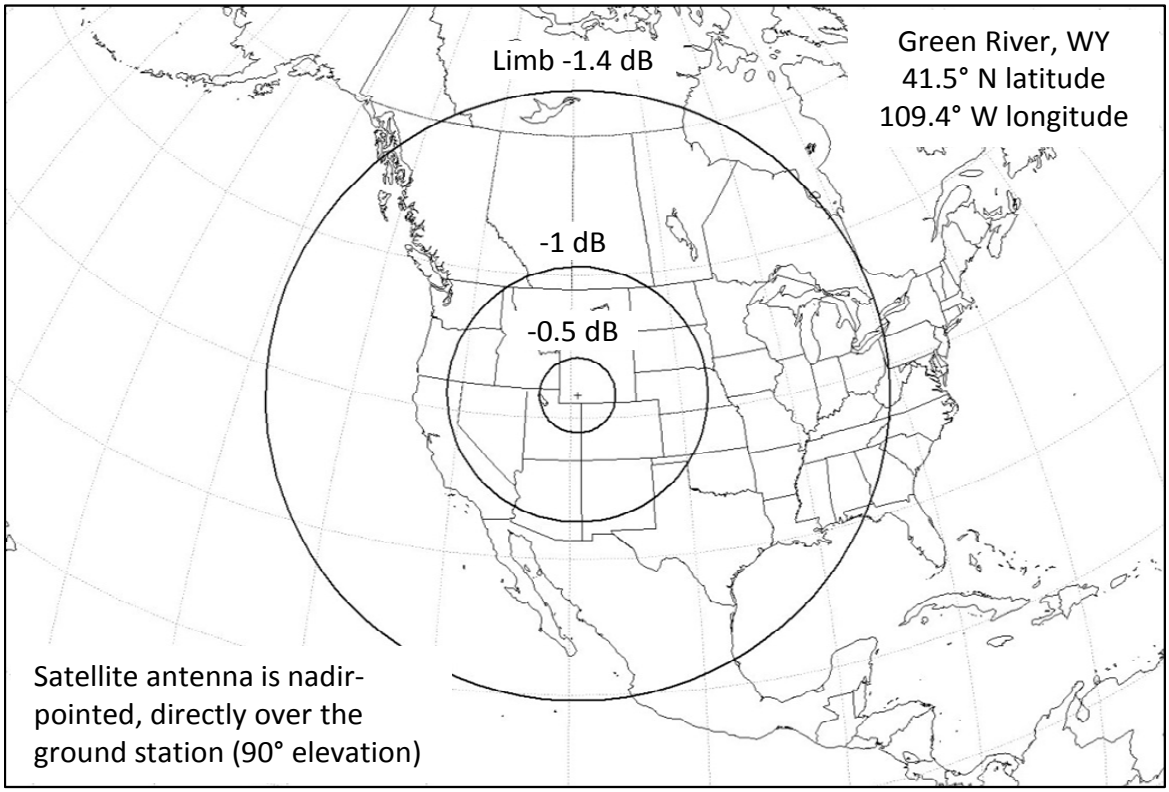


Prudhoe Bay, AK

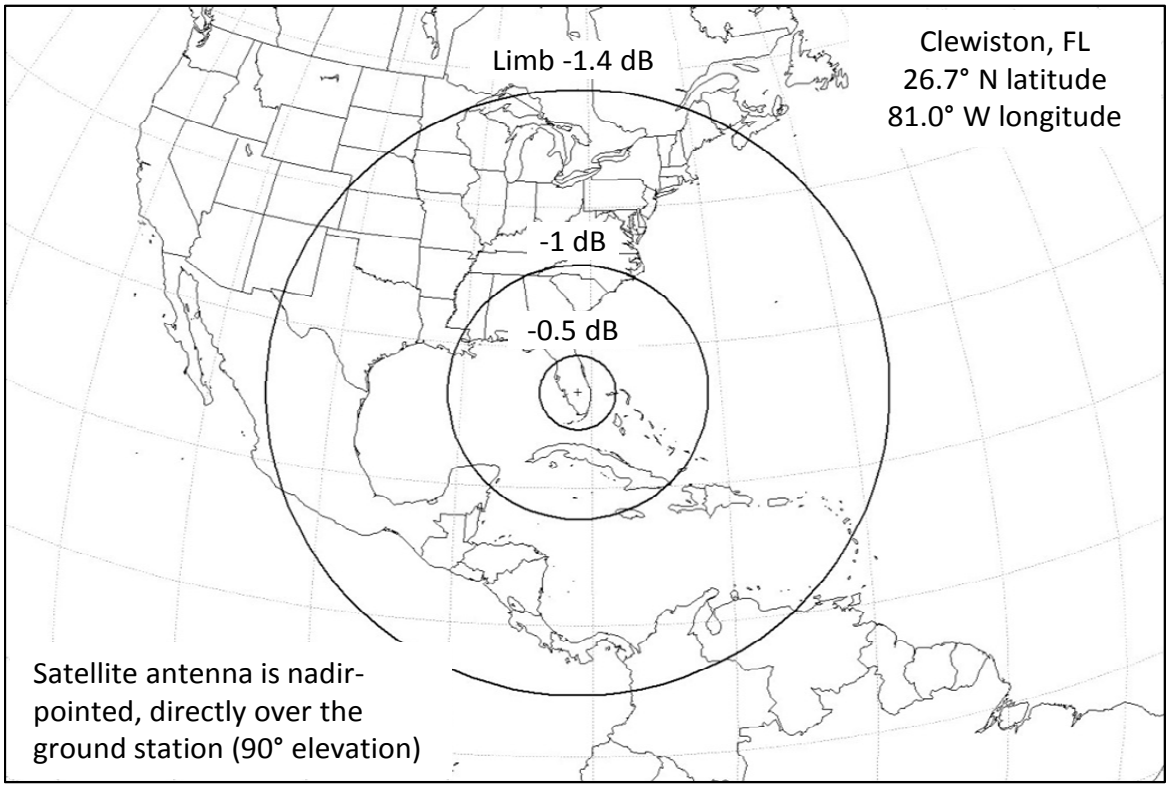


Fairbanks, AK

Narrowband Downlink Contours: 496 km Altitude (2 of 2)

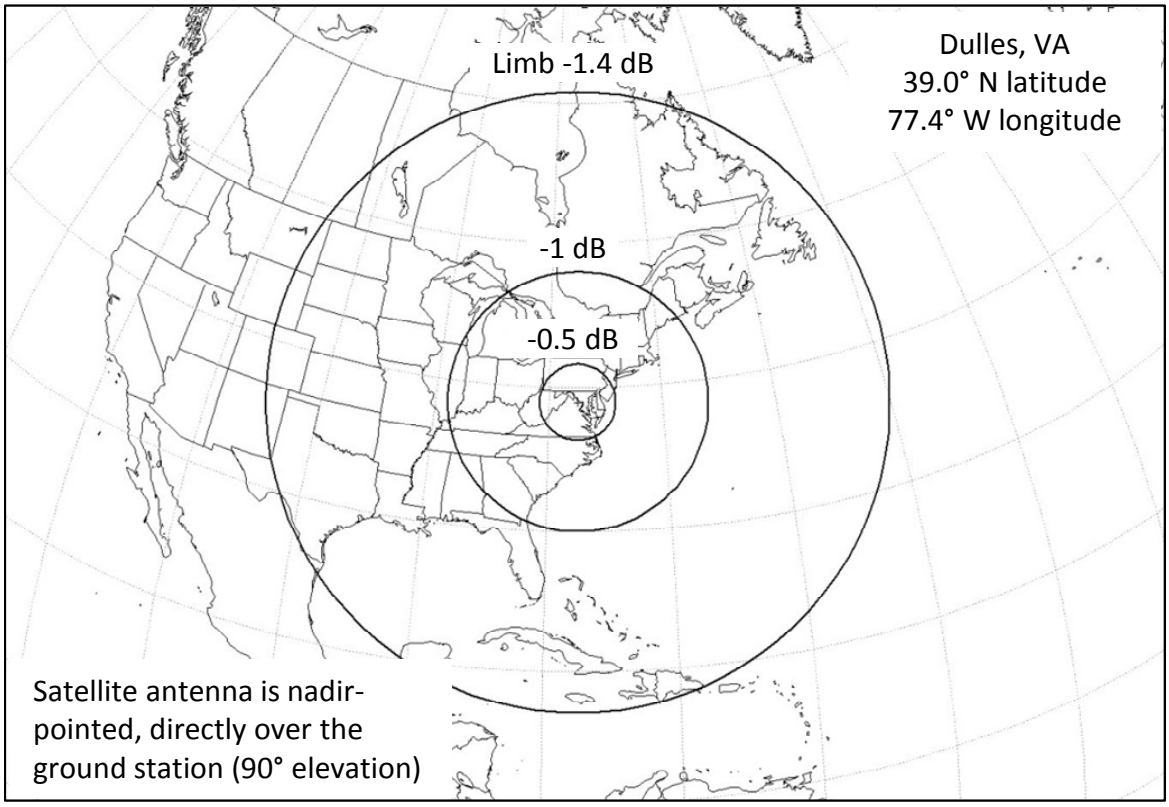


Green River, WY



Clewiston, FL

Narrowband Downlink Contours: 496 km Altitude (3 of 3)



Dulles, VA

TECHNICAL CERTIFICATE

I, Steve Linn, hereby certify, under penalty of perjury, that I am the technically qualified person responsible for the preparation of the engineering information contained in the technical portions of the foregoing amendment and the related attachments, that I am familiar with Part 25 of the Commission's Rules, and that the technical information is complete and accurate to the best of my knowledge and belief.

Steve Linn /s/

Steve Linn
Vice President, Space Systems
DigitalGlobe, Inc.

Dated: April 8, 2016