

EXHIBIT 43
DG Consents Sub, Inc.
Amendment Application
FCC Form 312
August 2011

Description of Amendment to a Pending Application

With this Amendment, DG Consents Sub, Inc. (“DigitalGlobe”) amends its pending modification of license application in File No. SAT-MOD-20101122-00243 (“Modification Application”)¹ in two respects: First, DigitalGlobe modifies the orbit characteristics of its QuickBird satellite as proposed in the Modification Application to specify a lower peak orbit altitude.² Second, DigitalGlobe responds to an inquiry from International Bureau staff concerning communications via QuickBird during the satellite’s descent from its operational altitude to the atmosphere as the spacecraft completes its mission. In all respects other than as specified below, the information contained within the Modification Application remains unchanged.

A. Request for New Peak Orbit Altitude

In the Modification Application, DigitalGlobe proposed to increase the peak orbit altitude of QuickBird to 496 kilometers from its authorized peak altitude of 450 kilometers. DigitalGlobe commenced the relocation of the satellite to this new higher altitude following grant of its request for pre-grant special temporary authority. *See* SAT-STA-20110318-00057 (granted March 21, 2011). However, QuickBird was only able to achieve an altitude of 482 kilometers after depleting its maneuvering fuel. Accordingly, DigitalGlobe now requests a new peak orbit altitude for QuickBird of 482 kilometers in lieu of the 496 kilometers proposed in the Modification Application.³

In the absence of maneuvering fuel, the QuickBird satellite is unable to maintain its peak altitude. It has now started on a slow, gradual decay in orbit altitude that will continue until the spacecraft enters the atmosphere to burn up, which will occur sometime in late 2014 based on the current best predictions of solar activity and resulting atmospheric density. Due to the uncertainty inherent in these predictions, the actual altitude decay rate and re-entry date could vary by several months. Section B below contains a discussion of communications that will occur with the QuickBird satellite during its descent.

¹ The Modification Application was accepted for filing on December 3, 2010. *See* Public Notice SAT-00740.

² QuickBird is currently operating at an orbit altitude of approximately 482 kilometers pursuant to special temporary authority originally granted on May 19, 2011, and extended for a 60-day period on August 3, 2011. *See* SAT-STA-20110422-00074; SAT-STA-020110719-00131.

³ DigitalGlobe has advised the National Oceanic and Atmospheric Administration (“NOAA”) of the proposed new orbit of 482 kilometers. NOAA took favorable action in March 2011 on DigitalGlobe’s proposal for post-mission disposal of QuickBird from a peak orbit of 496 kilometers. DigitalGlobe has informed NOAA that the March 2011 authority should apply to the post-mission disposal from a peak orbit of 482 kilometers.

The technical and policy justifications offered in the Modification Application in support of grant of a peak orbit of 496 kilometers – with the partial exception of compliance with international power flux-density limits as discussed in Section B below and an update to DigitalGlobe’s showings with respect to orbital debris mitigation as discussed in Section C below – apply in all respects to the amended request for a peak orbit of 482 kilometers. DigitalGlobe incorporates those justifications and showings herein by reference. DigitalGlobe emphasizes that the requested change in orbit altitude will extend the operational life of the QuickBird satellite, thereby enabling DigitalGlobe to continue to generate valuable meteorology, national security, environment and climate data into the year 2014.

The Schedule S submission included with the Modification Application, with the exception of five of the orbital parameters in Section S4, remains unchanged and is incorporated herein by reference. The new orbital parameters in Section S4 (page 2 of Schedule S) are:

- S4(g) inclination angle = 97.28 degrees
- S4(h) orbital period = 5646 seconds
- S4(i) apogee = 482 kilometers
- S4(j) perigee = 465 kilometers
- S4(k) right ascension of ascending node = 166.5 degrees

The above orbital parameters are accurate as of the time of propellant depletion and will change over time as the orbit decays as described in Section B below. DigitalGlobe will be unable to reflect this information on Schedule S given limitations in the software, but stands prepared to provide any additional information the Commission may require. As a precaution, DigitalGlobe requests a contingent waiver of Section 25.114(c)(6) on the ground that the explanation of orbital parameters in Section B below satisfies the purpose of the regulation, and that the inability to provide updated Schedule S entries here is due to software shortcomings beyond the applicant’s control. The discussion in the Modification Application about the limitations of the Schedule S software and the need for Attachment A to Exhibit 43 to that application (which remains in effect other than the changes to the five “S4” elements updated above) remains valid, and is carried forward through this Amendment.

B. Response to International Bureau Staff Inquiry and Related Waiver Request

In connection with the Modification Application, the International Bureau staff requested that DigitalGlobe indicate the extent, if any, to which DigitalGlobe intends to communicate with QuickBird once the satellite has completed its mission and before it completes its re-entry into the atmosphere. As detailed below, DigitalGlobe confirms that it intends to communicate with QuickBird during its descent from the requested peak altitude of 482 kilometers to 200 kilometers, at which altitude the satellite will be at its useful limit and within days or weeks of final re-entry. To best serve the public interest, while complying to the fullest extent possible with the power flux-density (“pfd”) limits stated in Article 21, Table 21-4 of the ITU Radio Regulations for earth exploration-satellite service (“EESS”) space craft operating in the 8025-8400 MHz EESS (space-to-Earth) band, DigitalGlobe requests approval to implement three distinct communication phases during QuickBird’s gradual altitude decay, as detailed below.

Phase 1: Normal Operations from 482 km to 400 km (Full PFD Compliance)

DigitalGlobe will continue all normal wideband and narrowband communications with QuickBird. In the Attachment hereto is a replacement for Attachment B of the Modification Application. The replacement Attachment B contains an analysis of QuickBird's wideband and narrowband pfd as a function of ground elevation angle at various altitudes, and shows that all radio frequency (RF) links continue to meet international pfd limits under worst case conditions down to 400 kilometers. QuickBird is expected to operate in this regime for approximately two and one-half years, until early 2014.

Phase 2: Coordinated Operations from 400 km to no lower than 280 km (Partial PFD Waiver Requested)

Figure 1 in the Attachment shows that QuickBird's wideband operations will not exceed the international pfd limits established for the 8025-8400 MHz band at any altitude above 280 kilometers. Figure 2 shows, however, that QuickBird's narrowband operations will exceed those limits by a slight amount at altitudes between 400 and 280 kilometers.⁴ Given its intention to communicate with QuickBird during its descent to 280 kilometers, including continuation of imaging operations, DigitalGlobe respectfully requests a limited waiver of the applicable pfd limits for narrowband operations between 400 and 280 kilometers. This phase is expected to last approximately nine months, until late 2014. DigitalGlobe may find it operationally necessary to transition to Phase 3 operations at an altitude above 280 kilometers – for example, to maintain positive attitude control during imaging operations if the actual atmospheric density encountered is greater than predicted.⁵ However, DigitalGlobe commits to transitioning QuickBird to Phase 3 at an altitude no lower than 280 kilometers in order to ensure pfd compliance for the wideband operations, and to constrain the narrowband pfd exceedance.

The Commission may waive any of its rules if there is “good cause” to do so.⁶ 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 general rule.⁷ Generally, the Commission will grant a waiver of its rules in a particular case

⁴ DigitalGlobe will begin exceeding the pfd limits for its narrowband beam at an altitude of about 400 kilometers in November 2013. The extent of the exceedance at that altitude will be 0 dB. By the time QuickBird gets to 280 kilometers approximately nine months later, the maximum extent of the pfd exceedance for any angle of arrival will be only 3 dB. This is not a significant exceedance.

⁵ In this regard, the information DigitalGlobe provided to NOAA about the new maximum orbit and orbit decay rate projected that the terminus of Phase 2 would occur at an altitude of ~300 kilometers. This is a slightly conservative assessment, and to the extent that DigitalGlobe may be able to extend Phase 2 operations with favorable atmospheric conditions to as low as 280 kilometers, it will provide further updated information to NOAA.

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

⁷ *Northeast Cellular*, 897 F.2d at 1166.

if the relief requested would not undermine the policy objective of the rule in question, and would otherwise serve the public interest.⁸

There is ample “good cause” justifying grant of DigitalGlobe’s waiver request. First of all, the risk of interference is not significant. QuickBird will only exceed the pfd limits in a range from 0.0 dB at 400 kilometers to 3 dB at 280 kilometers, and most satellite links in the EESS in this frequency range have more than ample margin to overcome this exceedance. Second, exceedance is an issue only for DigitalGlobe’s narrowband beam (a 4 MHz wide telemetry downlink beam centered on 8030 MHz). As noted above, QuickBird wideband operations will not exceed these limits at any point during the remainder of the satellite’s operational life. Third, exceedance occurrences, if any, are expected to be rare. In-line events are very few in number (three to four times per year with respect to other satellites), of brief duration (only a few seconds per occurrence), and are problematic only when the in-line satellites operate on the same narrowband frequencies and when links to both satellites are at high elevation angles.

To mitigate the possibility that any authorized user could experience harmful interference from DigitalGlobe narrowband emissions in excess of the pfd limits, DigitalGlobe will coordinate its operations with any and all affected spectrum users at their request. The number of spectrum users that could be affected by a pfd exceedance on the narrowband carrier at 8030 MHz in the vicinity of DigitalGlobe’s Alaska and Norway earth station sites is small, and coordination should be readily achievable. Should the potential for harmful interference exist despite coordination, DigitalGlobe will take whatever steps are necessary to eliminate the source of interference, including re-pointing the spacecraft (similar to Phase 3 below) and ceasing transmissions. With this commitment to operate without affecting the operations of other spectrum users, the policy objective of the international pfd limits will not be undermined.

Permitting narrowband operations to continue on a non-harmful interference/non-protected basis at pfd levels just slightly above the applicable pfd limits as QuickBird descends from 400 kilometers to 280 kilometers will extend the satellite’s full complement of services for up to nine additional months, thereby enabling DigitalGlobe to provide vital imaging data to government and private customers around the world until the end of the spacecraft’s useful life. This outcome will better serve the public interest than would strict adherence to the international pfd limits, which are intended to protect other spectrum users from harmful interference.

For the foregoing reasons, DigitalGlobe requests that the Commission waive application of the international pfd limits for QuickBird narrowband operations while in orbit between 400 and 280 kilometers, and allow DigitalGlobe to operate the narrowband downlink beam on a non-harmful interference/non-protected basis.

Phase 3: Decommissioning Operations from no lower than 280 to no lower than 200 km (Full PFD Compliance)

When QuickBird reaches 280 kilometers, DigitalGlobe, if it has not already done so, will discontinue imaging operations and wideband data downlink communications, ensuring the

⁸ *WAIT Radio*, 418 F.2d at 1157.

wideband downlink never violates pfd limits. However, DigitalGlobe's NOAA license requires positive satellite control until final decommissioning and re-entry, including verification of spacecraft passivation via narrowband telemetry to the extent possible. To maintain positive attitude control below around 280 kilometers – and therefore full command and control of the satellite – QuickBird must be pointed up to 90° off-nadir. This also points the narrowband patch antenna away from nadir, thereby reducing the RF power transmitted to the Earth. Figure 2 in the Attachment shows that with the satellite in this orientation, the worst-case narrowband downlink pfd falls below international pfd limits down to an altitude of 200 kilometers. In this manner, narrowband state of health data can continue to be transmitted during the final stages of altitude decay, fully compliant with both NOAA and Commission requirements. When re-entry is imminent, DigitalGlobe will perform and verify all NOAA-required passivation activities and will then cease all further QuickBird transmissions. This final phase should last only a few weeks. Similar to Phase 2, operational constraints and environmental conditions may necessitate that the transition points occur at altitudes higher than 280 and 200 kilometers; but in no case shall they occur any lower, assuring QuickBird transmissions remains within the bounding values presented in the attached replacement for Attachment B.

C. Accuracy with which Orbital Parameters Will be Maintained

Section 25.114(d)(14)(iii) of the Commission's rules calls upon applicants to specify the accuracy, if any, with which the orbital parameters of their non-geostationary satellite orbit space stations will be maintained. 47 C.F.R. § 25.114(d)(14)(iii). In the Modification Application, DigitalGlobe disclosed the accuracy with which the orbital parameters (apogee, perigee, inclination and the right ascension of the ascending nodes) of QuickBird were to be maintained. *See* Modification Application Exhibit 43, Table 1 at 8. With the depletion of maneuvering fuel during the orbit raising earlier this year, DigitalGlobe will no longer be able to maintain the elements to the extent expected in the Modification Application, and the values in Table 1 of the Modification Application no longer apply. DigitalGlobe now states that it will not be able to maintain the accuracy of the orbital parameters listed in Table 1 of the Modification Application.

ATTACHMENT B (Replacement)

**Summary Information Related to DigitalGlobe
Non-GSO EESS Remote Sensing Satellite System**

1. Link Budgets at 482 km

Mission Data Link Analysis

TELEMETRY DOWNLINK		R/T, PBK /NADIR	
EarthWatch			
FREQUENCY	8.03 GHz		
POWER	5.888 WATTS	WAVELENGTH	0.04 METERS
ALTITUDE	482.0 KM	5 DEG SLANT RANGE	2030.6 KM
REAL TIME DATA ON 1.7, PCM/PSK/PM		DATA RATE	16.384 KBPS
PLAY BACK DATA PCM/PM		DATA RATE	262.144 KBPS
		MARGIN dB	
R/T MOD INDEX	1.1	CARRIER	30.1
PBK MOD INDEX	1.2	R/T	20.2
		PBK	16.3
ANTENNA: NADIR			
PARAMETER		UNITS	VALUE
1	TOTAL TRANSMIT POWER	dBm	37.7
2	PASSIVE LOSS	dB	-8.1
3	S/C ANTENNA GAIN >+/- 90 DEG	dBic	0.0
4	FREE SPACE DISPERSION LOSS	dB	-176.7
5	ATMOSPHERIC LOSS	dB	-1.5
6	GROUND STATION G/T (spec)	dB/K	31.5
7	TOTAL RECEIVED POWER/T	dBm/K	-117.1
8	BOLTZMANN CONSTANT	dBm/Hz-K	-198.6
9	TOTAL RECEIVED POWER/KT	dB-Hz	81.5
CARRIER CHANNEL			
10	CARRIER/TOTAL POWER	dB	-11.7
11	CARRIER POWER/KT (min)	dB-Hz	69.9
12	CARRIER LOOP BW (300 Hz)	dB-Hz	24.8
13	CARRIER/NOISE	dB	45.1
14	REQUIRED CARRIER/NOISE	dB	15.0
15	CARRIER MARGIN	dB	30.1
DATA CHANNEL (PCM/PM) (playback)			
16	DATA/TOTAL POWER (MI=1.2)	dB	-4.4
17	DATA POWER/KT	dB-Hz	77.2
18	INFORMATION RATE 262 KBPS	dB-Hz	54.2
19	AVAILABLE S/N	dB	23.0
20	REQUIRED Eb/No 10E-5 BER	dB	11.9
21	CODING GAIN	dB	5.2
22	AVAILABLE SIGNAL MARGIN	dB	16.3
DATA CHANNEL (PCM/PSK/PM) (real time)			
23	DATA/TOTAL POWER (MI=1.1)	dB	-12.3
24	DATA POWER/KT	dB-Hz	69.2
25	INFORMATION RATE 16 KBPS	dB-Hz	42.1
26	AVAILABLE S/N	dB	27.0
27	REQUIRED Eb/No 10E-5 BER	dB	12.0
28	CODING GAIN	dB	5.2
29	AVAILABLE SIGNAL MARGIN	dB	20.2

COMMAND UPLINK			OMNI ANTENNA NOMINAL		
EarthWatch					
FREQUENCY	2.0856875	GHz			
UPLINK	45.0	dBW EIRP	WAVELENGTH	0.14	METERS
ALTITUDE	482.0	KM	5 DEG SLANT RANG	2030.6	KM
COMMAND DATA ON TONES			DATA RATE		
CMD MOD INDEX	1.0		MARGIN	dB	KBPS
			CARRIER	8.0	
			CMD	3.0	
ANTENNA: OMNI NOMINAL +/- 75 DEG					
PARAMETER			UNIT	VALUE	
UPLINK EIRP			dBW	45.0	
FREE SPACE DISPERSION LOSS			dB	-165.0	
POINTING LOSS			dB	-0.5	
ATMOSPHERIC LOSS 42 mm/hr			dB	-0.4	
S/C ANTENNA GAIN < +/- 75 DEG			dB _i	-16.0	
POLARIZATION LOSS			dB	-3.0	
S/C LINE LOSS			dB	-1.1	
TOTAL S/C RECEIVED POWER			dBm	-111.0	
CARRIER PERFORMANCE					
NET RECEIVED POWER			dBm	-111.0	
MIN CARRIER ACQUIS POWER			dBm	-119.0	
MARGIN CARRIER ACQUISITION			dB	8.0	
COMMAND CHANNEL PERFORMANCE (MI=1.0)					
NET RECEIVED POWER			dBm	-111.0	
MINIMUMCMD CHANNEL POWER			dBm	-114.0	
COMMAND DESIGN MARGIN			dB	3.0	

320 MHz DATA RATE DOWNLINK ANALYSIS			
Fo = 8.185 GHz			
DOWNLINK PARAMETERS:			
Frequency		8.185 GHz	
Orbit height in km		482 km	
Local elevation above hor.		5 degrees	
Data rate		320 Mbps	
Bandwidth		160 MHz	
Spacecraft ant. EIRP at max scan		59.7 dBm	
Slant range		2030.57 km	
Ground ant. G/T		30.8 dB/K	
BER		1.00E-09	
Required Eb/No (without coding)		12.7 dB	
Hardware imp. BER loss		-2.0 dB	
LINK CALCULATION:			
TOTAL POWER TO GROUND:			
Satellite EIRP		59.7 dBm	
Path loss		-176.9 dB	
Total loss (rain, polarization, etc.)		-2.2 dB	
RECEIVER SENSITIVITY:			
Required Eb/No		12.7 dB	
Available Eb/No		24.0 dB	
DOWNLINK MARGIN		9.3 dB	
ANTENNA SIZES:			
Spacecraft Antenna Segment			
Spacecraft dish diameter		9.8 inches	
Approx. HPBW		10.4 degrees	
Gain of spacecraft antenna		24.7 dBic	
Loss between HPA out and ant. output		-3.6 dB	
Transmitter Po		7.1 watts	
EIRP of satellite system		59.7 dBm	
Ground Antenna Segment			
Ground antenna G/T		30.8 dB/K	
System noise temperature		188.2 K (referenced at aperture)	
Directivity gain ground antenna		54.0 dBic	
Ground dish diameter		7.3 meters	
Approx. HPBW		0.4 degrees	

Figure 1

QuickBird Wideband Power Flux Density as a function of Ground Elevation Angle

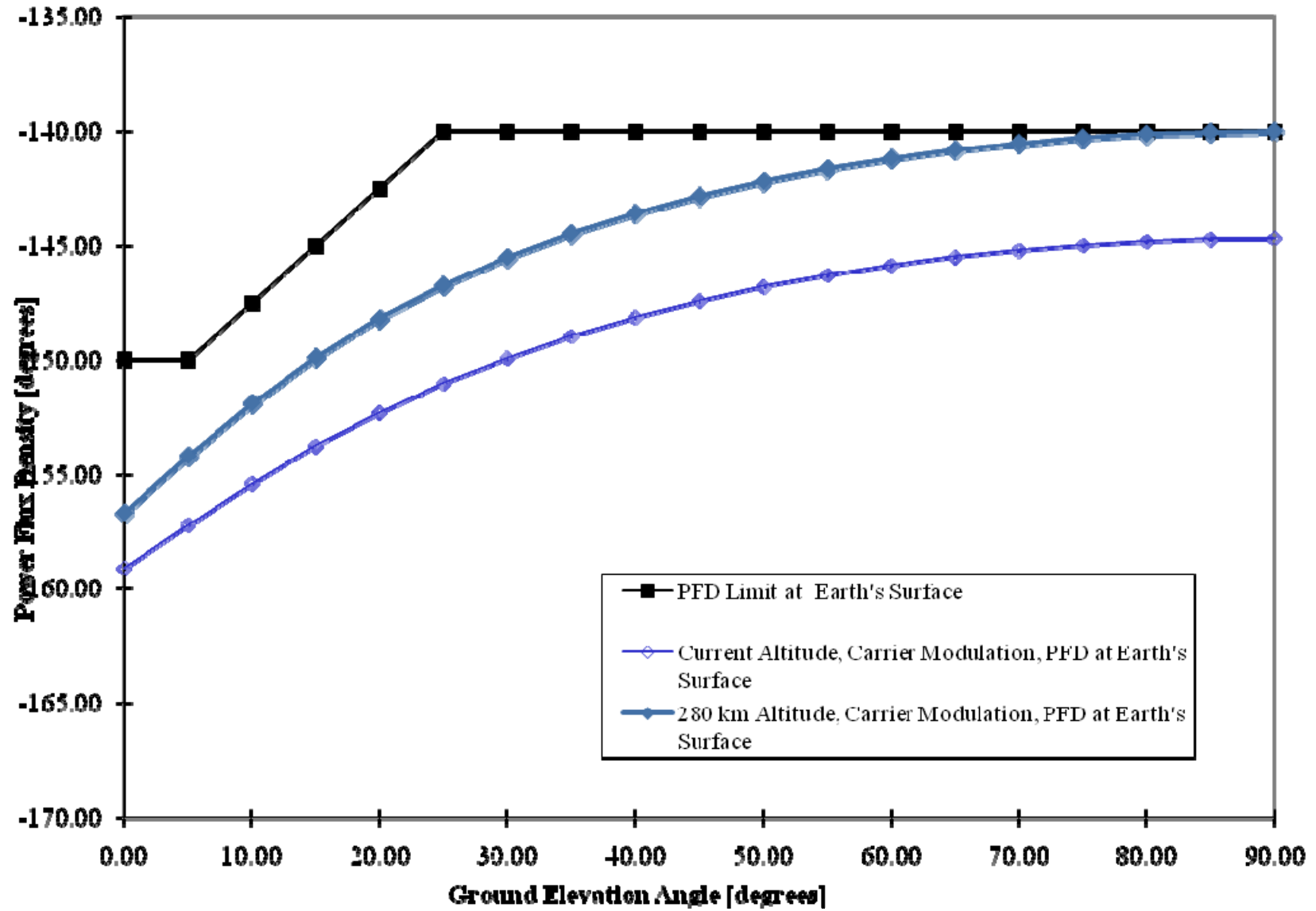
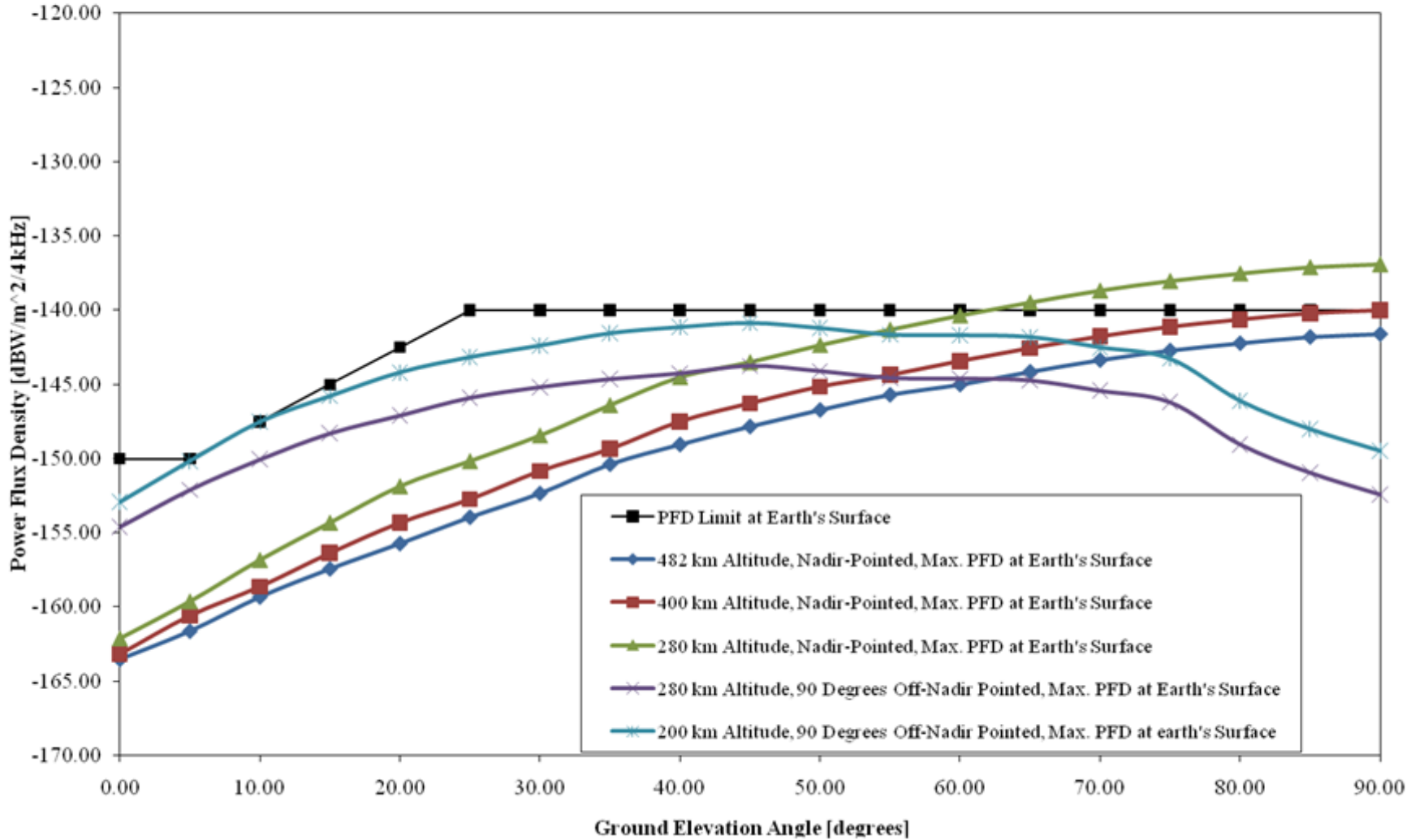


Figure 2

QuickBird Narrowband Power Flux Density as a function of Ground Elevation Angle with QB Patch Antenna



TECHNICAL CERTIFICATE

I, Michael Martinez, 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 attachment, 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.

Michael Martinez

Michael Martinez
Director of Space Operations
DigitalGlobe, Inc.

Dated: August 29, 2011