Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
SES AMERICOM, INC.	)	File No. SAT-MOD-_____
	)	Call Sign S2135
Application for Modification of AMC-4	)	
Fixed-Satellite Space Station License	)	

REQUEST OF SES AMERICOM, INC.

SES Americom, Inc. ("SES Americom," doing business as "SES WORLD SKIES"[1]), hereby respectfully requests modification of its license for the AMC-4 fixed-satellite space station at 67° W.L. to reflect a slightly altered coverage pattern than what was originally authorized for the satellite at this orbital location. Grant of the requested authority will enable SES WORLD SKIES to provide enhanced service to the Caribbean and Central America in response to customer demand.

A completed FCC Form 312 is attached, and SES WORLD SKIES incorporates by reference the technical information previously provided in support of AMC-4.[2] In addition, SES WORLD SKIES is providing information relating to the proposed modification to the AMC-4 license in the attached Technical Appendix.

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[1] SES WORLD SKIES is the commercial brand name for the integrated operations of two indirect subsidiaries of SES S.A.: SES Americom and New Skies Satellites B.V. (effective January 1, 2009). The brand name does not affect the underlying legal entities that hold Commission authorizations or U.S. market access rights.

[2] *See* File Nos. SAT-LOA-19940310-00007; SAT-AMD-19941114-00064; SAT-MOD-19970130-00012; SAT-MOD-19981023-00076; SAT-MOD-20080314-00072; & SAT-MOD-20100623-00144.

MODIFICATION

AMC-4 is a C/Ku-band hybrid spacecraft operating at 67° W.L. with service in the Ku-band only pursuant to the International Telecommunication Union ("ITU") filings of the Colombian Administration, as Notifying Administration for the Andean Community ("CAN").[3] In response to the service requirements of a new customer, SES WORLD SKIES seeks modification of the AMC-4 license to reflect a slight repointing of the satellite to improve service quality in the Caribbean and Central America. SES WORLD SKIES has already implemented this change pursuant to a grant of Special Temporary Authority,[4] and now seeks modification of the AMC-4 license in order to retain the altered coverage configuration on a long-term basis.

As SES WORLD SKIES described in the AMC-4 STA Request, the repointing involved a .1 degree change in the azimuth of the satellite in order to strengthen the signal levels of the North American beam over the Caribbean and Central American regions.[5] SES WORLD SKIES adjusted the steerable South American beam to compensate for the satellite repointing and maintain the original coverage of South America. Thus, no change in the footprint of the AMC-4 South American beam is proposed.

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[3] *See* Call Sign S2135, File No. SAT-MOD-20100623-00144, grant-stamped Nov. 4, 2010. Specifically, AMC-4 is authorized to operate at 67° W.L. in the conventional Ku-band (11.7-12.2 GHz downlinks and 14.0-14.5 GHz uplinks) and extended Ku-band (11.45-11.7 GHz downlinks and 13.75-14.0 GHz uplinks). The satellite uses specific C-band frequencies for command and telemetry, but the C-band payload is otherwise not authorized for operations at 67° W.L. *See id.*

[4] *See* Call Sign S2135, File No. SAT-STA-20110414-00072 ("AMC-4 STA Request"), grant-stamped Apr. 21, 2011.

[5] *See id.*, Narrative at 2.

Retaining the revised orientation of AMC-4 will not adversely affect any other operators. Contour maps showing the AMC-4 North American beam coverage area with the original and revised orientations are included in the attached Technical Appendix. As the Technical Appendix demonstrates, the very small shift in AMC-4's North American antenna coverage has a negligible effect on the interference environment in which adjacent satellites operate. The operational Ku-band satellites adjacent to the 67°W.L. position are Star One C1 at 65°W.L. and Star One C2 at 70°W.L. Both are Brazilian-licensed satellites. The operations of AMC-4 with the slight change in pointing discussed herein continue to be consistent with SES WORLD SKIES' coordination agreements, including its agreements with Brazil.[6]

The Commission has generally permitted satellite operators the flexibility to design and modify their networks in response to customer requirements, absent compelling countervailing public interest considerations.[7] Here, grant of the requested modification will permit SES WORLD SKIES to operate AMC-4 with a coverage pattern that has been adjusted to respond to customer demand.

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[6] The reorientation has a slight impact on the C-band TT&C coverage pattern, but the TT&C operations continue to comply with the terms of SES WORLD SKIES' coordination agreement with Star One.

[7] *See, e.g. AMSC Subsidiary Corporation*, 13 FCC Rcd 12316 at ¶ 8 (IB 1998) (the Commission generally leaves space station design decisions to the licensee "because the licensee is in a better position to determine how to tailor its system to meet the particular needs of its customers.") (footnote omitted).

For the foregoing reasons, SES WORLD SKIES respectfully requests modification of the AMC-4 license to reflect repointing of the North American beam as described herein.

Respectfully submitted,

SES AMERICOM, INC.

By: */s/ Suzanne H. Malloy*

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Dated: May 10, 2011

Technical Appendix

1. Introduction

This technical appendix is submitted in support of the application of SES Americom, Inc. ("SES Americom," doing business as "SES WORLD SKIES") for a modification of its license for the AMC-4 spacecraft at 67° W.L. to reflect a slightly altered coverage pattern than what was originally authorized for the satellite at this orbital location. SES WORLD SKIES incorporates by reference herein the technical information it has already provided with respect to AMC-4,[1] and provides here technical information that is changing as a result of the proposed modification.

2. Gain Contours

SES WORLD SKIES is attaching contour maps (Figures 1 to 8) showing the original and revised C-band and Ku-band EIRP patterns for typical horizontally and vertically polarized transponders of AMC-4 at 67° W.L.[2] The changes to the EIRP are so small that they produce no visible change from the original contours provided.

3. Link Budgets and Interference Analysis

An interference analysis was submitted to the Commission in connection with the initial operation of AMC-4 at 67° W.L. demonstrating that operation of AMC-4 is compatible with adjacent satellites and with the Commission's two-degree spacing requirements.[3] The analysis herein shows that the revised pointing of the AMC-4 North American beam has a negligible impact on the interference environment for adjacent satellites.

SES WORLD SKIES calculated the impact of the repointing on EIRP values at numerous receiver locations throughout CONUS, Canada, Mexico, Central America, and the Caribbean region. In the vast majority of these locations, the difference between the EIRP values with the original and revised pointing is very small, typically within ±0.5 dB. The increase in Ku-band EIRP is greater than 2 dB at only two sites (2.2 and 2.3 dB). In the C-band, the change in EIRP values with the repointing is within ±0.5 dB for all sites.

For example, in San Juan, Puerto Rico, the Ku-band EIRP for AMC-4 with the original spacecraft orientation was in the range of 36 to 40 dBW. With the repointing, the range is 38 to 41 dBW, an increase of between 1 and 2 dB. To determine the effect of a 2 dB

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[1] *See* File Nos. SAT-LOA-19940310-00007; SAT-AMD-19941114-00064; SAT-MOD-19970130-00012; SAT-MOD-19981023-00076; SAT-MOD-20080314-00072; & SAT-MOD-20100623-00144.

[2] As discussed above, SES WORLD SKIES is only authorized to use the AMC-4 C-band frequencies for TT&C, and the proposed minimal changes in the C-band coverage conform to the existing coordination agreements relating to AMC-4 TT&C operations.

[3] *See* Call Sign S2434, File No. SAT-MOD-20100623-00144, Technical Appendix, Annex 2.

increase in the EIRP, we have computed the C/I in a non-SES carrier from an orbital location that is two degrees away from 67° W.L., serving the Caribbean and Central America. The C/I computation is based on the following parameters:

a) EIRP density of the wanted (*i.e.*, non-SES) satellite: 5 dBW/4kHz
b) EIRP of the interfering (SES) satellite: 36 dBW with original configuration of AMC-4, and 38 dBW with repointing
c) Receive earth station diameter: 1.2 m
d) Wanted carrier threshold C/N: 7.0 dB
e) C/I in the victim carrier with interference from AMC-4 original configuration: 25.6 dB
f) C/I in the victim carrier with interference from AMC-4 after repointing: 23.6 dB
g) C/(N+I) in victim carrier with interference from AMC-4 with original configuration: 7.0 dB, at threshold
h) C/N in victim carrier with interference from AMC-4 after re-pointing: 7.0 dB, at threshold

Thus, the repointing of AMC-4 results in a 0.5% change to the interference component of the victim's system noise temperature, from 1.7% to 2.2%. The interference level is less than the 6% DeltaT/T ITU coordination trigger criteria; *i.e.*, internationally, if a 6% increase in noise temperature is not exceeded, then coordination is not needed between the concerned networks.

The repointing has no impact on Canadian or Mexican satellite systems, as the closest Canadian or Mexican FSS spacecraft to 67° W.L. is more than 40 degrees away. As discussed above in the narrative, the closest adjacent Ku-band satellites to 67° W.L. are licensed to Brazil. Operation of AMC-4 with the repointing discussed herein is consistent with the terms of the existing coordination agreements applicable to operation of AMC-4 and the Brazilian networks.

4. Schedule S

As discussed above, the proposed modification of the AMC-4 license will not result in any material changes to the spacecraft's operating characteristics or to the interference environment. As a result, the information requested in Schedule S duplicates information that is already on file with the Commission concerning the technical parameters of AMC-4's operation. In similar cases involving requests for minor operational changes, such as slight offsets from the nominal orbital position, the Satellite Division has not required the submission of a new Schedule S.[4] Accordingly, SES WORLD SKIES is not filing a new Schedule S with this application. SES Americom will nevertheless prepare and submit a Schedule S if requested to do so by the Satellite Division.

[4] *See, e.g.*, File No. SAT-MOD-20040405-00076 (PanAmSat request for authority to operate SBS-6 at 74.05° W.L. rather than 74.0° W.L.).

5. Orbital Debris Mitigation Statement

The information required under Section 25.114(d)(14) of the Commission's Rules regarding operations of AMC-4 at 67° W.L. is already on file with the Commission,[5] and the proposed modification to reflect a change in the AMC-4 coverage pattern does not alter the information previously provided.

[5] *See* Call Sign S2434, File No. SAT-MOD-20100623-00144, Technical Appendix, Section 8.

Figure 1

EIRP Pattern of AMC-4: Ku-band transponder 12, H-pol (down), original pointing

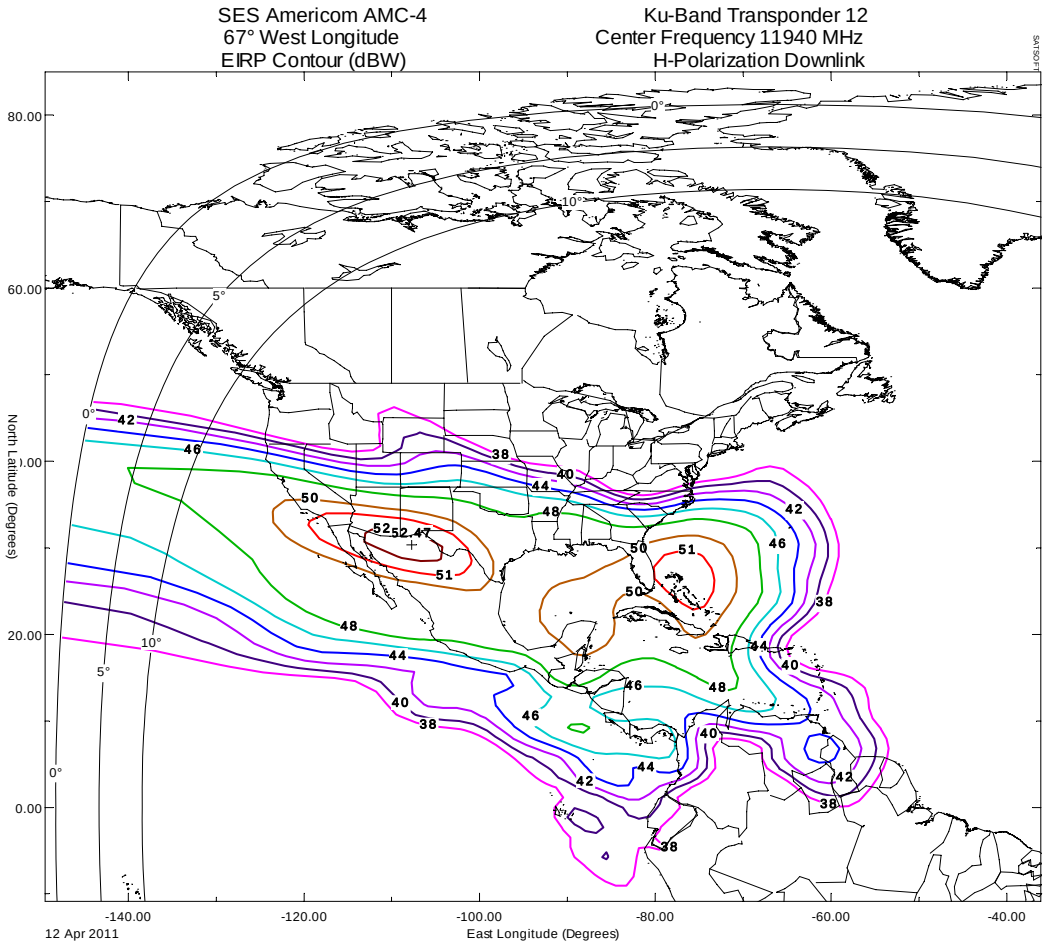


Figure 2

EIRP Pattern of AMC-4: Ku-band transponder 12, H-pol (down), revised pointing

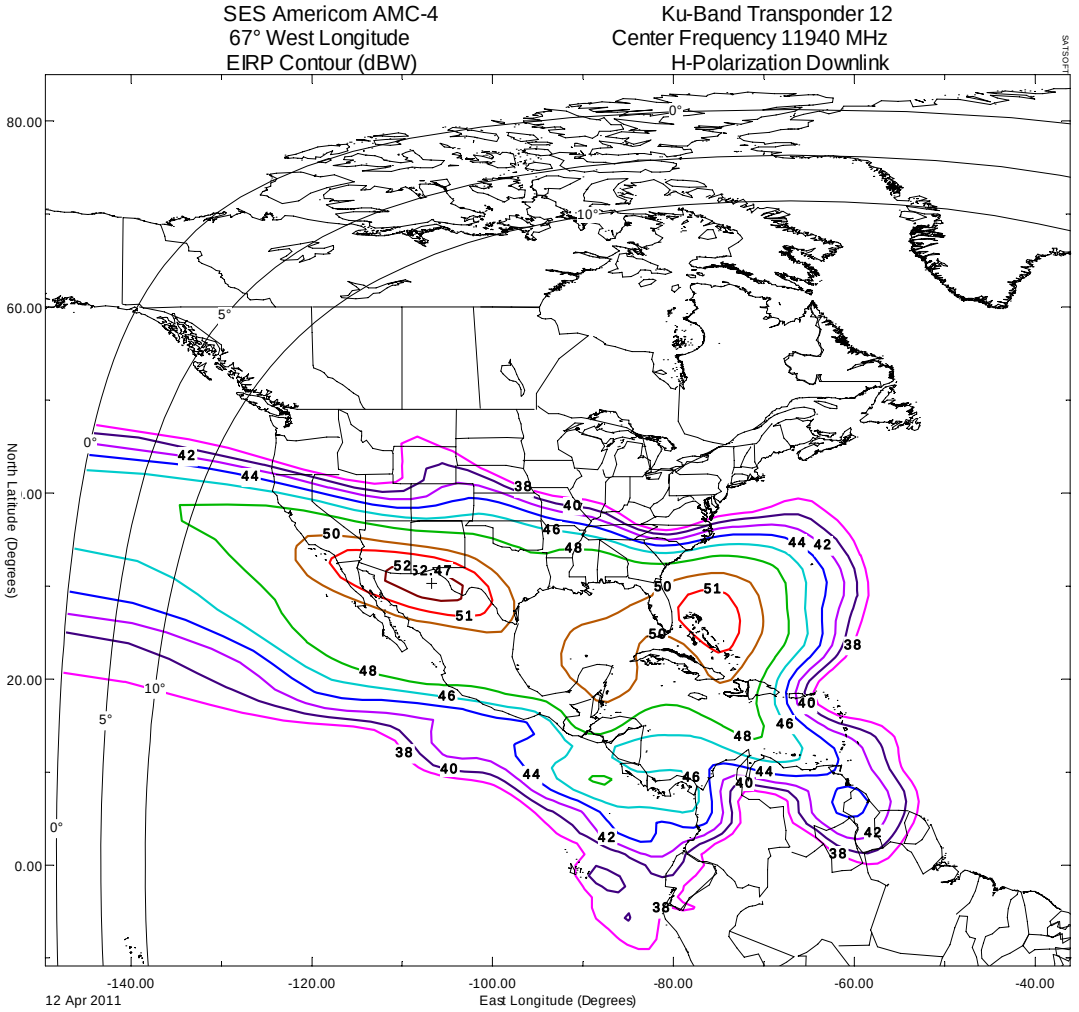


Figure 3

EIRP Pattern of AMC-4: Ku-band transponder 13, V-pol (down), original pointing

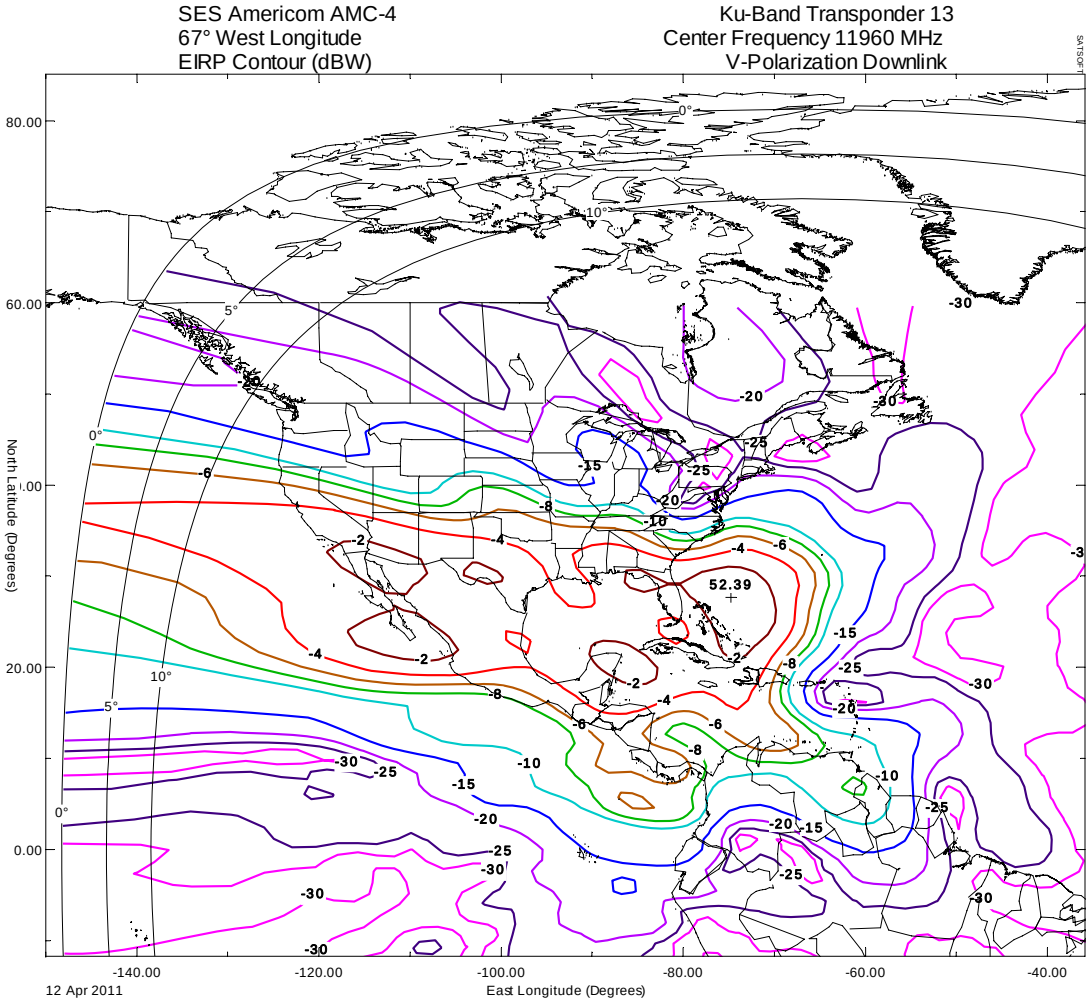


Figure 4

EIRP Pattern of AMC-4: Ku-band transponder 13, V-pol(down), revised pointing

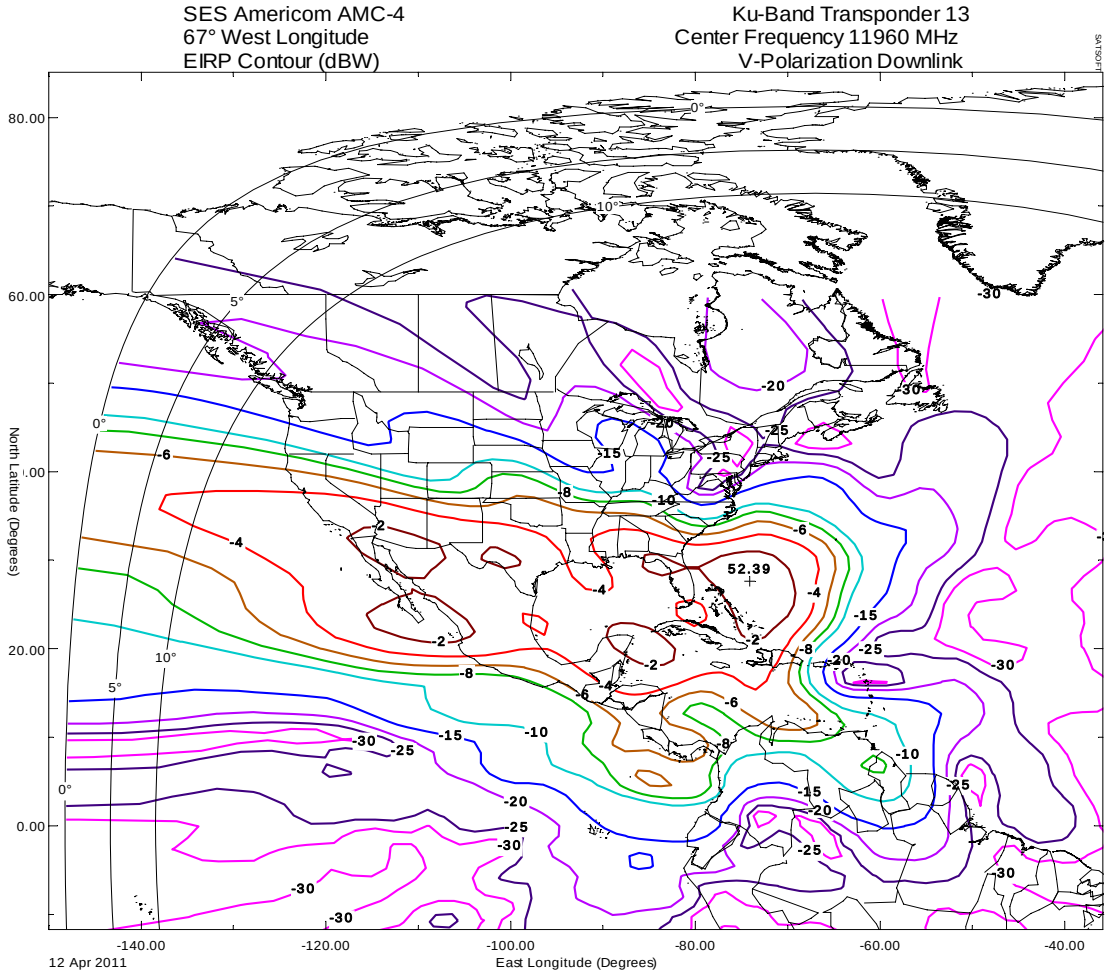


Figure 5

EIRP Pattern of AMC-4: C-band transponder 12, H-pol (down), original pointing

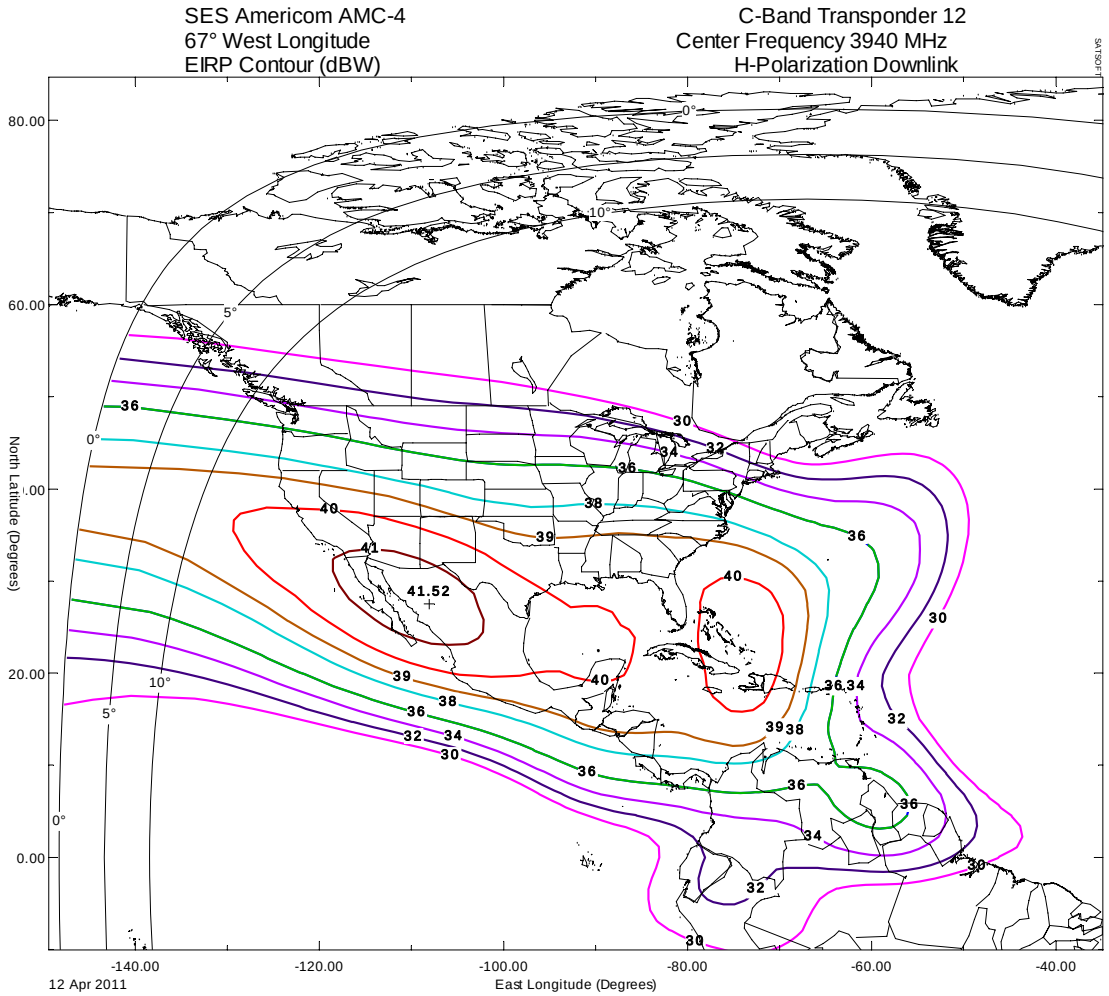


Figure 6

EIRP Pattern of AMC-4: C-band transponder 12, H-pol(down), revised pointing

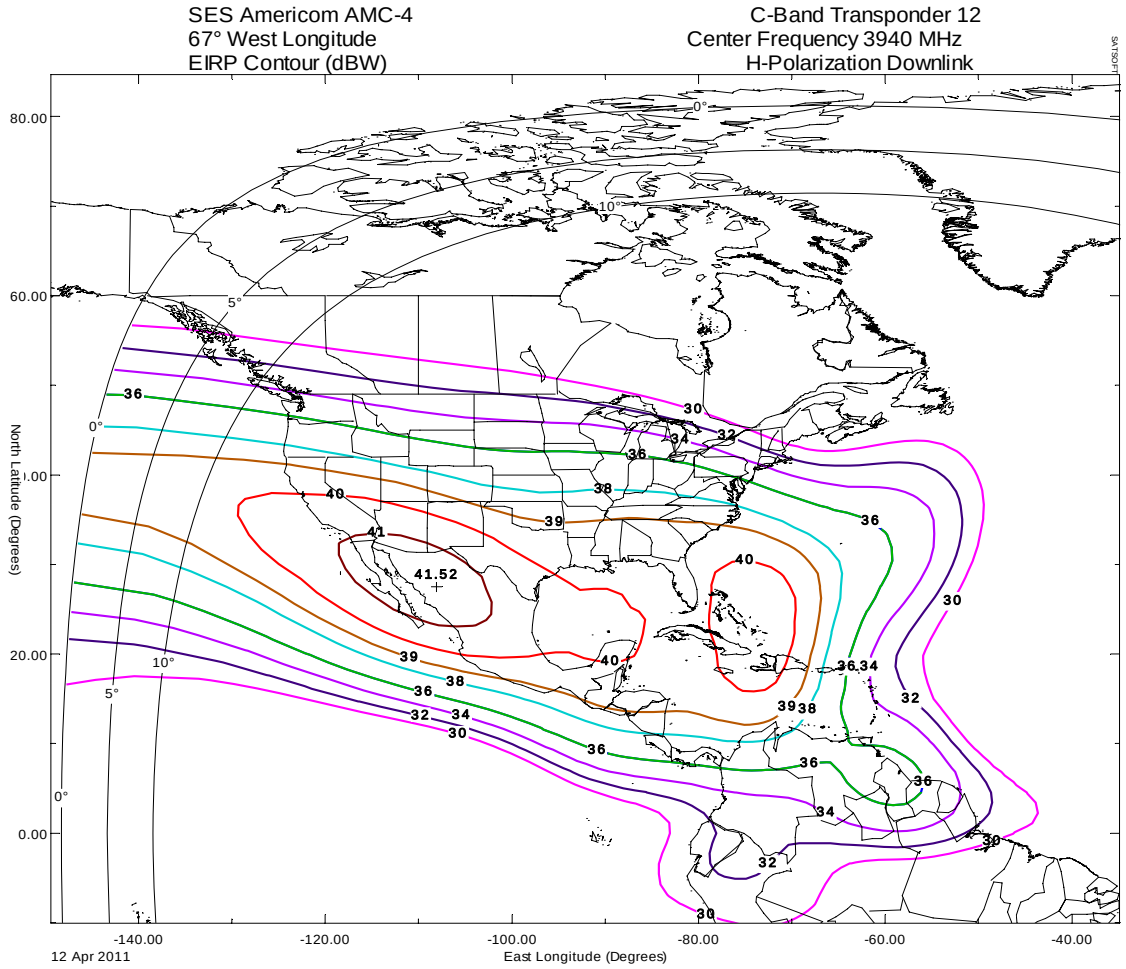


Figure 7

EIRP Pattern of AMC-4: C-band transponder 12, V-pol(down), original pointing

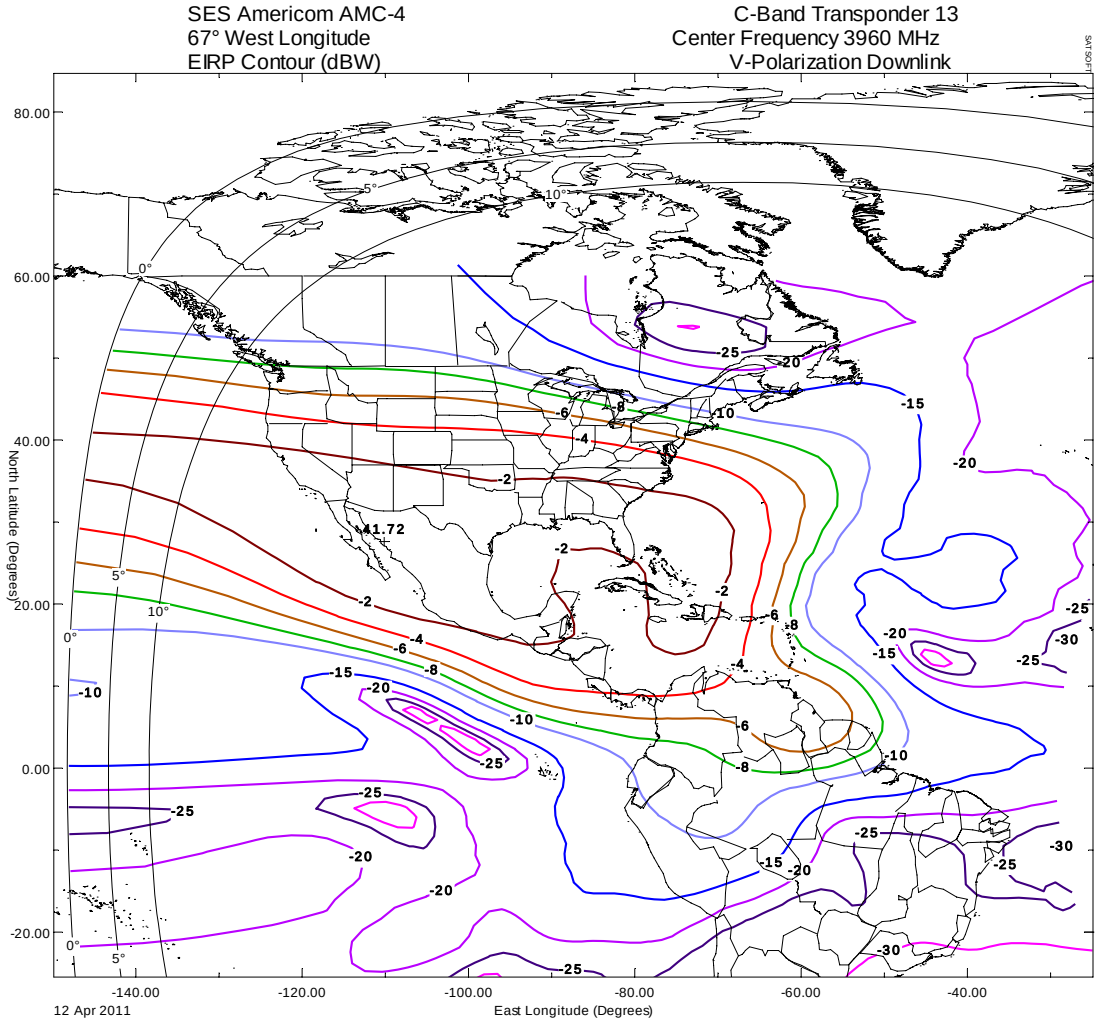
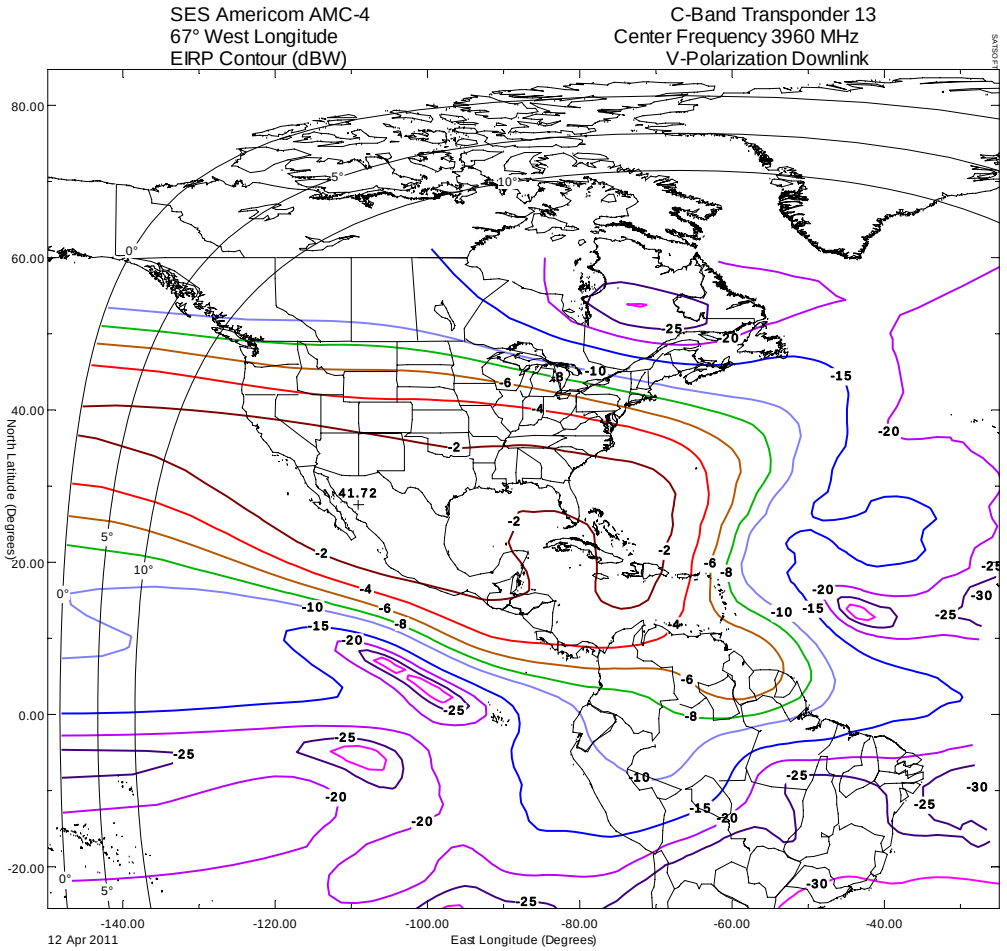


Figure 8

EIRP Pattern of AMC-4: C-band transponder 12, V-pol(down), revised pointing



DECLARATION OF KRISH JONNALAGADDA

I, Krish Jonnalagadda, hereby certify under penalty of perjury that I am the technically qualified person responsible for preparation of the technical information contained in the foregoing exhibit; that I am familiar with the technical requirements of Part 25; and that I either prepared or reviewed the technical information contained in the exhibit and that it is complete and accurate to the best of my knowledge, information and belief.

/s/ Krish Jonnalagadda
SES Americom, Inc.

Dated: May 10, 2011