STEPTOE & JOHNSON LLP
ATTORNEYS AT LAW

1330 Connecticut Avenue, NW
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Pantelis Michalopoulos
202.429.6494
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March

S2440 SAT-LOA-20020328-00050
EchoStar Satellite Corporation
EX-1

S2441 SAT-LOA-20020328-00051
EchoStar Satellite Corporation
EX-2

S2442 SAT-LOA-20020328-00052
EchoStar Satellite Corporation
EX-3

BY HAND DELIVERY

Magalie Roman Salas
Secretary
Federal Communications Commission
International Bureau – Satellites
P.O. Box 358210
Pittsburgh, PA 15251-5210

Re: Application of EchoStar S... Corporation for Authority to Construct, Launch and Op... a Direct Broadcast Satellite System Comprised of Three Satellites in the 17 GHz and 25 GHz Bands, File No. _____

Dear Ms. Salas:

On behalf of EchoStar Satellite Corporation ("ESC"), a Direct Broadcast Satellite ("DBS") permittee, enclosed please find for filing an original and four copies of an application for authority to construct, launch and operate a direct broadcast satellite system comprised of three satellites in the 17 GHz and 25 GHz bands. Also enclosed is a completed FCC Form 159 and a check in the amount of $89,280.00 for the applicable "Construction Permit and Launch Authority," "Authorization to Construct" and "License to Operate" filing fees. We are also enclosing an additional copy of this transmittal letter, which we ask you to date stamp and return with our messenger.

Please do not hesitate to contact me should you have any questions.

Respectfully submitted,

Pantelis Michalopoulos
Attorney for EchoStar Satellite Corporation

Enclosures

READ INSTRUCTIONS CAREFULLY BEFORE PROCEEDING

(1) LOCKBOX # **358210**

FEDERAL COMMUNICATIONS COMMISSION
REMITTANCE ADVICE

Approved by OMB
3060-0589
Page No 1 of 3

SPECIAL USE

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SECTION A - PAYER INFORMATION

(2) PAYER NAME (if paying by credit card, enter name exactly as it appears on your card)
Steptoe & Johnson

(3) TOTAL AMOUNT PAID (U.S. Dollars and cents)
$89,280.00

(4) STREET ADDRESS LINE NO. 1
Attn: Pantelis Michalopolous

(5) STREET ADDRESS LINE NO. 2
1330 Connecticut Avenue, N.W.

(6) CITY
Washington

(7) STATE
DC

(8) ZIP CODE
20036-1795

(9) DAYTIME TELEPHONE NUMBER (include area code)
202-429-6494

(10) COUNTRY CODE (if not in U.S.A.)

FCC REGISTRATION NUMBER (FRN) AND TAX IDENTIFICATION NUMBER (TIN) REQUIRED

(11) PAYER (FRN)
0003-7546-29

(12) PAYER (TIN)
521349790

IF PAYER NAME AND THE APPLICANT NAME ARE DIFFERENT, COMPLETE SECTION B
IF MORE THAN ONE APPLICANT, USE CONTINUATION SHEETS (FORM 159-C)

(13) APPLICANT NAME
EchoStar Satellite Corporation

(14) STREET ADDRESS LINE NO. 1
Attn: David K. Moskowitz

(15) STREET ADDRESS LINE NO. 2
5701 South Santa Fe

(16) CITY
Littleton

(17) STATE
CO

(18) ZIP CODE
80120

(19) DAYTIME TELEPHONE NUMBER (include area code)
303-723-1000

(20) COUNTRY CODE (if not in U.S.A.)

FCC REGISTRATION NUMBER (FRN) AND TAX IDENTIFICATION NUMBER (TIN) REQUIRED

(21) APPLICANT (FRN)
0004-2658-80

(22) APPLICANT (TIN)
841114039

COMPLETE SECTION C FOR EACH SERVICE, IF MORE BOXES ARE NEEDED, USE CONTINUATION SHEET

(23A) CALL SIGN/OTHER ID
EX-1 (USABSN-9)

(24A) PAYMENT TYPE CODE
MXD

(25A) QUANTITY
1

(26A) FEE DUE FOR (PTC)
$26,295.00

(27A) TOTAL FEE
$26,295.00

FCC USE ONLY

(28A) FCC CODE 1

(29A) FCC CODE 2

(23B) CALL SIGN/OTHER ID
EX-1 (USABSN-9)

(24B) PAYMENT TYPE CODE
MTD

(25B) QUANTITY
1

(26B) FEE DUE FOR (PTC)
$2,710.00

(27B) TOTAL FEE
$2,710.00

FCC USE ONLY

(28B) FCC CODE 1

(29B) FCC CODE 2

SECTION D - CERTIFICATION

(30) CERTIFICATION STATEMENT
I, Carlos M. Nalda, certify under penalty of perjury that the foregoing and supporting information is true and correct to the best of my knowledge, information and belief. SIGNATURE Carlos M Nalda DATE 3/28/02

SECTION E - CREDIT CARD PAYMENT INFORMATION

(31)

☐ MASTERCARD

MASTERCARD/VISA ACCOUNT NUMBER:

EXPIRATION DATE:

☐ VISA

I hereby authorize the FCC to charge my VISA or MASTERCARD for the service(s)/authorization herein described.

SIGNATURE _____ DATE _____

REMITTANCE ADVICE (Continuation Sheet)

FEDERAL COMMUNICATIONS COMMISSION

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3060-0589

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SECTION BB - ADDITIONAL APPLICANT INFORMATION

(13) APPLICANT NAME			
(14) STREET ADDRESS LINE NO. 1			
(15) STREET ADDRESS LINE NO. 2			
(16) CITY		(17) STATE	(18) ZIP CODE
(19) DAYTIME TELEPHONE NUMBER (include area code)	(20) COUNTRY CODE (if not in U.S.A.)		

FCC REGISTRATION NUMBER (FRN) AND TAX IDENTIFICATION NUMBER (TIN) REQUIRED

(21) APPLICANT (FRN)	(22) APPLICANT (TIN)

IF MORE BOXES ARE NEEDED, USE ADDITIONAL FCC 159-C CONTINUATION SHEETS TO LIST EACH SERVICE

SECTION CC - PAYMENT INFORMATION

(23A) CALL SIGN/OTHER ID	(24A) PAYMENT TYPE CODE	(25A) QUANTITY
EX-1 (USABSN-9)	**MPD**	**1**

(26A) FEE DUE FOR (PTC)	(27A) TOTAL FEE	FCC USE ONLY
$755.00	**$755.00**	

(28A) FCC CODE 1	(29A) FCC CODE 2

(23B) CALL SIGN/OTHER ID	(24B) PAYMENT TYPE CODE	(25B) QUANTITY
EX-2 (USABSN-10)	**MXD**	**1**

(26B) FEE DUE FOR (PTC)	(27B) TOTAL FEE	FCC USE ONLY
$26,295.00	$26,295.00	

(28B) FCC CODE 1	(29B) FCC CODE 2

(23C) CALL SIGN/OTHER ID	(24C) PAYMENT TYPE CODE	(25C) QUANTITY
EX-2 (USABSN-10)	**MTD**	**1**

(26C) FEE DUE FOR (PTC)	(27C) TOTAL FEE	FCC USE ONLY
$2,710.00	**$2,710.00**	

(28C) FCC CODE 1	(29C) FCC CODE 2

(23D) CALL SIGN/OTHER ID	(24D) PAYMENT TYPE CODE	(25D) QUANTITY
EX-2 (USABSN-10)	**MPD**	**1**

(26D) FEE DUE FOR (PTC)	(27D) TOTAL FEE	FCC USE ONLY
$755.00	**$755.00**	

(28D) FCC CODE 1	(29D) FCC CODE 2

(23E) CALL SIGN/OTHER ID	(24E) PAYMENT TYPE CODE	(25E) QUANTITY
EX-3 (USABSN-11)	**MXD**	**1**

(26E) FEE DUE FOR (PTC)	(27E) TOTAL FEE	FCC USE ONLY
$26,295.00	**$26,295.00**	

(28E) FCC CODE 1	(29E) FCC CODE 2

(23F) CALL SIGN/OTHER ID	(24F) PAYMENT TYPE CODE	(25F) QUANTITY
EX-3 (USABSN-11)	**MTD**	**1**

(26F) FEE DUE FOR (PTC)	(27F) TOTAL FEE	FCC USE ONLY
$2,710.00	**$2,710.00**	

(28F) FCC CODE 1	(29F) FCC CODE 2

REMITTANCE ADVICE (Continuation Sheet)

FEDERAL COMMUNICATIONS COMMISSION

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3060-0589
Page No 3 of 3

SPECIAL USE
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USE THIS SECTION ONLY FOR EACH ADDITONAL APPLICANT

SECTION BB - ADDITIONAL APPLICANT INFORMATION

(13) APPLICANT NAME			
(14) STREET ADDRESS LINE NO. 1			
(15) STREET ADDRESS LINE NO. 2			
(16) CITY		(17) STATE	(18) ZIP CODE
(19) DAYTIME TELEPHONE NUMBER (include area code)	(20) COUNTRY CODE (if not in U.S.A.)		

FCC REGISTRATION NUMBER (FRN) AND TAX IDENTIFICATION NUMBER (TIN) REQUIRED

(21) APPLICANT (FRN)	(22) APPLICANT (TIN)

IF MORE BOXES ARE NEEDED, USE ADDITIONAL FCC 159-C CONTINUATION SHEETS TO LIST EACH SERVICE

SECTION CC - PAYMENT INFORMATION

(23A) CALL SIGN/OTHER ID	(24A) PAYMENT TYPE CODE	(25A) QUANTITY
EX-3 (USABSN-11)	**MPD**	**1**

(26A) FEE DUE FOR (PTC)	(27A) TOTAL FEE	FCC USE ONLY
$755.00	**$755.00**	

(28A) FCC CODE 1	(29A) FCC CODE 2

(23B) CALL SIGN/OTHER ID	(24B) PAYMENT TYPE CODE	(25B) QUANTITY

(26B) FEE DUE FOR (PTC)	(27B) TOTAL FEE	FCC USE ONLY

(28B) FCC CODE 1	(29B) FCC CODE 2

(23C) CALL SIGN/OTHER ID	(24C) PAYMENT TYPE CODE	(25C) QUANTITY

(26C) FEE DUE FOR (PTC)	(27C) TOTAL FEE	FCC USE ONLY

(28C) FCC CODE 1	(29C) FCC CODE 2

(23D) CALL SIGN/OTHER ID	(24D) PAYMENT TYPE CODE	(25D) QUANTITY

(26D) FEE DUE FOR (PTC)	(27D) TOTAL FEE	FCC USE ONLY

(28D) FCC CODE 1	(29D) FCC CODE 2

(23E) CALL SIGN/OTHER ID	(24E) PAYMENT TYPE CODE	(25E) QUANTITY

(26E) FEE DUE FOR (PTC)	(27E) TOTAL FEE	FCC USE ONLY

(28E) FCC CODE 1	(29E) FCC CODE 2

(23F) CALL SIGN/OTHER ID	(24F) PAYMENT TYPE CODE	(25F) QUANTITY

(26F) FEE DUE FOR (PTC)	(27F) TOTAL FEE	FCC USE ONLY

(28F) FCC CODE 1	(29F) FCC CODE 2

STEPTOE & JOHNSON LLP

VENDOR #	VENDOR NAME				CHECK #	CHECK DATE
0261	FEDERAL COMMUNICATIONS COMMISSION				323538	03/27/2002
VOUCHER #	**INV DATE**	**INVOICE #**	**COMMENTS**	**GROSS**	**DISCOUNT**	**AMOUNT PAID**
380489	03/27/2002	026103272002	FILING FEE	89,280.00	0.00	89,280.00
CUSTOMER REF#			**CHECK TOTALS**	**89,280.00**	**0.00**	**89,280.00**

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CHECK DATE: **03/27/2002**
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EIGHTY-NINE THOUSAND TWO HUNDRED EIGHTY AND 00/100 Dollar **$89,280.00****

3673 G3

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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of:	)	
ECHOSTAR SATELLITE CORPORATION	)	**File No.** _____
Application for Authority to Construct, Launch and Operate a Direct Broadcast Satellite System Comprised of Three Satellites in the 17 GHz and 25 GHz Bands.	)	

APPLICATION

Pursuant to Sections 308, 309 and 319 of the Communications Act, as amended, 47 U.S.C. §§ 308, 309, 319, and Section 100.13 of the Commission's Rules, 47 C.F.R. § 100.13, EchoStar Satellite Corporation, a wholly-owned subsidiary of EchoStar Communications Corporation ("EchoStar"), hereby applies for authority to construct, launch and operate a new Direct Broadcast Satellite ("DBS") system comprised of three satellites using the 17 GHz and 25 GHz Broadcast-Satellite Service ("BSS") frequency bands ("DBS Expansion Band") recently allocated by the Commission to provide new and innovative DBS services.[1] Subject to a decision by the Commission to develop an orbital spacing plan for the DBS Expansion Band,

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[1] See *In the Matter of Resignation of the 17.7-19.7 GHz Frequency Band, Blanket Licensing of Satellite Earth Stations in the 17.7-20.2 GHz and 27.5-30.0 GHz Bands, and the Allocation of Additional Spectrum in the 17.3-17.8 GHz and 24.75-25.25 GHz Frequency Bands for Broadcast Satellite-Service Use,* Report and Order, 15 FCC Rcd 13430 (2000) (the "DBS Expansion Allocation Order"), *reconsideration denied in part* First Order on Reconsideration, FCC 01-323 (rel. Nov. 1, 2001) ("18 GHz Reconsideration Order").

EchoStar intends to launch these satellites (designated EX-1, EX-2 and EX-3) into adjacent orbital locations at 110° W.L., 114.5° W.L. and 119° W.L., respectively, assuming a 4.5° separation between each satellite.[2]

As the Commission is well aware, EchoStar is a leading provider of DBS services in the Multichannel Video Programming Distribution ("MVPD") market with over 7 million subscribers. It is also an applicant, along with Hughes Electronics Corporation ("Hughes") and General Motors Corporation, to obtain the Commission's approval to merge their businesses into a combined entity that will be named EchoStar Communications Corporation ("New EchoStar").[3] Even with this proposed merger, EchoStar anticipates that by the time the expansion DBS spectrum becomes available in April 2007, additional channel capacity will be needed to serve its subscribers with new and innovative DBS and other spectrum intensive services, such as more High Definition Television ("HDTV") and interactive multimedia offerings. These services will complement the existing DBS services currently being offered over EchoStar's current fleet of DBS satellites using the 12.2-12.7 GHz band. While the extent to which the DBS Expansion Band can be fully integrated with EchoStar's existing DBS services remains uncertain at this time, this spectrum presents the potential for such integrated services starting in 2007.

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[2] The Commission has indicated that it will address the orbital spacing in this band in a future proceeding that relates to service rules. *Id.* ¶ 100. EchoStar reserves the right to amend this application to reflect different orbital spacing in the DBS Expansion Band once the Commission institutes this rulemaking proceeding.

[3] *See* Consolidated Application of EchoStar Communications Corporation, General Motors Corporation, Hughes Electronics Corporation for Authority to Transfer Control, CS Docket No. 01-348 (filed Dec. 3, 2001) ("Merger Application").

I. INTRODUCTION

In the DBS Expansion Allocation Order, the Commission allocated the 17.3-17.7 GHz band to the Broadcasting-Satellite Service ("BSS") and the 24.75-25.25 GHz band to the Fixed-Satellite Service ("FSS") for BSS feeder links (Earth-to-space), effective April 1, 2007.[4] In so doing, the Commission noted that BSS/DBS is a rapidly growing service and that additional DBS spectrum will be needed within the next decade.[5] While this allocation will not take effect for another five years, the Commission wisely recognized that time was necessary "to provide all parties with sufficient notice . . . to design their systems to use this spectrum in the most efficient manner."[6]

The new DBS system proposed by EchoStar will consist of three state-of-the-art satellites, with one satellite nominally to be located at the 110° W.L., 114.5° W.L. and 119° W.L. orbital locations. Each satellite will be designed so that it also could be used as an in-orbit spare for the other two orbital locations in case of an in orbit failure or anomaly. Each satellite will provide DBS coverage to the continental United States ("CONUS"), Hawaii, Alaska, Puerto Rico and the U.S. Virgin Islands, plus portions of Canada, Mexico, and many Caribbean nations using the 17.3-17.8 GHz band for BSS downlinks.[7] The satellites will use the 24.75-25.25 GHz

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[4] *See* DBS Expansion Allocation Order.

[5] *Id.* ¶ 97.

[6] *Id.* ¶ 99.

[7] Although the Commission only allocated 400 MHz at 17.3-17.7 GHz to BSS in the United States (which is inconsistent with the ITU Region 2 allocation of 500 MHz of BSS spectrum at 17.3-17.8 GHz), it further indicated that it may re-examine the availability of all or part of the 17.7-17.8 GHz band for BSS applications in the future. *See DBS Expansion*

(Continued ...)

band for BSS feeder uplinks, and EchoStar currently plans to operate the feeder link and TT&C earth stations associated with its DBS Expansion Band system in Cheyenne, Wyoming and Gilbert, Arizona, where EchoStar's existing earth station complexes are located.[8]

While the extent to which this spectrum can be fully integrated with EchoStar's conventional DBS services is not entirely known at this time, the primary intended use of the proposed satellites may well be to supplement EchoStar's MVPD offerings to residential subscribers in the United States. Additional services also will be offered to business users and international consumers as regulatory approvals are obtained in other North American countries. Some of the types of programming that EchoStar anticipates providing over this system include more bandwidth-intensive HDTV programming and a wider variety of entertainment, education, informational and ethnic programming. In addition, it is anticipated that new data and multimedia services will be offered using this expansion spectrum.

EchoStar's proposed expansion system is another potentially important component in maintaining its ability to compete in the robust MVPD market. Even with the extraordinary efficiency and spectrum capacity gains that will result from the proposed merger with Hughes, EchoStar anticipates that there will be a growing number of digital cable systems and other MVPD competitors that likely will have more effective capacity than New EchoStar by

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Allocation Order, at ¶ 99; *18 GHz Reconsideration Order*, at ¶¶ 30-31. Although EchoStar intends to use the 17.7-17.8 GHz band to provide service to the United States if this spectrum becomes available domestically, at a minimum EchoStar plans to use this band for international BSS services to other portions of North America, including Canada, Mexico and the Caribbean, and therefore needs Commission authority to operate in the 17.7-17.8 GHz band subject to U.S. and foreign spectrum allocations and relevant regulatory requirements.

[8] Current plans are for the transfer orbit and on-station TT&C links to operate in the 12.2-12.7 GHz and 17.3-17.8 GHz bands, or the 17.3-17.8 GHz and 24.75-25.25 GHz bands. Separate applications for these earth stations will be submitted to the Commission at a later date.

the latter part of this decade as a result of fiber optic and advanced terrestrial wireless system upgrades. Accordingly, the prompt approval of this application will further the public interest by promoting more effective competition with the dominant cable operators in the MVPD market.

While the Commission has not adopted any special service rules for the DBS Expansion Band, EchoStar's application and the proposed expansion system specifications fully satisfy all possibly relevant requirements of the Commission's Rules.[9] EchoStar is legally, technically, financially and otherwise qualified to construct, launch and operate the requested DBS expansion system. EchoStar's ownership structure complies fully with the DBS alien ownership rules.[10] The proposed system is also technically capable of providing, and will provide, expanded DBS service to Alaska and Hawaii.[11] EchoStar is prepared to complete construction of the first satellite within four years of the grant of this application and place the entire expansion DBS system into operation within six years from the grant date. To the extent that new service rules are adopted by the Commission before this application is acted upon, EchoStar requests leave to supplement and amend this application to comply with such rules in accordance with standard Commission practice.

Since the DBS Expansion Band is not a planned BSS frequency band, EchoStar urges the Commission to submit promptly to the International Telecommunication Union

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[9] *See* 47 C.F.R. Part 100.

[10] *See* 47 C.F.R. § 100.11.

[11] *See* 47 C.F.R. § 100.53(b).

("ITU") the attached Advanced Publication information to begin the process of coordinating the proposed system with other Administrations.[12]

The following information is provided to the Commission in support of this application:

II. APPLICANT NAME AND CONTACT INFORMATION

Name, address and phone number of applicant:

EchoStar Satellite Corporation
5701 South Santa Fe
Littleton, CO 80102
(303) 723-1000

Names, addresses and phone numbers of persons to be contacted:

EchoStar Satellite Corporation
Attn: Mr. David K. Moskowitz
5701 South Santa Fe
Littleton, CO 80102
(303) 723-1000

Philip L. Malet
Pantelis Michalopoulos
Carlos M. Nalda
Todd Lantor
Steptoe & Johnson LLP
1330 Connecticut Avenue, N.W.
Washington, DC 20036
(202) 429-3000

III. OWNERSHIP INFORMATION

The applicant, EchoStar Satellite Corporation, is a Colorado corporation wholly owned through two intermediate parent corporations by EchoStar Communications Corporation ("ECC"), a Nevada corporation. ECC is controlled through a family trust by Mr. Charles W.

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[12] *See* Attachment B, hereto. This attachment also includes a letter confirming that EchoStar will be responsible for paying all fees imposed by the ITU for coordinating these satellites. *Id.*

Ergen, its founder, Chairman and Chief Executive Officer. An organizational chart and relevant ownership information is provided as Attachment C to this application. ECC is the holding company for a group of companies that deliver a complete range of satellite-related products and services to consumers throughout the world. ECC's subsidiaries hold several DBS authorizations and own and operate six operational DBS satellites operating in the 12.2-12.7 GHz band at the 61.5° W.L., 110° W.L., 119° W.L., and 148° W.L. orbital positions. A seventh satellite is currently undergoing in-orbit testing. Through its DISH Network brand, EchoStar provides DBS services in the United States to more than 7 million subscribers.[13]

IV. SERVICES TO BE PROVIDED

The primary use of the proposed system is expected to be the provision of MVPD services in the United States. It is anticipated that most of the capacity on these satellites will be used for serving the U.S.; however, at least some of the beam coverage will extend beyond the United States into portions of Canada, Mexico and the Caribbean. Subject to obtaining any necessary international regulatory approvals, EchoStar also may provide MVPD services in other ITU Region 2 countries.

As the Commission is aware, an application filed in December 2001, requests authority for the merger of EchoStar and Hughes, with the merged entity renamed EchoStar Communications Corporation ("New EchoStar"). As explained in detail in that application, the

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[13] A complete list of EchoStar's FCC authorizations, subsidiaries, and pending applications before the Commission is contained in the Merger Application at Attachments C, D, and G, and is incorporated herein by reference. In addition, on February 25, 2002, EchoStar and Hughes jointly filed an application for authority to launch and operate a new spot-beam DBS satellite at 110° W.L. in the 12.2-12.7 GHz band. This satellite will be used by New EchoStar for its "Local Channels, All Americans" plan which would offer to every U.S. consumer access to satellite-delivered local television signals to all 210 DMAs in the United States, including those in Alaska and Hawaii. *See* Application for Authority to Launch and Operate New EchoStar 1 (USABBS-16), File No. _____ (filed Feb. 25, 2002).

merger and related transactions will create an integrated, full-service satellite company better able to compete effectively in the MVPD market.[14] One of the most compelling efficiencies of the proposed merger will be the elimination of the duplicative use of the DBS spectrum, which will free up substantial satellite capacity and spectrum that will be used to facilitate the offering of new and expanded programming choices to consumers and more meaningful competition to the dominant cable providers.[15] Even with this expanded capacity, EchoStar anticipates that by April 2007, it will need even more spectrum resources to serve DBS subscribers with new and innovative program offerings.

Some of this programming, such as HDTV, is extremely spectrum intensive, requiring many times more bandwidth than standard NTSC video signals. To date, EchoStar has only been able to offer its subscribers a limited amount of HDTV programming due to the constraints on its spectrum capacity. Even with the merger with Hughes, New EchoStar can only commit today to offering 10-12 HDTV channels to its combined subscriber base.[16] With the addition of the DBS Expansion Band, however, there will be enough capacity available to offer DBS subscribers significantly more HDTV and other programming.

EchoStar further anticipates that it will be able to offer a wider range of niche programming, including more international, foreign language, informational and educational programs, to its DBS subscribers if it had access to the DBS Expansion Band. There are approximately 8.0 million households in the United States headed by persons of foreign nationality, encompassing 22.6 million foreign-born persons living in the United States.

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[14] *See* Merger Application at 22-36.

[15] *Id.* at 37-49.

[16] *Id.* at 29.

Generally, it is not cost effective for traditional broadcasters or cable companies to serve these households because of the generally low number of such niche customers in any particular local market. These customers, along with other customers interested in receiving international and other cultural programming, create an opportunity to provide more foreign language and international content over the DISH Network.

Specialized programming and other services could also be made available to business users that are a potential large untapped market for MVPD services. EchoStar estimates that there are approximately 8 million businesses and over 200,000 schools, libraries and other institutions that desire access to high quality video, audio and data programming services. EchoStar believes that with the increased capacity provided by the DBS Expansion Band, more specialty services, data, informational, educational, foreign language and other niche programming can be directed toward this market in order to attract new subscribers.

V. PUBLIC INTEREST CONSIDERATIONS

The prompt grant of EchoStar's application for authority to construct, launch and operate a new DBS Expansion Band system is clearly in the public interest. The proposed system will benefit the public in many important respects. Most significantly, EchoStar expects that it will be able to offer a whole range of new and innovative services that otherwise could not have been made available even taking into account the planned merger with Hughes. By accessing new DBS spectrum made available by the Commission, EchoStar will better be able to serve its subscribers and compete more effectively in the MVPD market. EchoStar also will be able to provide enhanced service to more of Alaska and Hawaii.

It is well documented that there is a shortage of spectrum available for DBS in the United States. There is simply no more full-CONUS capacity in the 12.2-12.7 GHz band available to support the expansion of DBS services. Nevertheless, as the Commission has

acknowledged, the demand for additional DBS capacity only continues to grow.[17] In contrast, cable operators have aggressively upgraded the capacity of their systems to allow for the digital retransmission of video programming.[18] The rollout of new digital cable upgrades and related facilities has compounded cable's incumbency advantages, and allows cable operators to offer a bundle of video and services. Access to the DBS Expansion Band provides EchoStar with a unique opportunity to meet the growing need for DBS capacity, and will enable EchoStar to compete more effectively in the highly competitive MPVD market.

Consistent with the Commission's stated goals for use of the DBS Expansion Band, EchoStar's proposed system also will help foster the development of next-generation DBS services and satellite telecommunications technologies needed to implement them.[19] Thus, grant of this application will assist the United States in enhancing its global leadership role in advanced satellite systems and services.

In addition, EchoStar's Expansion DBS System is designed to maximize the efficient use of orbital and spectrum resources. By operating in orbital locations that overlap the United States' existing Ku-band DBS orbital assignment plan, the EchoStar Expansion DBS System will be able to provide advanced DBS services that complement existing services without necessarily requiring customers to access additional orbit locations. In addition to

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[17] See *DBS Expansion Allocation Order* at ¶ 79 ("We note that BSS is a rapidly growing service, and that additional spectrum may be required for BSS within the next decade.")

[18] See *Annual Assessment of the Status of Competition in the Market for the Delivery of MVPD Competition Report*, 16 FCC Rcd. 6005, 6009 (2001) ("[v]irtually all the major MSOs offer Internet access via cable modems in portions of their nationwide service areas... Many cable operators also are planning to integrate telephony and high-speed data access.")

[19] See *DBS Expansion Allocation Order* at ¶ 2 ("The 18 GHz band currently serves a variety of communications needs and has the potential to provide consumers, both business and residential, with exciting new services in the years to come.")

maximizing operational and service flexibility, co-locating Ku-band and DBS Expansion Band satellites also will enable DBS operators to minimize intersystem interference and utilize the CONUS arc in an extremely efficient manner.

By enhancing competition in the MPVD market, boosting the competitiveness of DBS industry and facilitating the efficient use of orbital and spectrum resources, the proposed EchoStar DBS Expansion System will serve the public interest and simultaneously adhere to the Commission's stated policy goals for this band.[20] Accordingly, the Commission should not only grant this application because it is in the public interest, it should do so expeditiously to enable service in this band to begin by April 2007.

VI. DESCRIPTION OF PROPOSED SYSTEM AND INTERFERENCE ANALYSIS

A detailed technical description of EchoStar's proposed DBS Expansion Band system is set forth in Attachment A, hereto.

VII. ORBITAL ARC CONSIDERATIONS

EchoStar nominally requests three adjacent orbital locations within the 110° W.L. and 119° W.L. range for its DBS Expansion Band system separated by 4.5 degrees. This separation distance is dictated by the size of the receive antennas (nominally 45 cm) and adjacent satellite interference considerations. The requested orbital arc best matches EchoStar's existing DBS satellite resources which include the provision of its core national and local programming from Ku-band DBS satellites located at 110° W.L. and 119° W.L. EchoStar's planning with

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[20] See *DBS Expansion Allocation Order* at ¶ 1 ("With this Report and Order, we adopt rules that will permit the efficient use of spectrum for existing and future users, and will facilitate the deployment of new services in the 17.7-20.2 GHz band.")

respect to this future spectrum is necessarily subject to change at this time. As with other aspects of the proposed system, EchoStar requests the right to revise its proposed orbital positions and the appropriate spacing in the DBS Expansion Band when the Commission institutes its rulemaking proceeding on service rules for this band.

VIII. LEGAL QUALIFICATIONS

EchoStar's legal qualifications are set forth in the Merger Application, which is incorporated herein by reference.[21] EchoStar is not owned or controlled by aliens and further complies with all of the restrictions on alien and foreign government ownership set forth in the Communications Act of 1934, as amended,[22] and the Commission's Rules.[23]

IX. TECHNICAL QUALIFICATIONS -- DUE DILIGENCE MILESTONES

EchoStar's application satisfies the Commission's coverage rules for new DBS licensees. EchoStar's satellites will be capable of serving CONUS, Alaska, Hawaii, Puerto Rico and the U.S. Virgin Islands.[24] EchoStar is also prepared to comply with the Commission's due diligence requirements by completing contracting of the proposed system within one year of the grant of a construction permit, completing construction of the first satellite within four years of the grant, and placing the entire DBS Expansion Band system in operation within six years of the grant.[25]

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[21] *See* Merger Application at Volume III.

[22] *See* 47 U.S.C. § 310.

[23] *See* 47 C.F.R. § 100.11.

[24] *See* 47 C.F.R. § 100.53(e).

[25] *See* 47 C.F.R § 100.19.

X. SYSTEM COSTS AND FINANCIAL QUALIFICATIONS

EchoStar estimates that the cost of constructing and launching each satellite and operating it for one year will be as follows:

Construction, Launch and Insurance	$250-300 million
Other Miscellaneous Costs	$25-50 million
First Year Operational Costs	$10-15 million
TOTAL Estimated Costs (per satellite)	$285-365 million

While the Commission does not require a prior demonstration of financial fitness for DBS system applicants, EchoStar is a publicly traded company that clearly has the financial capacity to fund these costs. EchoStar's financial qualifications are a matter of public record.

XI. STATUS OF OPERATIONS

EchoStar intends to operate this DBS Expansion Band system on a non-broadcast, non-common carrier basis.

XII. WAIVER PURSUANT TO SECTION 304 OF THE ACT

In accordance with Section 304 of the Communications Act of 1934, as amended, 47 U.S.C. § 304, the parties to this application hereby waive any claim to the use of any particular frequency or of the electromagnetic spectrum as against the regulatory power of the United States because of the previous use of the same, whether by license or otherwise.

XIII. ANTI-DRUG CERTIFICATION

The undersigned hereby certifies that pursuant to Section 1.2002 of the Commission's Rules, 47 C.F.R. § 1.2002, no party to this application is subject to a denial of

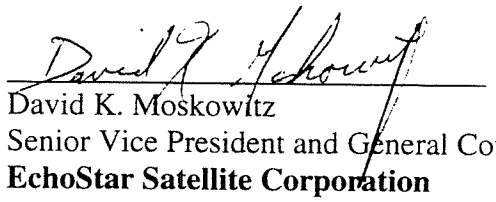
federal benefits pursuant to the authority granted in Section 5301 of the Anti Drug Abuse Act of 1988, 21 U.S.C. § 853a.

XIV. CONCLUSION

For the foregoing reasons, EchoStar respectfully requests that the Commission promptly approve this application as in the public interest, convenience and necessity.

Respectfully submitted,

EchoStar Satellite Corporation



David K. Moskowitz
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Dated: March 28, 2002

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(202) 429-3000

DECLARATION

I, David K. Moskowitz, hereby declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge, information and belief.

David K. Moskowitz
Senior Vice President and
General Counsel
EchoStar Satellite Corporation
5701 South Santa Fe
Littleton, CO 80120
(303) 723-1000

Dated: March 28, 2002

CERTIFICATION OF PERSON RESPONSIBLE FOR PREPARING ENGINEERING INFORMATION

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

David W. Bair
Vice President, Space Programs and Operations
EchoStar Communications Corporation
5701 S. Santa Fe Drive
Littleton, CO 80120

Dated: March 28, 2002

Exhibit A

ATTACHMENT A
TECHNICAL DESCRIPTION

A.1 GENERAL DESCRIPTION

The EchoStar DBS Expansion Band System consists of three near-identical "bent-pipe" satellites nominally operating in three geostationary orbital locations (119°W.L., 114.5°W.L. and 110°W.L.) to provide international and domestic DBS ("Direct Broadcast Satellite") services to North America, designated EX-1, EX-2 and EX-3, respectively.[1] The satellites will use the 17.3-17.8 GHz downlink band and the 24.75-25.25 GHz uplink band.[2]

Each of the satellites will operate transponders of identical useful bandwidth (24 MHz) and spacing (29.18 MHz) as used for DBS satellites at Ku-band. Twenty-six of these transponders will operate in the lower 400 MHz of the band using a U.S. coverage beam and the six remaining transponders will operate in the upper 100 MHz using a broad North American coverage beam. The uplinks to all the transponders are planned from EchoStar's existing feeder link station facilities in Wyoming and Arizona.

A.2 ORBITAL LOCATIONS

EchoStar nominally requests Commission authority to use the 110°W.L., 114.5°W.L. and 119°W.L. geostationary orbital locations for its DBS Expansion Band System. Use of these

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1 The satellites will be nearly identical to each other except for minor beam coverage differences that allow for optimum coverage from each orbital location.

2 These bands, with the exception of the 17.7-17.8 GHz band, were allocated to the DBS service by the Commission and are available for use from April 1, 2007. Although the entire 17.3-17.8 GHz band is allocated in the ITU Radio Regulations for Broadcasting Satellite Service ("BSS") in Region 2 from April 1, 2007, the Commission stopped short of allocating the 17.7-17.8 GHz band to BSS because of concerns that domestic terrestrial fixed services could interfere with DBS receivers. Therefore, EchoStar proposes to use the 17.7-17.8 GHz downlink band for service within the United States only if the Commission decides to allocate it in the future to DBS. However, regardless of the Commission's decision with respect to the domestic use of this band, EchoStar plans to use the 17.7-17.8 GHz band for international BSS services to North America, including Canada, Mexico and the Caribbean.

locations will allow the DBS Expansion Band satellites to operate in the same range of orbital locations used by EchoStar for its existing fleet of Ku-DBS satellites. This potentially will enable EchoStar to provide additional services in the 17 GHz band without necessarily having to provide access to more orbital locations than at present with the Ku-band DBS system. EchoStar's primary DBS orbital locations, which can provide full-CONUS coverage, are 110°W.L. and 119°W.L.[3]

The nine degree orbital separation inherent in the ITU's Region 2 BSS Plan (Appendix 30 of the Radio Regulations) is not necessary at the higher 17 GHz frequencies.[4] For example, service to 45 cm dishes is possible at 17 GHz using 4.5° orbital separation, while maintaining adjacent satellite interference to acceptable levels, as demonstrated in Section A.22 below. Therefore, under this scenario EchoStar proposes to also use the intermediate orbital location of 114.5°W that is equally spaced by 4.5° from the existing EchoStar locations of 110°W.L. and 119°W.L..[5]

Another consideration in EchoStar's selection of orbital locations is the need to maintain high elevation angles over the service area, to the extent possible. This is important, not just to minimize the risk of signal blockage due to buildings and foliage, but also to minimize the atmospheric and rain attenuation, which is a much greater consideration at 17 GHz than at the 12 GHz DBS frequency bands.

Figure A.2-1 shows the elevation angles in bold to the 114.5°W.L. orbital location from the service areas of the proposed EchoStar DBS Expansion Band satellites. The fainter lines are the corresponding elevation angles from the adjacent orbital locations of 119°W.L. and 110°W.L. Note that the majority of CONUS as well as Hawaii are above the 30° elevation angle for all three orbital

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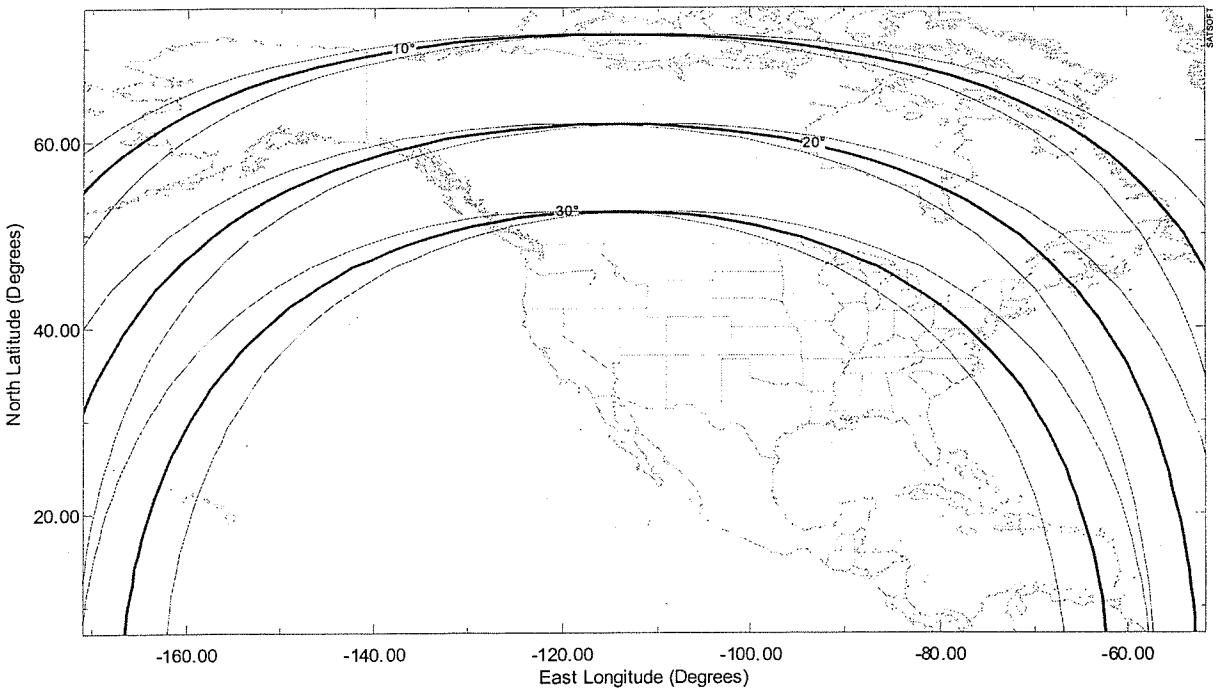
3 Refer also to Section A.23 where the issue of potential satellite-to-satellite interference in the 17.3-17.8 GHz band is discussed. Note that the common control of 12 GHz and 17 GHz DBS satellites at the same nominal orbital location will greatly facilitate the control of this interference.

4 The ITU's Region 2 BSS Plan was created in the years leading up to the 1983 Regional Administrative Radio Conference (RARC) and the technology assumed in the Plan is now outdated.

5 The EchoStar DBS Expansion Band System will ultimately serve many new and existing subscribers using 45 cm dishes. In this scenario, it is essential that adjacent satellite interference is maintained at acceptably low levels, and EchoStar believes that this can be achieved with the highest degree of confidence when the adjacent satellites are under the control of the same entity. Therefore, the assignment to EchoStar of adjacent orbital locations in the DBS Expansion Spectrum geostationary arc is considered to be very important from this point of view.

locations. The only parts of the service areas that are below 30° are the far northeast reaches of New England (where the elevation angle is still greater than 20° for the more easterly orbital locations) and Alaska where, because of its extreme northerly latitude, the elevation angle inevitably drops below 20°.

Figure A.2-1 – Elevation Angles to the 114.5°W.L. Orbital Location



A.3 SATELLITE COVERAGE

The EchoStar DBS Expansion Band satellites will provide broadcast services to CONUS, Hawaii, Alaska, Puerto Rico and the US Virgin Islands (the "service area") using 26 transponders in the "CONUS+ Beam." In the remaining six transponders service will be provided to the majority of North America, including all of the U.S., Canada, Mexico and the Caribbean in the "REGIONAL Beam."

It is anticipated that the feeder link signals will be transmitted from EchoStar's main uplink facility located in Cheyenne, Wyoming. The satellite receive beam used for the feeder uplink will be

sufficiently large to also allow for back-up feeder link transmissions from the EchoStar uplink facility located in Gilbert, Arizona.

Sections A.5 and A.6 provide full details of the various antenna beams used to provide these satellite coverages.

A.4 FREQUENCY AND POLARIZATION PLANS

The EchoStar DBS Expansion Band System will use the 24.75-25.25 GHz uplink band and the 17.3-17.8 GHz downlink band with the frequency plan given in Table A.4-1. All transponders are of nominal 24 MHz useful bandwidth, and spaced 29.16 MHz apart (co-polar), the same as for EchoStar's existing DBS satellites which operate in the Ku-band.[6,7,8] The exact transponder center, upper and lower frequencies, as well as the transponder polarizations, are given in Table A.4-1. Circular polarization is used on both the uplink and downlink, with the downlink polarization being orthogonal to the uplink for each transponder. The cross-polar transponders are offset by 14.58 MHz relative to the co-polar ones in order to provide the maximum cross-polar isolation resulting from the guard bands.

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6 This transponder bandwidth and spacing is consistent with the Region 2 BSS Plan contained in Appendix 30 of the ITU Radio Regulations.

7 Note that use of the same transponder bandwidths and spacing will maximize compatibility with the existing subscriber equipment and therefore minimize costs to the subscriber.

8 The frequency spacing increases to 38.58 MHz between co-polar transponders #25 and #27 (and co-polar transponders #26 and #28) in order to segregate the transponders into the two distinct frequency ranges corresponding to 17.3-17.7 GHz and 17.7-17.8 GHz.

Table A.4-1 - Transponder Frequency Plan

Txpdr #	UPLINK				DOWNLINK			
	Pol'n	Center Freq	F_{low}	F_{high}	Pol'n	Center Freq	F_{low}	F_{high}
1	RHCP	24,773.50	24,761.50	24,785.50	LHCP	17,323.50	17,311.50	17,335.50
2	LHCP	24,788.08	24,776.08	24,800.08	RHCP	17,338.08	17,326.08	17,350.08
3	RHCP	24,802.66	24,790.66	24,814.66	LHCP	17,352.66	17,340.66	17,364.66
4	LHCP	24,817.24	24,805.24	24,829.24	RHCP	17,367.24	17,355.24	17,379.24
5	RHCP	24,831.82	24,819.82	24,843.82	LHCP	17,381.82	17,369.82	17,393.82
6	LHCP	24,846.40	24,834.40	24,858.40	RHCP	17,396.40	17,384.40	17,408.40
7	RHCP	24,860.98	24,848.98	24,872.98	LHCP	17,410.98	17,398.98	17,422.98
8	LHCP	24,875.56	24,863.56	24,887.56	RHCP	17,425.56	17,413.56	17,437.56
9	RHCP	24,890.14	24,878.14	24,902.14	LHCP	17,440.14	17,428.14	17,452.14
10	LHCP	24,904.72	24,892.72	24,916.72	RHCP	17,454.72	17,442.72	17,466.72
11	RHCP	24,919.30	24,907.30	24,931.30	LHCP	17,469.30	17,457.30	17,481.30
12	LHCP	24,933.88	24,921.88	24,945.88	RHCP	17,483.88	17,471.88	17,495.88
13	RHCP	24,948.46	24,936.46	24,960.46	LHCP	17,498.46	17,486.46	17,510.46
14	LHCP	24,963.04	24,951.04	24,975.04	RHCP	17,513.04	17,501.04	17,525.04
15	RHCP	24,977.62	24,965.62	24,989.62	LHCP	17,527.62	17,515.62	17,539.62
16	LHCP	24,992.20	24,980.20	25,004.20	RHCP	17,542.20	17,530.20	17,554.20
17	RHCP	25,006.78	24,994.78	25,018.78	LHCP	17,556.78	17,544.78	17,568.78
18	LHCP	25,021.36	25,009.36	25,033.36	RHCP	17,571.36	17,559.36	17,583.36
19	RHCP	25,035.94	25,023.94	25,047.94	LHCP	17,585.94	17,573.94	17,597.94
20	LHCP	25,050.52	25,038.52	25,062.52	RHCP	17,600.52	17,588.52	17,612.52
21	RHCP	25,065.10	25,053.10	25,077.10	LHCP	17,615.10	17,603.10	17,627.10
22	LHCP	25,079.68	25,067.68	25,091.68	RHCP	17,629.68	17,617.68	17,641.68
23	RHCP	25,094.26	25,082.26	25,106.26	LHCP	17,644.26	17,632.26	17,656.26
24	LHCP	25,108.84	25,096.84	25,120.84	RHCP	17,658.84	17,646.84	17,670.84
25	RHCP	25,123.42	25,111.42	25,135.42	LHCP	17,673.42	17,661.42	17,685.42
26	LHCP	25,138.00	25,126.00	25,150.00	RHCP	17,688.00	17,676.00	17,700.00
27	RHCP	25,162.00	25,150.00	25,174.00	LHCP	17,712.00	17,700.00	17,724.00
28	LHCP	25,176.58	25,164.58	25,188.58	RHCP	17,726.58	17,714.58	17,738.58
29	RHCP	25,191.16	25,179.16	25,203.16	LHCP	17,741.16	17,729.16	17,753.16
30	LHCP	25,205.74	25,193.74	25,217.74	RHCP	17,755.74	17,743.74	17,767.74
31	RHCP	25,220.32	25,208.32	25,232.32	LHCP	17,770.32	17,758.32	17,782.32
32	LHCP	25,234.90	25,222.90	25,246.90	RHCP	17,784.90	17,772.90	17,796.90

Transponders #1 to #26 will operate in the CONUS+ downlink beam and transponders #27 to #32 will operate in the REGIONAL downlink beam.

TT&C operations are proposed in either the 17/12 GHz or 25/17 GHz bands, as discussed in detail in Section A.19. Therefore exact frequency plans for the TT&C transmissions are not yet available.

A.5 SATELLITE TRANSMIT CAPABILITY

Figures A.5-1 to A.5-6 show the relative gain contours for the two types of downlink beam coverage and for the three orbital locations. Note the antenna gain is higher in regions of CONUS

where rain attenuation is greater, such as in the south-east and, to a lesser extent, the north-east. The peak antenna gain is 37.3 dBi for the CONUS+ beam and 34.7 dBi for the Regional beam.

Transponders #1 to #26 will each use the equivalent of a 240 Watt traveling wave tube amplifier (TWTA), providing 23.8 dBW saturated power at the TWTA output.[9] The losses between the TWTA output and the antenna input amount to 2.5 dB. The resulting beam peak saturated EIRP level for these transponders will be 58.6 dBW (i.e., 37.3+23.8-2.5), and the saturated EIRP level at the –8 dB contour will be 50.6 dBW.

Transponders #27 to #32 will each use the equivalent of four power-combined 110 Watt TWTAs, providing approximately 26.2 dBW saturated power at the combined TWTA output. The losses between the TWTA output and the antenna input amount to 2.3 dB. The resulting beam peak saturated EIRP level for these transponders will be 58.6 dBW (i.e., 34.7+26.2-2.3), and the saturated EIRP level at the –8 dB contour will be 50.6 dBW.

The cross-polar isolation of the satellite transmit antennas will exceed 28 dB within the -8 dB gain contour at all transmit frequencies.

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[9] Depending on the satellite manufacturer and the technology developments at the time of satellite construction, the single 240 Watt TWTAs may be replaced by pairs of power-combined 125 Watt TWTAs.

Figure A.5-1 – CONUS+ Downlink Beam Coverage (119°W.L.)

(Contours shown are -2, -4, -6, -8, -10, -15, and -20 dB relative to the beam peak)

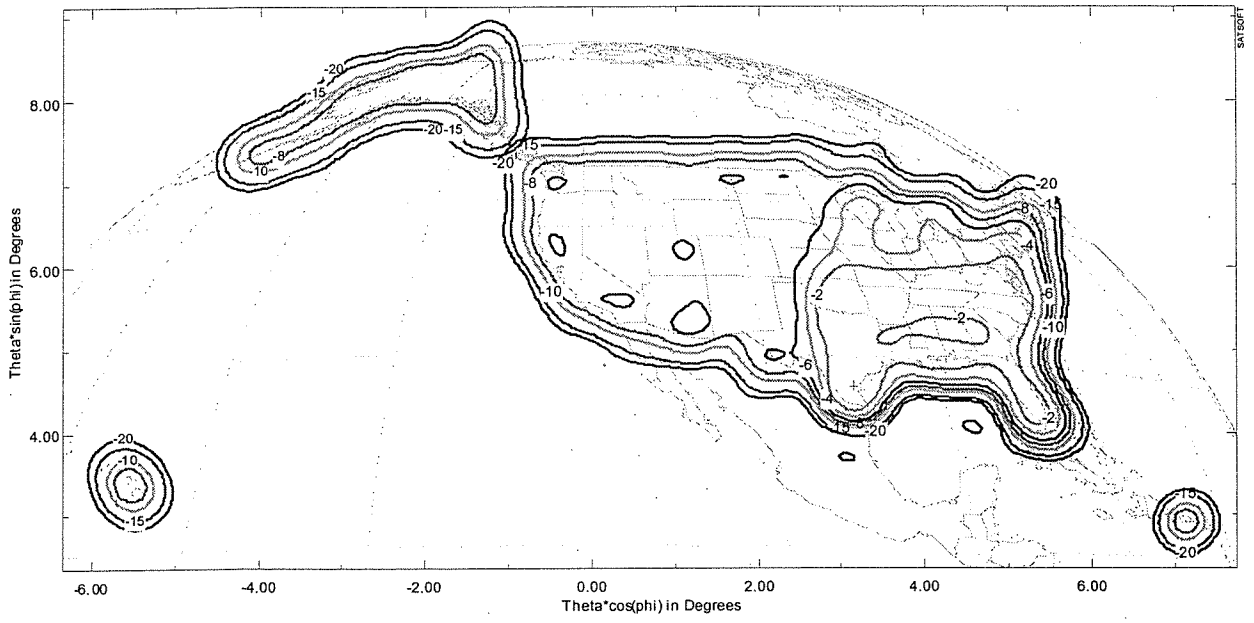


Figure A.5-2 – CONUS+ Downlink Beam Coverage (114.5°W.L.)

(Contours shown are -2, -4, -6, -8, -10, -15, and -20 dB relative to the beam peak)

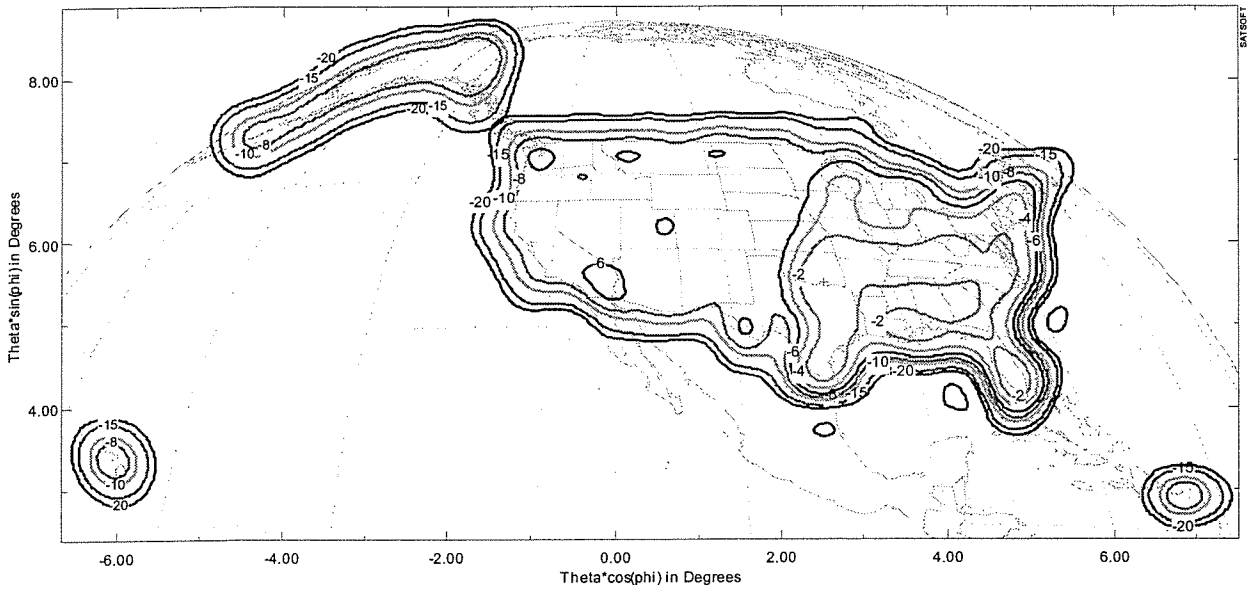


Figure A.5 -3 – CONUS+ Downlink Beam Coverage (110°W.L.)

(Contours shown are -2, -4, -6, -8, -10, -15, and -20 dB relative to the beam peak)

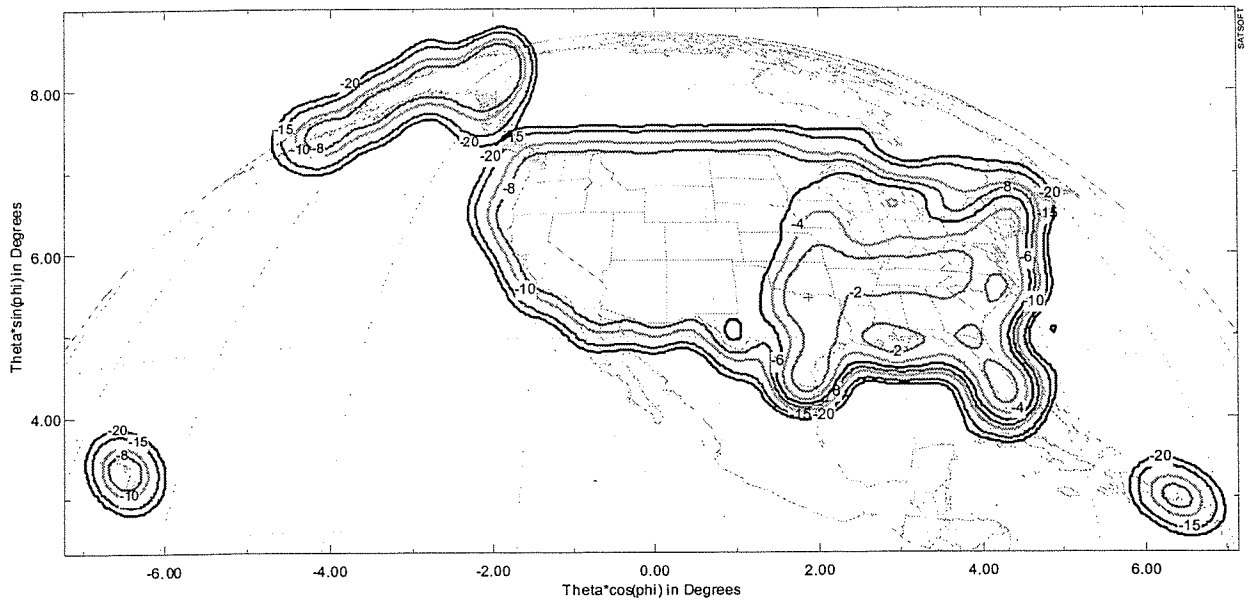


Figure A.5-4 – REGIONAL Downlink Beam Coverage (119°W.L.)

(Contours shown are -2, -4, -6, -8, -10, -15, and -20 dB relative to the beam peak)

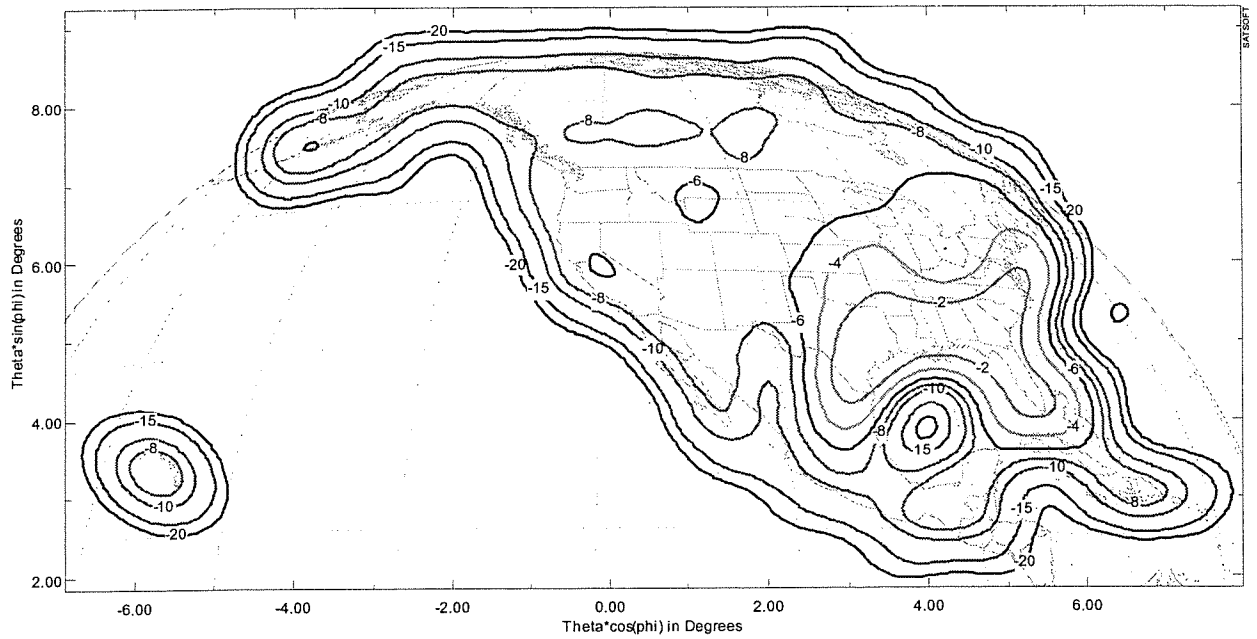


Figure A.5-5 – REGIONAL Downlink Beam Coverage (114.5°W.L.)

(Contours shown are -2, -4, -6, -8, -10, -15, and -20 dB relative to the beam peak)

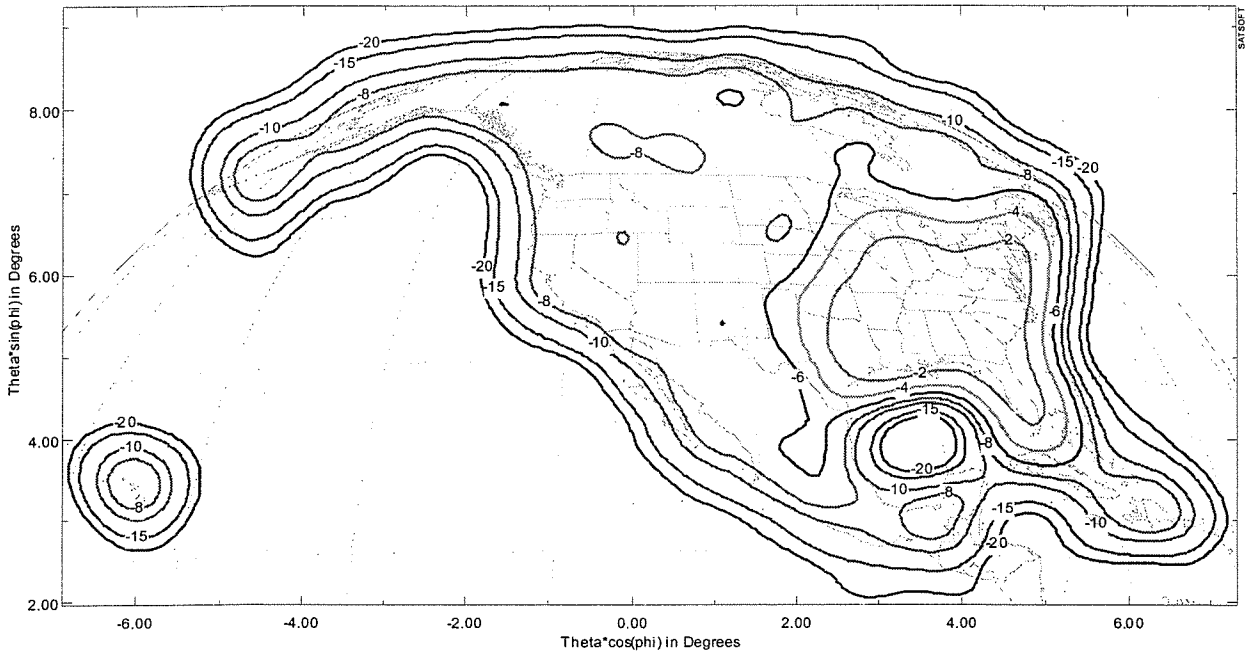
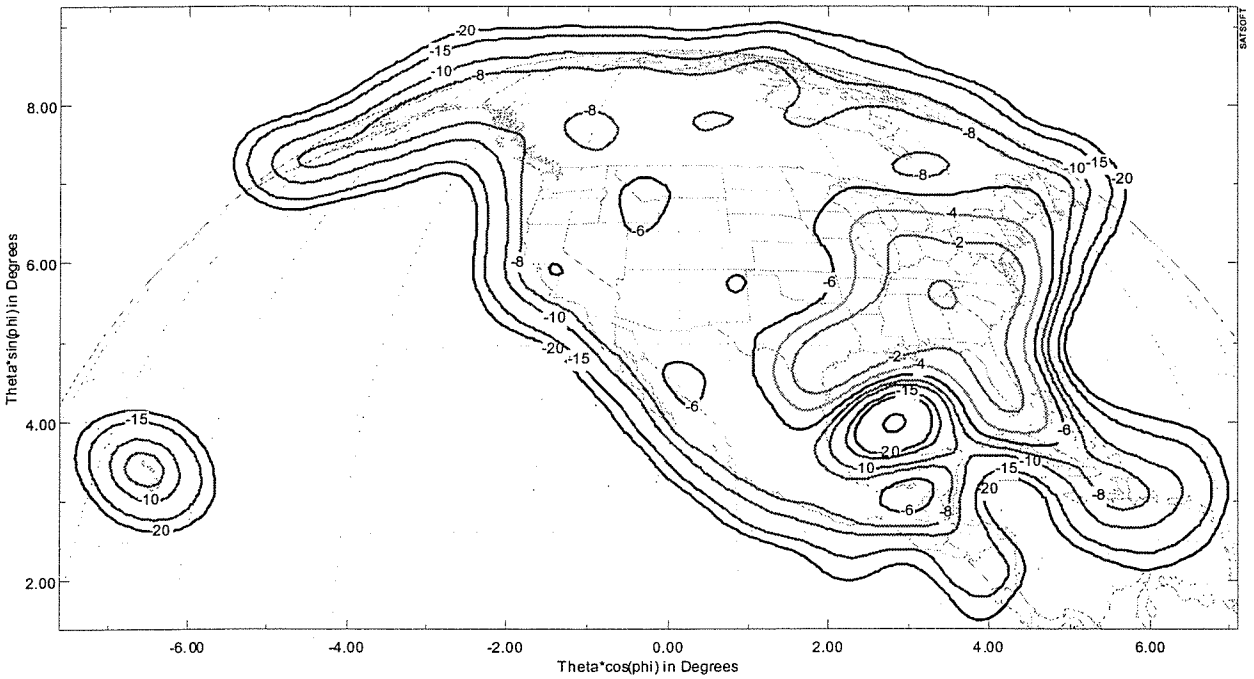


Figure A.5-6 – REGIONAL Downlink Beam Coverage (110°W.L.)

(Contours shown are -2, -4, -6, -8, -10, -15, and -20 dB relative to the beam peak)



A.6 SATELLITE RECEIVE CAPABILITY

The satellite receive beams used for the feeder uplink are shown in Figures A.6-1, A.6-2 and A.6-3 for the three orbital locations. These beams are used to provide service to the two feeder link earth station facilities located at Cheyenne, Wyoming and Gilbert, Arizona. The peak antenna gain is 40.1 dBi. The satellite receive system noise temperature is 600 K (equivalent to 27.8 dB-K). Therefore the beam peak G/T performance is +12.3 dB/K (i.e., 40.1-27.8), and the performance towards the feeder link earth station locations (Cheyenne and Gilbert), which are on the –2 dB relative gain contour, is +10.3 dB/K.

The cross-polar isolation of the satellite receive antenna used for the feeder uplinks to the conventional broadcast transponders exceeds 30 dB within the -6 dB gain contour at all receive frequencies.

Figure A.6-1 – Feeder Uplink Beam Coverage (119°W.L.)

(Contours shown are -2, -4, -6, -8, -10, -15, and -20 dB relative to the beam peak)

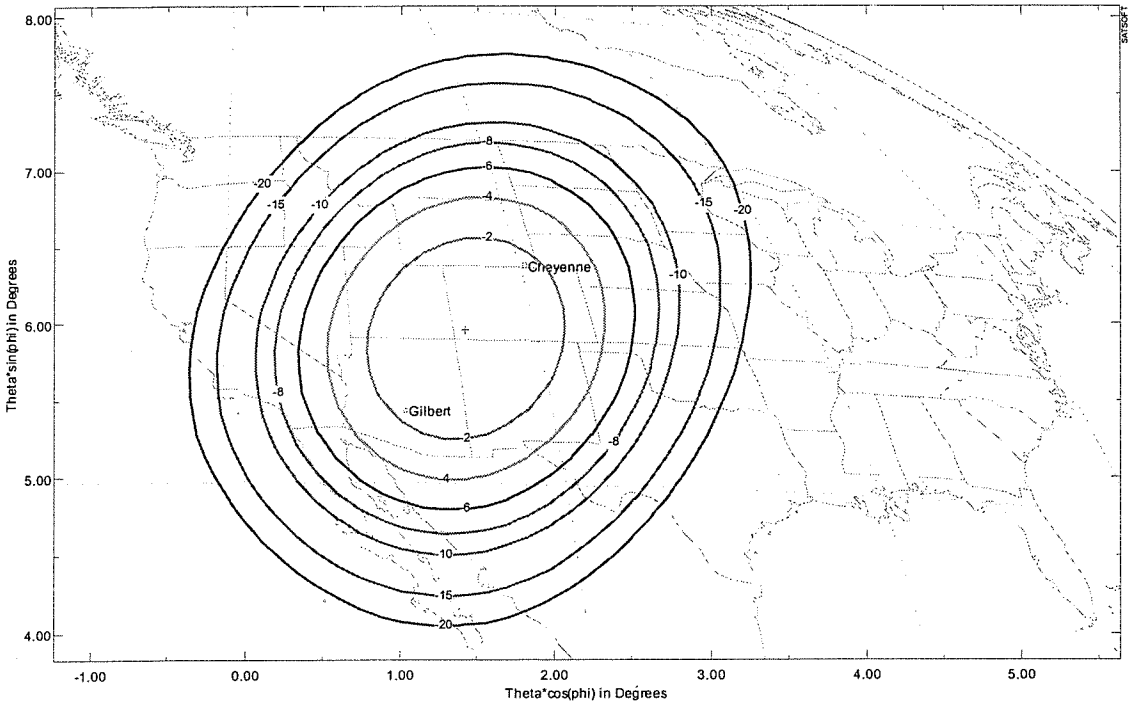


Figure A.6-2 – Feeder Uplink Beam Coverage (114.5°W.L.)

(Contours shown are -2, -4, -6, -8, -10, -15, and -20 dB relative to the beam peak)

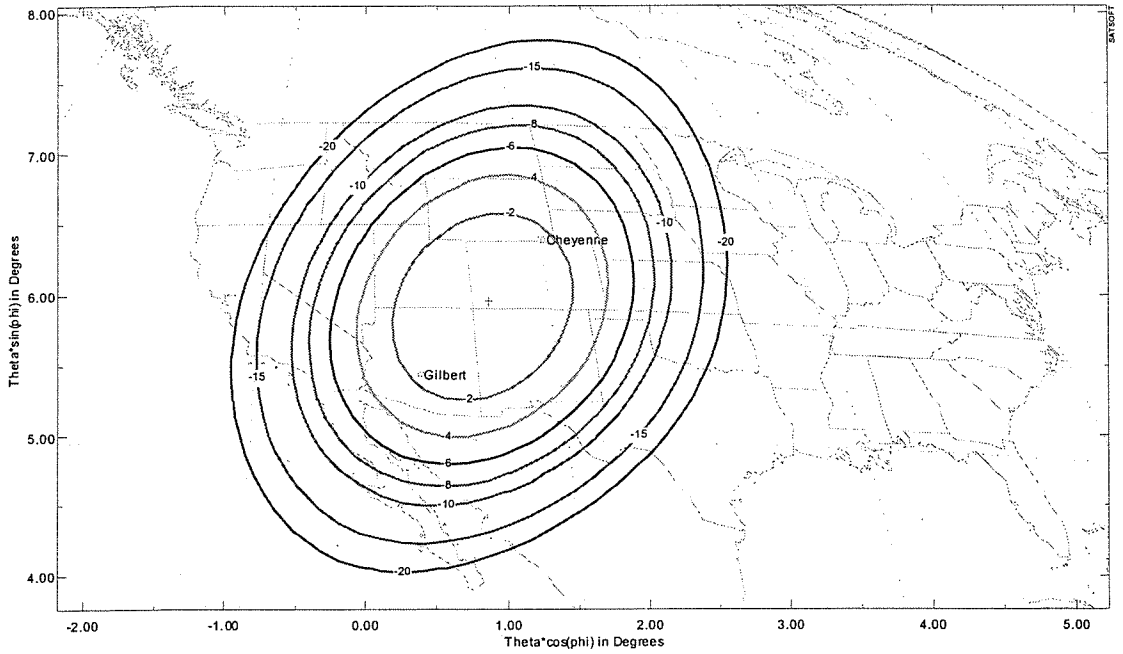
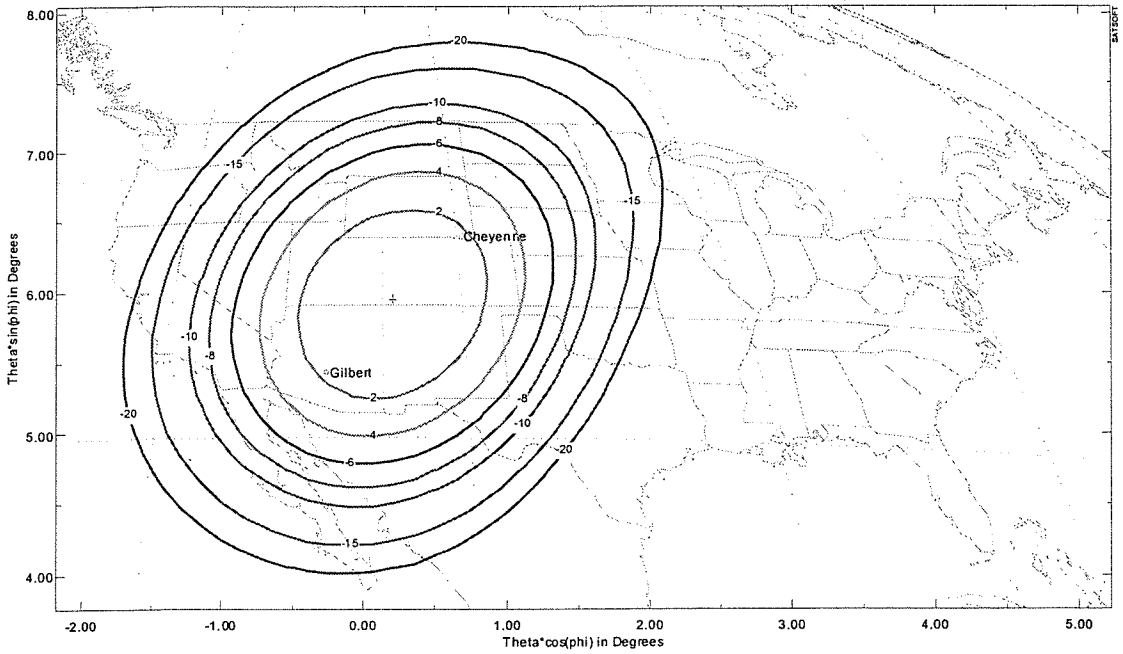


Figure A.6-3 – Feeder Uplink Beam Coverage (110°W.L.)

(Contours shown are -2, -4, -6, -8, -10, -15, and -20 dB relative to the beam peak)



A.7 TRANSMISSION SCHEMES

All communications transponders in the EchoStar DBS Expansion Band satellites are of the bent-pipe type, so the same transmission scheme will be used on both uplink and downlink to the same transponder. Digital modulation will be used throughout.

A.8 TRANSPONDER GAIN CONTROL AND SATURATION FLUX DENSITY

Automatic Level Control ("ALC") will be used in order to maintain the transponders operating at or very close to TWTA saturation. Typical actual values of Saturation Flux Density ("SFD") in this mode of operation can be seen by referring to the link budget in Section A.13, where a value of -86.4 dBW/m^2 is shown for the case of the Cheyenne uplink earth station (-2 dB receive gain contour). To maintain correct operation over the range of foreseen conditions the ALC will have a dynamic range of 20 dB.[10]

A.9 SATELLITE TRANSPONDER FILTER RESPONSE

The specification for the overall transponder in-band filter response and out-of-band attenuation will be similar to that used on existing Ku-band DBS satellites. The performance in these respects is dictated by the following considerations:

1. The in-band gain and group delay response must be flat enough so as not to significantly degrade the bit error rate performance of the digital carriers in the transponder;

2. The out-of-band attenuation must be high enough, in the adjacent transponder frequency band, to adequately suppress the multi-path transmission through adjacent transponders.

3. The out-of-band attenuation must also be sufficient to suppress any unwanted signals in frequency bands adjacent to the transponder frequency band, which could otherwise

---

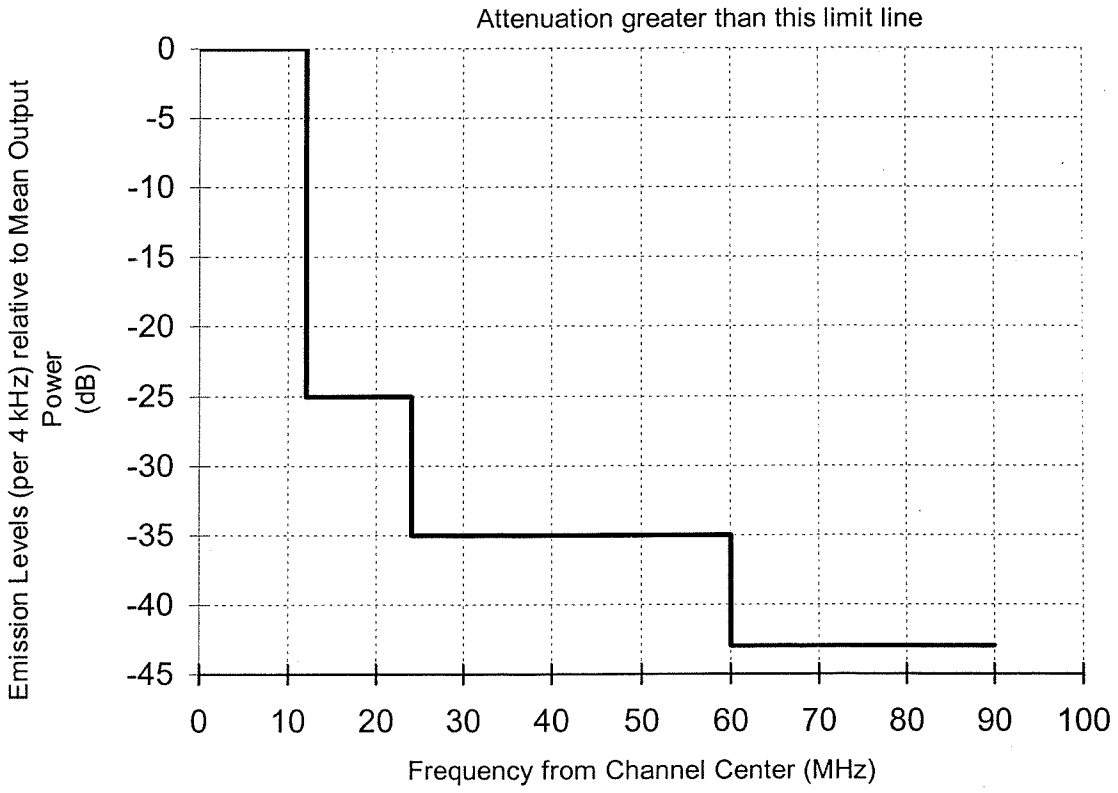
[10] Exact value of dynamic range available will depend on the satellite manufacturer.

cause overload of the active amplifiers in the communications payload, or waste the available power of the TWTAs.

A.10 UNWANTED EMISSIONS

The out-of-band emissions will not exceed the mask given in Figure A.10-1 below.

Figure A.10-1 – Unwanted Emission Mask



A.11 EMISSION DESIGNATORS AND ALLOCATED BANDWIDTH OF EMISSION

The emission designator is 24M0G7W. This has an allocated bandwidth of 24 MHz, consistent with Ku-band DBS transmissions.

For TT&C the emission designators will be as follows:

Telecommand (including ranging):	1M00F2D
Telemetry (including ranging):	1M00F2D

A.12 EARTH STATIONS

The primary subscriber earth station to be used in the EchoStar DBS Expansion Band System nominally will be a 45 cm antenna. Such terminals are expected to be deployed in vast numbers across the service areas (several millions). In some areas and for certain applications, where higher availability is required to combat the increased rain fade, larger antennas will be used (typically 65 cm, 90 cm or larger).

The feeder uplink earth stations (main and back-up) will use an 11 meter or larger antenna.

A.13 LINK BUDGETS

Table A.13-1 provides a set of representative link budgets for the broadcast link from the feeder link earth stations to the subscriber receive earth stations. Both clear sky and rain faded link budgets are shown – the latter for both New York (rain region K) and Los Angeles (rain region E). Availability in excess of 99.7% is achieved.

Table A.13-1 – Representative Link Budget

EchoStar Expansion DBS Link Budget (Broadcast Link)				
Link Parameters		**Clear Sky (New York)**	**Faded D/L (New York)**	**Faded D/L (Los Angeles)**
Link Geometry:				
Tx E/S Range to Satellite (Cheyenne)	(km)	37,761	37,761	37,761
Rx E/S Range to Satellite	(km)	39,127	39,127	37,074
Uplink (per carrier):				
Carrier Frequency	(MHz)	25,000	25,000	25,000
Tx E/S Antenna Diameter	(m)	11.0	11.0	11.0
Tx E/S Power to Antenna	(W)	10	10	10
Tx E/S Antenna Gain	(dB)	66.6	66.6	66.6
Tx E/S EIRP per Carrier	(dBW)	76.6	76.6	76.6
Atmospheric and Other Losses	(dB)	0.5	0.5	0.5
Satellite:				
Total PFD at Satellite	(dBW/m^2)	-86.4	-86.4	-86.4
Sat'n PFD towards Tx E/S (ALC mode)	(dBW/m^2)	-86.4	-86.4	-86.4
G/T towards Tx E/S	(dB/K)	10.3	10.3	10.3
Sat'd EIRP towards Rx E/S	(dBW)	55.5	55.5	50.6
EIRP per Carrier towards Rx E/S	(dBW)	55.5	55.5	50.6
Downlink (per carrier):				
Carrier Frequency	(MHz)	17,500	17,500	17,500
Atmospheric and Other Losses	(dB)	0.2	4.5	1.7
Rx E/S Antenna Diameter	(m)	0.45	0.45	0.45
Rx E/S Antenna Gain	(dB)	36.1	36.1	36.1
Rx E/S G/T	(dB/K)	13.1	10.3	11.5
System (LNA+Sky) Noise Temp.	(K)	200	381	291
Total Link:				
Carrier Noise Bandwidth	(kHz)	24,000	24,000	24,000
(C/N) - Thermal Uplink	(dB)	29.2	29.2	29.2
(C/N) - Thermal Downlink	(dB)	14.0	6.9	6.5
(C/I) - Other Link Degradations	(dB)	25.0	25.0	25.0
(C/N) - Total Actual	(dB)	13.6	6.9	6.4
(C/N) - Total Required	(dB)	6.0	6.0	6.0
Excess Margin	(dB)	7.6	0.9	0.4

A.14 STATION-KEEPING AND ANTENNA POINTING ACCURACY

The satellite orbital inclination and longitudinal drift will be maintained within ±0.05° of nominal. The antenna axis attitude will be maintained within ±0.12° of nominal during normal mode and ±0.15° of nominal during orbit maneuvers (i.e., station-keeping).

A.15 POWER FLUX DENSITY AT THE EARTH'S SURFACE

There are no Power Flux Density (PFD) limits in the 17.3-17.7 GHz band, pending a future rulemaking by the Commission.[11] PFD limits, given in §25.208(c), do apply in the 17.7-17.8 GHz band. Compliance with these limits is demonstrated below using a simple worst-case methodology.

The maximum saturated EIRP per transponder is 58.6 dBW. The shortest distance from the satellite to the Earth is 35,786 km, corresponding to a spreading loss of 162.06 dB. Therefore the maximum possible PFD at the Earth's surface could not exceed –103.46 dBW/m^2 in the 24 MHz transponder bandwidth (i.e., 58.6–162.06). Allowing for the use of digital modulation with an almost flat spectrum, the corresponding maximum PFD at the Earth's surface measured in a 1 MHz band would not exceed –117.26 dBW/m^2. This is less than the PFD limit value (which is –115 dBW/m^2) that applies at the low elevation angles (5° and below). Therefore compliance with this PFD limit is assured. In fact the margin relative to the PFD limit is actually much greater than this because, over much of the beam coverage the elevation angle is actually higher than 25°, at which the PFD limit is 10 dB higher (-105 dBW/m^2).

For information, note that the maximum PFD in the 17.3-17.7 GHz band when derived using the same worst-case methodology as described above for the 17.7-17.8 GHz band, is actually the same as in the 17.7-17.8 GHz band, because the peak EIRP is the same.

A.16 FREQUENCY TOLERANCE

The satellite local oscillator frequency stability will determine the accuracy of the frequency conversion between uplink and downlink transmissions. This frequency conversion error will not exceed ±5 in 10^6 under all circumstances.

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[11] See paragraph 101 of FCC Report and Order entitled "Redesignation of the 17.7-19.7 GHz Frequency Band, Blanket Licensing of Satellite Earth Stations in the 17.7-20.2 GHz and 27.5-30.0 GHz Frequency Bands, and the Allocation of Additional Spectrum in the 17.3-17.8 GHz and 24.75-25.25 GHz Frequency Bands for Broadcast Satellite-Service Use", IB Docket No. 98-172, June 8, 2000.

A.17 CESSATION OF EMISSIONS

Each satellite transponder can be individually turned on and off by ground telecommand, thereby causing cessation of emissions from the satellite, as required.

A.18 LAUNCH VEHICLES

The spacecraft are compatible with several commercially available launch vehicles. A decision on the actual launcher to be used has not yet been made.

A.19 TT&C

The final selection of TT&C frequencies is partly dependent on the choice of spacecraft supplier, based on their preferred on-board TT&C equipment. It also depends on the availability of a global TT&C earth station network to support the Launch and Early Operations Phase ("LEOP") of the satellite mission. Therefore EchoStar proposes several options for its TT&C frequencies for the EchoStar DBS Expansion Band satellites, as follows:

1. Telecommand at one end of the 17.3-17.8 GHz DBS feeder link band and telemetry at one end of the 12.2-12.7 GHz Ku-DBS downlink band. This would be similar to that used on some of EchoStar's existing Ku-band DBS satellites. This could be used both during the LEOP and on-station.

2. Same as option 1 above for the LEOP but then switch to in-band TT&C when the satellite is on-station. The in-band TT&C signals would be at either end of the 24.75-25.25 GHz band (telecommand) and 17.3-17.8 GHz band (telemetry). The drawback to using in-band TT&C in this way is the potential interference from the EchoStar uplink earth station (transmitting in the 17.3-17.8 GHz band) to the EchoStar TT&C receiving earth station.

EchoStar proposes to define the precise TT&C frequencies shortly after it selects the satellite manufacturer for the EchoStar DBS Expansion Band satellites. This will also take into account the

coordination required with the neighboring satellites. At that time EchoStar will inform the Commission of its selected TT&C frequencies and request the necessary authorization.

Regardless of the exact TT&C frequencies used, the satellites will be configured to operate their TT&C functions through omni-directional spacecraft antennas during the LEOP, as well as in the event of a spacecraft emergency where attitude control might be disturbed. When operating correctly on-station the TT&C function will be switched to a high gain satellite antenna to permit lower power TT&C transmissions on both uplink and downlink.

Once the satellites are on-station EchoStar will use its existing Spacecraft Operations Center and TT&C earth station facilities to control the satellites.

A.20 SPACECRAFT CHARACTERISTICS

The spacecraft manufacturer for the EchoStar DBS Expansion Band satellites has not yet been selected, and EchoStar does not wish to show preference by providing any data specific to any one manufacturer in this application. The design of the satellite has been based around the expected characteristics of the 3-axis stabilized spacecraft available from the three major U.S. suppliers (Boeing, Lockheed Martin and Loral) in the time frame necessary for these satellites.

The communications payload of the EchoStar DBS Expansion Band satellites requires approximately 17 kW d.c. power. The communications payload mass (including antenna) will be approximately 390 kg. The total spacecraft mass is in the range 4,600 to 4,900 kg at launch. The satellite operational lifetime will be between 12 and 15 years. By the time these satellites are to be constructed the payload capability of commercial communications spacecraft is expected to be in this range.

EchoStar will provide the Commission with full and precise spacecraft physical characteristics when the final supplier and product has been selected.

A.21 COMMUNICATIONS PAYLOAD

The communications payload will be conventional in architecture and very similar to EchoStar's existing Ku-band DBS satellites. The main difference will be the frequency ranges over which the payload equipment has to operate.

The uplink signals in both polarizations will be received by a single satellite antenna (see Figures A.6-1 to A.6-3 for the beam characteristics), and limited filtering applied before amplification in the 25 GHz LNAs (Low Noise Amplifier) and further amplification and down-conversion (to the 17 GHz downlink frequencies) in the receivers. The outputs of the receivers (one active receiver for each polarization) will be channelized by the IMUX (Input Multiplexer) before further amplification and ALC/gain control in the CAMPs (Channel Amplifiers) and then the TWTAs (Traveling Wave Tube Amplifiers). The individual RF channels in the same polarization are then combined in the OMUXs (Output Multiplexers) and fed to the appropriate satellite transmit antennas (for CONUS+ or REGIONAL coverage). Appropriate redundancy switching is provided for all active payload equipment.

A.22 INTERFERENCE ANALYSIS (ADJACENT SATELLITES)

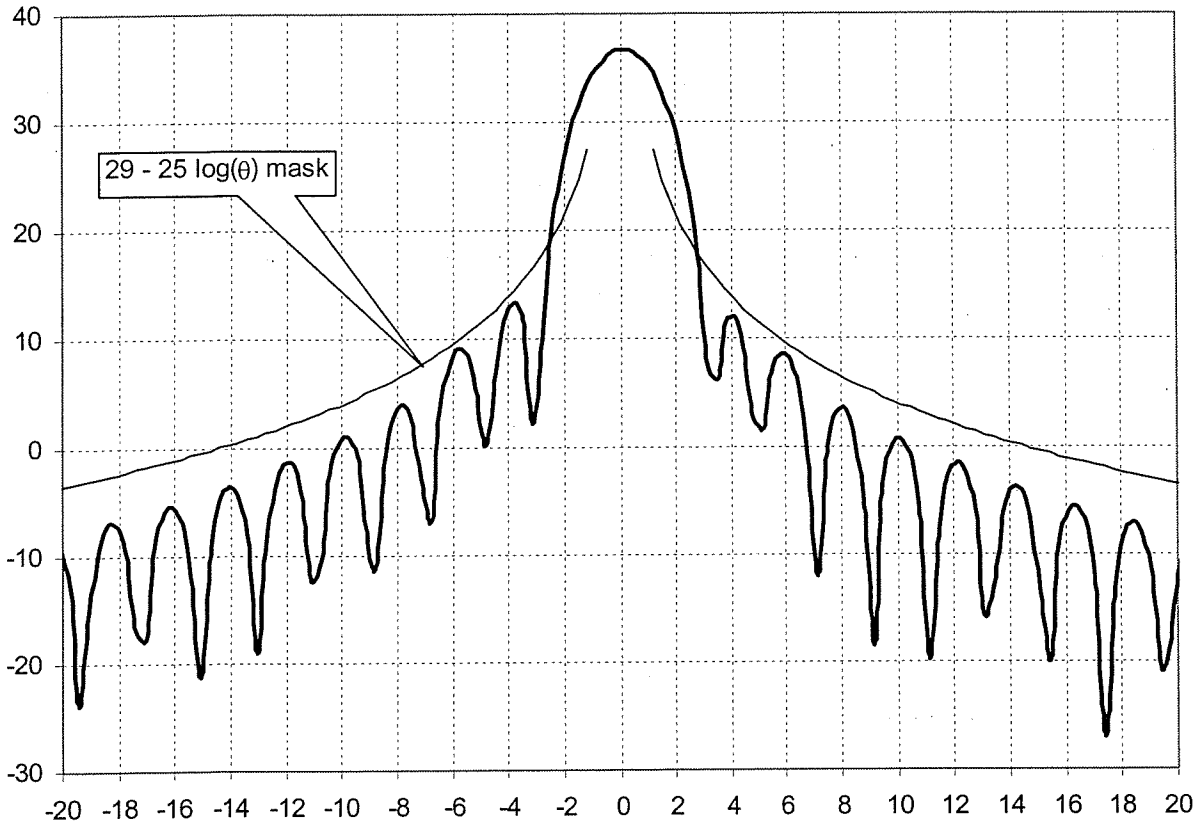
Downlink Interference to 45 cm Earth Stations

In Section A.2 above the selection of orbital locations was explained in terms of the minimum orbital spacing necessary to permit co-frequency, co-coverage operation with nominal 45 cm subscriber earth stations. In this section this assumption will be demonstrated in terms of the resulting adjacent satellite interference levels under these conditions with fully loaded satellites on either side in the geostationary orbit.

Figure A.22-1 shows the gain performance of a typical 45 cm earth station at the downlink frequency of 17.5 GHz (i.e., mid-band). Also shown is the traditional $29-25\log(\theta)$ off-axis gain mask. Note that the main lobe of the antenna extends well beyond 2°, as expected. However, at

4.5° off-axis the antenna conforms to the 29-25log(θ) mask, even allowing for some antenna misalignment error.

Figure A.22-1 – 45 cm Earth Station Gain vs Off-Axis Angle (at 17.5 GHz)



The downlink interference due to adjacent satellites can be calculated by comparing the gain of the 45 cm receiving antenna at 4.5° off-axis (which is 29-25log(4.5) = 12.7 dBi) with the peak gain of the antenna (36.1 dBi), as given in the link budget in Section A.13 above.[12] The difference between these two is 23.4 dBi, and this can be related to the C/I (carrier-to-interference ratio) in the situation where the adjacent satellite EIRP is identical to that of the wanted satellite. In practice it would be

[12] The use of the geocentric separation angle (4.5°) is an approximation. In practice the topocentric separation angle should be used which is approximately 4.9°, depending on the relative location on the Earth compared to the sub-satellite longitude. The use of 4.9° would result in lower interference being calculated. However, the

reasonable to assume that the adjacent satellite might be typically 2 dB higher in EIRP in some situations, and this assumption would lead to a C/I value of 21.4 dB. If two such interfering adjacent satellites are assumed, one either side of the wanted satellite, then the resulting aggregate C/I would be reduced by a further 3 dB, giving a C/I of 18.4 dB. This corresponds to 12.4 dB higher than the C/N objective of 6 dB given in the link budget in Section A.13 above. Note that the 2nd adjacent satellites, spaced 9° away in the geostationary orbit, will further degrade the aggregate C/I by approximately 0.7 dB. Nevertheless, the result is very close to the ITU's single-entry C/I criteria (which is C/N+12.2 dB), and so is considered to be acceptable for this scenario of earth station size and orbital spacing.

Uplink Interference from 11 meter Feeder Link Earth Station

An 11 meter transmitting feeder link earth station will have a peak gain of approximately 66.6 dBi at 25 GHz (see link budget in Section A.13 above) and will comply with the off-axis gain mask of 29-25log(θ). Therefore, there will clearly be ample interference margin for operation in a 4.5° orbital spacing environment.

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earth station misalignment would have the effect of increasing the interference somewhat and so tend to cancel out the topocentric advantage.

A.23 SHARING ANALYSIS WITH OTHER SERVICES AND ALLOCATIONS

17.3-17.7 GHz Band:

The recently allocated 17.3-17.7 GHz BSS downlink band is shared with the long-standing DBS feeder link allocation (17.3-17.8 GHz) which is used for uplink signals to Ku-band DBS satellites. This creates two potential interference paths, as follows:

1. Interference from the transmitting DBS feeder link earth stations to the DBS subscriber receive earth stations. This will result in a limited geographic area around each DBS feeder link earth station where interference to subscriber earth stations could occur. Due to the fact that there are only a very small number of DBS feeder link stations, and the fact that these are generally situated in remote areas, this is not considered to be a sharing problem.

2. Interference from the transmitting satellite to the receiving satellite. There are two considerations in this regard, as follows:

   - The first relates to coordination with respect to BSS satellites operated by other countries. The ITU Radio Regulations provides threshold values for determining when coordination is required between transmitting space stations in the broadcasting-satellite service and a receiving space station in the feeder-link Plans in the frequency bands 17.3-18.1 GHz (Regions 1 and 3) and 17.3-17.8 GHz (Region 2).[13] Coordination is required when the power flux-density arriving at the receiving space station of a broadcasting-satellite feeder link of another administration would cause an increase in the noise temperature of the feeder-link space station greater than 4%. From an interference perspective there are two geometric cases that are of concern - the equatorial limb case and the adjacent satellite case. This issue has been studied in Working Party 6S of the ITU-R. The

USA input document on this issue concluded that, for the adjacent satellite case, very close spacing of less than 0.2 degrees is feasible. It also concluded that the equatorial limb case is not a concern when the transmitting and receiving satellite antenna patterns are not centered near the limb of the Earth. Additionally the study demonstrated that the case where the transmitting and receiving satellite antenna patterns are near the limb of the earth is extremely unlikely taking into account the Regions 1 and 3 and Region 2 BSS feeder link Plans.

- The second case to consider is interference to Ku-band DBS satellites that are nominally collocated. In this case it will be necessary to maintain some minimal physical separation and specific orientation between the transmitting and receiving satellites, and this will be greatly facilitated by having both satellites under the control of the same satellite operator. Taking into account the highly directional nature of the satellite antennas (both transmitting and receiving), as well as the screening that can be provided using the body of the spacecraft, adequate isolation can be achieved.

17.7-17.8 GHz Band:

In addition to the sharing considerations described above (for the 17.3-17.7 GHz band) the additional consideration in this part of the band concerns the potential interference between terrestrial fixed services ("FS") and the BSS downlink. The Commission has noted in its Report and Order relating to the 17 GHz BSS allocation that the interference concern only relates to the potential interference from the FS transmitters into the BSS receive earth stations.[14] EchoStar is hopeful that the Commission will eventually conform the domestic table of frequency allocations to the ITU tables, and extend the BSS allocation to cover the full 500 MHz range from 17.3-17.8 GHz. In this event it can be assumed that the domestic FS usage in the 17.7-17.8 GHz band will cease and so protection of the BSS receivers will eventually be guaranteed. In the event that the

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[13] See Section 1 of Annex 4 of Appendix S30A of the Radio Regulations.

[14] The existing PFD limits in the 17.7-19.7 GHz band given in §25.208(c) provide adequate protection of the FS receivers from the BSS satellite downlink transmissions.

Commission does not extend the BSS allocation in this way, or during the interim until such an allocation exists, EchoStar's services in the 17.7-17.8 GHz band will be limited to the areas outside of the United States (Mexico, Canada and the Caribbean).

24.75-25.25 GHz Band:

The Commission rightly recognized in its Report and Order relating to the 17 GHz BSS allocation that sharing between the BSS feeder links and the 24 GHz terrestrial service, in the 25.05-25.25 GHz band, is feasible based on traditional coordination techniques. BSS operators have already established sites that can be used for transmitting feeder link earth stations, and the 24 GHz service will need to avoid operation of its hub stations in the immediate vicinity in order to avoid interference.

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By Hand Delivery and Electronic Mail

March 28, 2002

Mr. Rockie Patterson
Federal Communications Commission
International Bureau
445 Twelfth Street, S.W.
Washington, DC 20554

Dear Mr. Patterson:

This letter is submitted on behalf of EchoStar Satellite Corporation ("EchoStar") in connection with EchoStar's proposed expansion Broadcasting-Satellite Service ("BSS") satellite networks at the 110°, 114.5° and 119° W.L. orbital locations. EchoStar is aware that as a result of the actions taken at the 1998 Plenipotentiary Conference, processing fees will now be charged by the International Telecommunication Union ("ITU") for satellite network filings. As a consequence, the Commission applicants are responsible for any and all fees charged by the ITU. EchoStar hereby states that it is aware of and unconditionally accepts this requirement and its responsibility to pay any ITU cost recovery fees associated with the aforementioned ITU filing at the appropriate time.

Sincerely,

Pantelis Michalopoulos
Counsel for EchoStar Satellite Corporation

UNION INTERNATIONALE DES TELECOMMUNICATIONS
BUREAU DES RADIOCOMMUNICATIONS

INTERNATIONAL TELECOMMUNICATION UNION
RADIOCOMMUNICATION BUREAU

UNIÓN INTERNACIONAL DE TELECOMUNICACIONES
OFICINA DE RADIOCOMUNICACIONES

IFIC / DATE **IFIC / DATE** **IFIC / FECHA**	**SECTION SPECIALE N°** **SPECIAL SECTION No.** **SECCIÓN ESPECIAL N.°** **API/A/**
RESEAU(X) A SATELLITE **SATELLITE NETWORK(S)** **RED(ES) DE SATÉLITE** **USABSN-9**	**ADMINISTRATION RESPONSABLE** **RESPONSIBLE ADMINISTRATION** **ADMINISTRACIÓN RESPONSABLE** **USA**

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INFORMATION RECEIVED BY THE BUREAU ON
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(voir les commentaires du Bureau des radiocommunications)

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(see comments of the Radiocommunication Bureau)

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	Les renseignements ont été reçus conformément au No. S9.2	The information has been received pursuant to No. S9.2	La información ha sido recibida de conformidad con No. S9.2
	Toute administration estimant que ses réseaux à satellite, ses systèmes à satellites ou ses stations de terre, selon le cas, existants ou en projet, sont affectés, peut envoyer ses observations à l'administration qui a demandé la publication des renseignements, avec copie au Bureau des radiocommunications.	Any administration which considers that its existing or planned satellite systems or networks or terrestrial stations, as appropriate, are affected, may send its comments to the administration which has requested publication of the information, with a copy of such comments to the Radiocommunication Bureau.	Cualquier administración que considere que sus sistemas o redes des satélites o estaciones terrenales, según el caso, existentes o planificados se verán afectados, podrá comunicar sus comentarios a la administración que haya solicitado la publicación de la información, enviando una copia de dichos comentarios a la Oficina de Radiocommunicaciones.

Information aussi disponible sur le / Information also available on the / Información también disponible en: **Space Network Systems Online Service :** **http://www-br/sns/advpub.html**

Items	Description	Description	Descripción
A1a	Name of the space station	Nom de la station spatiale	Nombre de la estación espacial
A1f	Notifying administration	Administration notificatrice	Administración notificante
A2a	Date of bringing into use	Date de mise en service	Fecha de puesta en servicio
A2b	Period of validity (year)	Période de validité (année)	Periodo de validez (año)
A4a1	Nominal longitude of a geostationary space station (degree)	Longitude nominale d'une station spatiale géostationnaire (degré)	Longitud nominal de una estación espacial geoestacionaria (grado)
A4b1	Angle of inclination of the orbit (degree)	Inclinaison de l'orbite (degré)	Ángulo de inclinación de la órbita (grado)
A4b2	Period (ddd/hh/mm)	Période (jjj/hh/mm)	Periodo (ddd/hh/mm)
A4b3a	Altitude of the apogee (km)	Altitude de l'apogée (km)	Altitud del apogeo (km)
A4b3b	Altitude of the perigee (km)	Altitude du périgée (km)	Altitud del perigeo (km)
A4b4a	Number of satellites	Nombre de satellites	Número de satélites
A4b4b	Reference body	Corps de référence	Cuerpo de referencia
A4b5a	Number of orbital planes	Nombre de plans orbitaux	Número de planos orbitales
C1	Frequency Range	Gamme de fréquences	Gama de frecuencias
C4a	Class of station	Classe de station	Clase de estación
C4b	Nature of service	Nature du service	Naturaleza del servicio
C11a4	Narrative description of the service area	Description détaillée de la zone de service	Descripción detallada de la zona de servicio
BR1	Date of receipt	Date de réception	Fecha de recepción
BR3a	Provision reference code	Code de référence de la disposition	Código de referencia de la disposición
BR6a	Identification number of the network	Numéro d'identification du réseau à satellite	Número de identificación de la red
BR6b	Old identification number of the network	Ancien numéro d'identification du réseau à satellite	Número anterior de la identificación de la red
BR20	IFIC number	Numéro de la IFIC	Número de la IFIC
BR22	Administration remarks	Remarques de l'Administration	Observaciones de la Administración
BR23	Radiocommunication Bureau comments	Observations du Bureau des radiocommunications	Comentarios de la Oficina de Radiocomunicaciones

SECTION SPECIALE / SPECIAL SECTION / SECCION ESPECIAL

API/A/

A | *A1a* Space station: USABSN-9 | *A1f* Notifying adm.: USA | *BR1* Date of receipt: 01.04.2002 | *BR20* IFIC no.:

BR6a/BR6b Id. no.: 6 | *BR3a* Provision reference: S9.1/IB

A4a1 Orbital long.: 110 W

A2a Date of bringing into use: 01.04.2007 *A2b* Period of valid.: 25

C1 Frequency range: From 17.3 GHz To 17.8 GHz

C4a Class of station	EV	ER	EK
C4b Nature of service	CR	OT	OT

C11a4 Service area: RG2

A2a Date of bringing into use: 01.04.2007 *A2b* Period of valid.: 25

C1 Frequency range: From 24.75 GHz To 25.25 GHz

C4a Class of station	EC	ED
C4b Nature of service	CV	OT

C11a4 Service area: RG2

BR22 Administration remarks:

BR23 Radiocommunication Bureau comments:

COMMENTAIRES DU BUREAU DES RADIOCOMMUNICATIONS CONCERNANT LE NUMEROTAGE DE LA SECTION SPECIALE

1. La date limite pour la réception des commentaires indiquée sur la page de couverture s'applique uniquement aux bandes de fréquences additionnelles suivantes:

2. La présente Section spéciale est aussi publiée conformément au paragraphe 7.1.3 de l'Appendice 30/S30 pour les gammes de fréquences suivantes:

3. Sections spéciales déjà publiées/ IFIC/ date:

COMMENTS OF RADIOCOMMUNICATION BUREAU RELATING TO THE SPECIAL SECTION NUMBERING

1. Expiry date for the receipt of comments indicated on the cover page applies only to the following additional frequency bands:

—

2. This Special Section is also published in accordance with paragraph 7.1.3 of Appendix 30/S30 with respect to the following frequency bands:

—

3. Previously published Special Sections/ IFIC/Date:

—

COMENTARIOS DE LA OFICINA DE RADIOCOMUNICACIONES RELATIVOS A LA NUMERACION DE LA SECCION ESPECIAL

1. La fecha límite para la recepción de los comentarios indicada en la portada de la Sección Especial sólo se aplica a las siguientes bandas de frecuencias adicionales:

2. La presente Sección Especial se publica también en virtud del párrafo 7.1.3 del apéndice 30/S30 para las siguientes gamas de frecuencias:

3. Secciones Especiales ya publicadas/ IFIC/ fecha:

UNION INTERNATIONALE DES TELECOMMUNICATIONS
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IFIC / DATE IFIC / DATE IFIC / FECHA	SECTION SPECIALE N° SPECIAL SECTION No. SECCIÓN ESPECIAL N.° **API/A/**
RESEAU(X) A SATELLITE SATELLITE NETWORK(S) RED(ES) DE SATÉLITE **USABSN-10**	ADMINISTRATION RESPONSABLE RESPONSIBLE ADMINISTRATION ADMINISTRACIÓN RESPONSABLE **USA**

RENSEIGNEMENTS REÇUS PAR LE BUREAU LE
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Ces renseignements concernant les réseaux à satellite régis par l'article S9, sous-section 1B, sont publiés par le Bureau des radiocommunications en application du No. S9.2B. Ils font l'objet de la(les) procédure(s) suivante(s), indiquée(s) ci-dessous par un X dans la case pertinente.
(voir les commentaires du Bureau des radiocommunications)

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X	Les renseignements ont été reçus conformément au No. S9.1	The information has been received pursuant to No. S9.1	La información ha sido recibida de conformidad con No. S9.1
	Les renseignements ont été reçus conformément au No. S9.2	The information has been received pursuant to No. S9.2	La información ha sido recibida de conformidad con No. S9.2
	Toute administration estimant que ses réseaux à satellite, ses systèmes à satellites ou ses stations de terre, selon le cas, existants ou en projet, sont affectés, peut envoyer ses observations à l'administration qui a demandé la publication des renseignements, avec copie au Bureau des radiocommunications.	Any administration which considers that its existing or planned satellite systems or networks or terrestrial stations, as appropriate, are affected, may send its comments to the administration which has requested publication of the information, with a copy of such comments to the Radiocommunication Bureau.	Cualquier administración que considere que sus sistemas o redes des satélites o estaciones terrenales, según el caso, existentes o planificados se verán afectados, podrá comunicar sus comentarios a la administración que haya solicitado la publicación de la información, enviando una copia de dichos comentarios a la Oficina de Radiocommunicaciones.

Information aussi disponible sur le / Information also available on the / Información también disponible en: **Space Network Systems Online Service :** **http://www-br/sns/advpub.html**

Items	Description	Description	Descripción
A1a	Name of the space station	Nom de la station spatiale	Nombre de la estación espacial
A1f	Notifying administration	Administration notificatrice	Administración notificante
A2a	Date of bringing into use	Date de mise en service	Fecha de puesta en servicio
A2b	Period of validity (year)	Période de validité (année)	Periodo de validez (año)
A4a1	Nominal longitude of a geostationary space station (degree)	Longitude nominale d'une station spatiale géostationnaire (degré)	Longitud nominal de una estación espacial geoestacionaria (grado)
A4b1	Angle of inclination of the orbit (degree)	Inclinaison de l'orbite (degré)	Ángulo de inclinación de la órbita (grado)
A4b2	Period (ddd/hh/mm)	Période (jjj/hh/mm)	Periodo (ddd/hh/mm)
A4b3a	Altitude of the apogee (km)	Altitude de l'apogée (km)	Altitud del apogeo (km)
A4b3b	Altitude of the perigee (km)	Altitude du périgée (km)	Altitud del perigeo (km)
A4b4a	Number of satellites	Nombre de satellites	Número de satélites
A4b4b	Reference body	Corps de référence	Cuerpo de referencia
A4b5a	Number of orbital planes	Nombre de plans orbitaux	Número de planos orbitales
C1	Frequency Range	Gamme de fréquences	Gama de frecuencias
C4a	Class of station	Classe de station	Clase de estación
C4b	Nature of service	Nature du service	Naturaleza del servicio
C11a4	Narrative description of the service area	Description détaillée de la zone de service	Descripción detallada de la zona de servicio
BR1	Date of receipt	Date de réception	Fecha de recepción
BR3a	Provision reference code	Code de référence de la disposition	Código de referencia de la disposición
BR6a	Identification number of the network	Numéro d'identification du réseau à satellite	Número de identificación de la red
BR6b	Old identification number of the network	Ancien numéro d'identification du réseau à satellite	Número anterior de la identificación de la red
BR20	IFIC number	Numéro de la IFIC	Número de la IFIC
BR22	Administration remarks	Remarques de l'Administration	Observaciones de la Administración
BR23	Radiocommunication Bureau comments	Observations du Bureau des radiocommunications	Comentarios de la Oficina de Radiocomunicaciones

SECTION SPECIALE / SPECIAL SECTION / SECCION ESPECIAL

A | *A1a* Space station: USABSN-10 | *A1f* Notifying adm.: USA | *BR1* Date of receipt: 01.04.2002 | *BR20* IFIC no.: | API/A/

BR6a/BR6b Id. no.: 7 | *BR3a* Provision reference: S9.1/IB

A4a1 Orbital long.: 114.5 W

A2a Date of bringing into use: 01.04.2007 *A2b* Period of valid.: 25

C1 Frequency range: From 17.3 GHz To 17.8 GHz

C4a Class of station	EV	ER	EK
C4b Nature of service	CR	OT	OT

C11a4 Service area: RG2

A2a Date of bringing into use: 01.04.2007 *A2b* Period of valid.: 25

C1 Frequency range: From 24.75 GHz To 25.25 GHz

C4a Class of station	EC	ED
C4b Nature of service	CV	OT

C11a4 Service area: RG2

BR22 Administration remarks:

BR23 Radiocommunication Bureau comments:

COMMENTAIRES DU BUREAU DES RADIOCOMMUNICATIONS CONCERNANT LE NUMEROTAGE DE LA SECTION SPECIALE

1. La date limite pour la réception des commentaires indiquée sur la page de couverture s'applique uniquement aux bandes de fréquences additionnelles suivantes:

2. La présente Section spéciale est aussi publiée conformément au paragraphe 7.1.3 de l'Appendice 30/S30 pour les gammes de fréquences suivantes:

3. Sections spéciales déjà publiées/ IFIC/ date:

COMMENTS OF RADIOCOMMUNICATION BUREAU RELATING TO THE SPECIAL SECTION NUMBERING

1. Expiry date for the receipt of comments indicated on the cover page applies only to the following additional frequency bands:

—

2. This Special Section is also published in accordance with paragraph 7.1.3 of Appendix 30/S30 with respect to the following frequency bands:

—

3. Previously published Special Sections/ IFIC/Date:

—

COMENTARIOS DE LA OFICINA DE RADIOCOMUNICACIONES RELATIVOS A LA NUMERACION DE LA SECCION ESPECIAL

1. La fecha límite para la recepción de los comentarios indicada en la portada de la Sección Especial sólo se aplica a las siguientes bandas de frecuencias adicionales:

2. La presente Sección Especial se publica también en virtud del párrafo 7.1.3 del apéndice 30/S30 para las siguientes gamas de frecuencias:

3. Secciones Especiales ya publicadas/ IFIC/ fecha:

UNION INTERNATIONALE DES TELECOMMUNICATIONS
BUREAU DES RADIOCOMMUNICATIONS

INTERNATIONAL TELECOMMUNICATION UNION
RADIOCOMMUNICATION BUREAU

UNIÓN INTERNACIONAL DE TELECOMUNICACIONES
OFICINA DE RADIOCOMUNICACIONES

IFIC / DATE IFIC / DATE IFIC / FECHA	SECTION SPECIALE N° SPECIAL SECTION No. SECCIÓN ESPECIAL N.° **API/A/**
RESEAU(X) A SATELLITE SATELLITE NETWORK(S) RED(ES) DE SATÉLITE **USABSN-11**	ADMINISTRATION RESPONSABLE RESPONSIBLE ADMINISTRATION ADMINISTRACIÓN RESPONSABLE **USA**

RENSEIGNEMENTS REÇUS PAR LE BUREAU LE
INFORMATION RECEIVED BY THE BUREAU ON
INFORMACIÓN RECIBIDA POR LA OFICINA EL **01.04.2002**

Ces renseignements concernant les réseaux à satellite régis par l'article S9, sous-section 1B, sont publiés par le Bureau des radiocommunications en application du No. S9.2B. Ils font l'objet de la(les) procédure(s) suivante(s), indiquée(s) ci-dessous par un X dans la case pertinente.
(voir les commentaires du Bureau des radiocommunications)

This information on satellite networks covered under Article S9, Sub-Section 1B, is published by the Radiocommunication Bureau in accordance with No. S9.2B. It is subject to the procedure(s) indicated below by an X in the relevant box.

(see comments of the Radiocommunication Bureau)

Esta información relativa a las redes de satélite regidas por el Artículo S9, sub-sección 1B, se publica por la Oficina de Radiocomunicaciones en virtud del No. S9.2B. Está sujeta al (los) procedimiento(s) siguiente(s), señalado(s) con una X en la casilla apropriada.
(véanse las observaciones de la Oficina de Radiocomunicaciones)

X	Les renseignements ont été reçus conformément au No. S9.1	The information has been received pursuant to No. S9.1	La información ha sido recibida de conformidad con No. S9.1
	Les renseignements ont été reçus conformément au No. S9.2	The information has been received pursuant to No. S9.2	La información ha sido recibida de conformidad con No. S9.2
	Toute administration estimant que ses réseaux à satellite, ses systèmes à satellites ou ses stations de terre, selon le cas, existants ou en projet, sont affectés, peut envoyer ses observations à l'administration qui a demandé la publication des renseignements, avec copie au Bureau des radiocommunications.	Any administration which considers that its existing or planned satellite systems or networks or terrestrial stations, as appropriate, are affected, may send its comments to the administration which has requested publication of the information, with a copy of such comments to the Radiocommunication Bureau.	Cualquier administración que considere que sus sistemas o redes des satélites o estaciones terrenales, según el caso, existentes o planificados se verán afectados, podrá comunicar sus comentarios a la administración que haya solicitado la publicación de la información, enviando una copia de dichos comentarios a la Oficina de Radiocommunicaciones.

Information aussi disponible sur le / Information also available on the / Información también disponible en: **Space Network Systems Online Service :** **http://www-br/sns/advpub.html**

Items	Description	Description	Descripción
A1a	Name of the space station	Nom de la station spatiale	Nombre de la estación espacial
A1f	Notifying administration	Administration notificatrice	Administración notificante
A2a	Date of bringing into use	Date de mise en service	Fecha de puesta en servicio
A2b	Period of validity (year)	Période de validité (année)	Periodo de validez (año)
A4a1	Nominal longitude of a geostationary space station (degree)	Longitude nominale d'une station spatiale géostationnaire (degré)	Longitud nominal de una estación espacial geoestacionaria (grado)
A4b1	Angle of inclination of the orbit (degree)	Inclinaison de l'orbite (degré)	Ángulo de inclinación de la órbita (grado)
A4b2	Period (ddd/hh/mm)	Période (jjj/hh/mm)	Periodo (ddd/hh/mm)
A4b3a	Altitude of the apogee (km)	Altitude de l'apogée (km)	Altitud del apogeo (km)
A4b3b	Altitude of the perigee (km)	Altitude du périgée (km)	Altitud del perigeo (km)
A4b4a	Number of satellites	Nombre de satellites	Número de satélites
A4b4b	Reference body	Corps de référence	Cuerpo de referencia
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C1	Frequency Range	Gamme de fréquences	Gama de frecuencias
C4a	Class of station	Classe de station	Clase de estación
C4b	Nature of service	Nature du service	Naturaleza del servicio
C11a4	Narrative description of the service area	Description détaillée de la zone de service	Descripción detallada de la zona de servicio
BR1	Date of receipt	Date de réception	Fecha de recepción
BR3a	Provision reference code	Code de référence de la disposition	Código de referencia de la disposición
BR6a	Identification number of the network	Numéro d'identification du réseau à satellite	Número de identificación de la red
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BR22	Administration remarks	Remarques de l'Administration	Observaciones de la Administración
BR23	Radiocommunication Bureau comments	Observations du Bureau des radiocommunications	Comentarios de la Oficina de Radiocomunicaciones

SECTION SPECIALE / SPECIAL SECTION / SECCION ESPECIAL

API/A/

A

A1a Space station: USABSN-11

A1f Notifying adm.: USA

BR1 Date of receipt: 01.04.2002

BR20 IFIC no.:

BR6a/BR6b Id. no.: 8

BR3a Provision reference: S9.1/IB

A4a1 Orbital long.: 119 W

A2a Date of bringing into use: 01.04.2007 *A2b* Period of valid.: 25

C1 Frequency range: From 17.3 GHz To 17.8 GHz

C4a Class of station: EV | ER | EK

C4b Nature of service: CR | OT | OT

C11a4 Service area: RG2

A2a Date of bringing into use: 01.04.2007 *A2b* Period of valid.: 25

C1 Frequency range: From 24.75 GHz To 25.25 GHz

C4a Class of station: EC | ED

C4b Nature of service: CV | OT

C11a4 Service area: RG2

BR22 Administration remarks:

BR23 Radiocommunication Bureau comments:

COMMENTAIRES DU BUREAU DES RADIOCOMMUNICATIONS CONCERNANT LE NUMEROTAGE DE LA SECTION SPECIALE

1. La date limite pour la réception des commentaires indiquée sur la page de couverture s'applique uniquement aux bandes de fréquences additionnelles suivantes:

2. La présente Section spéciale est aussi publiée conformément au paragraphe 7.1.3 de l'Appendice 30/S30 pour les gammes de fréquences suivantes:

3. Sections spéciales déjà publiées/ IFIC/ date:

COMMENTS OF RADIOCOMMUNICATION BUREAU RELATING TO THE SPECIAL SECTION NUMBERING

1. Expiry date for the receipt of comments indicated on the cover page applies only to the following additional frequency bands:

—

2. This Special Section is also published in accordance with paragraph 7.1.3 of Appendix 30/S30 with respect to the following frequency bands:

—

3. Previously published Special Sections/ IFIC/Date:

—

COMENTARIOS DE LA OFICINA DE RADIOCOMUNICACIONES RELATIVOS A LA NUMERACION DE LA SECCION ESPECIAL

1. La fecha límite para la recepción de los comentarios indicada en la portada de la Sección Especial sólo se aplica a las siguientes bandas de frecuencias adicionales:

2. La presente Sección Especial se publica también en virtud del párrafo 7.1.3 del apéndice 30/S30 para las siguientes gamas de frecuencias:

3. Secciones Especiales ya publicadas/ IFIC/ fecha:

Exhibit

B

Exhibit

C

Attachment C

LIST OF ECHOSTAR COMMUNICATIONS CORPORATION'S FCC LICENSES AND AUTHORIZATIONS (BY SUBSIDIARY)

SPACE STATIONS

List of EchoStar Satellite Corporation DBS Authorizations

DBS Location	Call Sign/File Number
61.5° W.L. (11 channels)	DBS 88-08; File No. 15-SAT-ML-98; Letter from Regina M. Keeney, Bureau Chief, FCC, to Direct Broadcasting Satellite Corp., 13 FCC Rcd 10395, DA 98-161 (1998)
110° W.L. (1 channel)	File No. SAT-MOD-19990419-00043; *EchoStar Satellite Corp.*, 15 FCC Rcd. 6727, DA 99-1758 (1999)
119° W.L. (21 channels)	DBS 88-01; File No. 68-SAT-ML-96; Letter from Donald H. Gips, Bureau Chief, FCC, to EchoStar Satellite Corp., 11 FCC Rcd. 16468, DA 96-1983 (Nov. 26, 1996) DBS 88-02; File No. 6-SAT-ML-97; Letter from Donald H. Gips, Bureau Chief, FCC, to EchoStar Satellite Corp., 11 FCC Rcd. 16465, DA 96-1983 (Nov. 26, 1996) File Nos. 70-SAT-MP/ML-98, 71-SAT-MP/ML-98, 72-SAT-MP/ML-98; *EchoStar Satellite Corp., Directsat Corp., and EchoStar DBS Corp.*, 13 FCC Rcd. 8595, DA 98-794 (1998) File Nos. SAT-MOD-19971230-00231, SAT-MOD-19971230-00235; *EchoStar Satellite Corp.*, 15 FCC Rcd. 23636, DA 00-2383 (2000)
148° W.L. (24 channels)	S2231; File No. 74-SAT-P/L-96; *EchoStar DBS Corp.*, 12 FCC Rcd. 11946, DA 96-2164 (1996) File Nos. 70-SAT-MP/ML-98, 71-SAT-MP/ML-98, 72-SAT-MP/ML-98; *EchoStar Satellite Corp., Directsat Corp., and EchoStar DBS Corp.*, 13 FCC Rcd. 8595, DA 98-794 (1998)
175° W.L. (22 Channels)	File No. DBS 88-02; *Application of Directsat Corp.* 8 FCC Rcd. 7962, DA 93-1331 (1993) File No. 88-08; *Application of Direct Broadcasting Satellite Corp.*, 8 FCC 7959, DA 93-1332 (1993)

List of EchoStar Satellite Corporation FSS Authorizations

FSS Location	Call Sign/File Number
83° W.L. (Ka-Band)	S2178; File No. 167-SAT-P/L-95; *EchoStar Satellite Corp.*, 13 FCC Rcd. 5664, DA 97-969 (1997)
83° W.L. (Ku-Band)	S2142; FSS-1; File No. 36-DSS-LA-94; *EchoStar Satellite Corp.*, 11 FCC Rcd. 20446, DA 96-1943 (1996)
121° W.L. (Ka-Band)	S2179; File No. 168-SAT-P/L-95; *EchoStar Satellite Corp.*, 13 FCC Rcd. 5664, DA 97-969 (1997)
121° W.L. (Ku-Band)	S2143; FSS-2; File No. 37-DSS-LA-94; *EchoStar Satellite Corp.*, 11 FCC Rcd. 20446, DA 96-1943 (1996)

List of EchoStar 110 Corporation DBS Authorizations

DBS Location	Call Sign/File Number
110° W.L. (28 Channels)	S2232; File No. 73-SAT-P/L-96; *In re Application of MCI Telecom. Corp. Assignor, and EchoStar 110 Corp., Assignee*, 15 Comm Reg. (P&F) 1035 (1999)

List of EchoStar VisionStar Corporation FSS Authorizations

FSS Location	Call Sign/File Number
113° W.L. (Ka-Band)	S2210; File No. SAT-T/C-20001215-00163; *Application of VisionStar, Inc., Licensee, Shant Hovanian, Transferor and EchoStar VisionStar Corp., Transferee, for Consent to Transfer of Control over Authorization to Construct, Launch and Operate a Ka-Band Satellite System in the Fixed-Satellite Service at the 113° W.L. Orbital Location,* DA 01-2481, Order and Authorization (rel. Oct. 30, 2001)

EARTH STATIONS

List of EchoStar North America Transmit/Receive Earth Stations

Call Sign	Location	Expiration Date
E890631	Cheyenne, Wyoming	April 4, 2010
E950252*	Cheyenne, Wyoming	June 9, 2005
E950253*	Cheyenne, Wyoming	June 9, 2005
E950287	Cheyenne, Wyoming	October 27, 2005
E950288	Cheyenne, Wyoming	October 27, 2005
E970394	Gilbert, Arizona	March 6, 2008
E980005	Cheyenne, Wyoming	August 1, 2011
E980047	Cheyenne, Wyoming	March 6, 2008
E980081	Cheyenne, Wyoming	August 1, 2011
E980082	Cheyenne, Wyoming	August 1, 2011
E980118	Cheyenne, Wyoming	March 20, 2008
E980127	Cheyenne, Wyoming	July 24, 2008
E980128	Cheyenne, Wyoming	July 24, 2008
E980142	Cheyenne, Wyoming	March 22, 2008
E980143	Cheyenne, Wyoming	June 10, 2008
E980174	Gilbert, Arizona	May 29, 2008
E980178	Gilbert, Arizona	May 29, 2008
E980180	Gilbert, Arizona	May 29, 2008
E990138	Cheyenne, Wyoming	September 21, 2009
E990139	Cheyenne, Wyoming	September 21, 2009
E990309	Cheyenne, Wyoming	September 17, 2009
E990310	Cheyenne, Wyoming	September 21, 2009

* FCC records may show this earth station to be licensed under EchoStar Communications Corporation or EchoStar Licensee Corporation. However, the earth station is properly licensed under EchoStar North America Corporation.

List of EchoStar North America Corporation Receive-Only Earth Stations

Call Sign	Location	Expiration Date
E970395	Gilbert, Arizona	December 12, 2007
E970396	Gilbert, Arizona	December 12, 2007

List of EchoStar Satellite Corporation Transmit/Receive Earth Stations

Call Sign	Location	Expiration Date
E980117	Cheyenne, Wyoming	March 13, 2008
E010240	Gilbert, Arizona	November 2, 2011
E010241	Gilbert, Arizona	November 2, 2011
E010242	Gilbert, Arizona	November 2, 2011

ECHOSTAR EARTH STATION SPECIAL TEMPORARY AUTHORIZATIONS*

EchoStar North America Corporation Earth Station Authorizations for Special Temporary Authority (1998-Present)

Call Sign	Location	File Number	Exp. Date
E890631	Cheyenne, Wyoming	SES-STA-19991217-02205	Dec. 26. 2000
E890631	Cheyenne, Wyoming	SES-STA-20000224-00332	Aug. 26. 2000
E950288	Cheyenne, Wyoming	SES-STA-19991227-02287	Mar. 19. 2000
E950288	Cheyenne, Wyoming	SES-STA-20000316-00432	Sept. 19. 2000
E980005	Cheyenne, Wyoming	SES-STA-19981005-01492	Apr. 4. 1999
E980005	Cheyenne, Wyoming	SES-STA-19990331-00453	Oct. 4. 1999
E980005	Cheyenne, Wyoming	SES-STA-19990520-00812	Dec. 16. 1999
E980005	Cheyenne, Wyoming	SES-STA-19991004-01775	Apr. 6. 2000
E980005	Cheyenne, Wyoming	SES-STA-19991215-02273	June 16. 2000
E980005	Cheyenne, Wyoming	SES-STA-20000614-00952	Dec. 16. 2000
E980005	Cheyenne, Wyoming	SES-STA-20001117-02183	Apr. 6. 2001
E980005	Cheyenne, Wyoming	SES-STA-20001213-02347	June 16. 2001
E980005	Cheyenne, Wyoming	SES-STA-20010402-00680	Oct. 6. 2001
E980005	**Cheyenne, Wyoming**	**SES-STA-20010605-01046**	**Dec. 16, 2001****
E980081	Cheyenne, Wyoming	SES-STA-19990120-00105	July 25. 1999
E980081	Cheyenne, Wyoming	SES-STA-19990722-01285	Jan. 25. 2000
E980081	Cheyenne, Wyoming	SES-STA-20000124-00096	July 25. 2000
E980081	Cheyenne, Wyoming	SES-STA-20000720-01182	Jan. 25, 2001
E980081	Cheyenne, Wyoming	SES-STA-20010119-00080	July 25. 2001
E980081	**Cheyenne, Wyoming**	**SES-STA-20010716-01310**	**Jan. 25, 2002****
E980082	Cheyenne. Wyoming	SES-STA-19990120-00106	July 25. 1999
E980082	Cheyenne. Wyoming	SES-STA-19990722-01286	Jan. 25. 2000
E980082	Cheyenne. Wyoming	SES-STA-20000124-00097	July 25. 2000
E980082	Cheyenne. Wyoming	SES-STA-20000720-01183	Jan. 25. 2001
E980082	Cheyenne. Wyoming	SES-STA-20010119-00081	July 25. 2001
E980082	**Cheyenne, Wyoming**	**SES-STA-20010716-01311**	**Jan. 25, 2002****
E980118	**Cheyenne, Wyoming**	**SES-STA-20011114-02149**	**System Entry**
E980143	Cheyenne. Wyoming	SES-STA-19990525-00813	Dec. 16. 1999
E980143	Cheyenne. Wyoming	SES-STA-19991215-02274	June 16. 2000

* Although EchoStar Satellite Corporation was granted STAs by the FCC prior to 1998, this list only covers those STAs granted after January 1, 1998. All entries in bold are currently in effect or pending before the Federal Communications Commission.

** On August, 1. 2001, the FCC's International Bureau, Satellite and Radiocommunication Division, granted EchoStar North America Corporation permanent authority to construct and operate the following three transmit/receive earth stations (E980005, E980081 and E980082). *See Application of EchoStar North America Corp.*, Order and Authorization, DA 01-609 (2001).

E990138	Cheyenne, Wyoming	SES-STA-19990520-00811	Dec. 16, 1999
E990138	Cheyenne, Wyoming	SES-STA-19991215-02275	June 16, 2000
E990139	Cheyenne, Wyoming	SES-STA-19990520-00809	Dec. 16, 1999
E990139	Cheyenne, Wyoming	SES-STA-19991215-02276	June 6, 2000
E990309	Cheyenne, Wyoming	SES-STA-19990701-01125	Jan. 25, 2000
E990310	Cheyenne, Wyoming	SES-STA-19990701-01126	Jan. 25, 2000

EchoStar Satellite Corporation Earth Station Authorizations for Special Temporary Authority (1998-Present)

Call Sign	Location	File Number	Exp. Date
E010240	Gilbert, Arizona	SES-STA-20010925-01823	Nov. 28, 2001
E010242	Gilbert, Arizona	SES-STA-20010925-01824	Nov. 28, 2001

* Although EchoStar Satellite Corporation was granted STAs by the FCC prior to 1998, this list only covers those STAs granted after January 1, 1998. All entries in bold are currently in effect or pending before the Federal Communications Commission.

ECHOSTAR SPACE STATION SPECIAL TEMPORARY AUTHORIZATIONS*

EchoStar Satellite Corporation Space Station Authorizations for Special Temporary Authority (1998-Present)

Call Sign	Location	File Number	Date Granted/ Status
DBS 88-08	61.5° W.L.	SAT-STA-19990907-00089	System Entry
DBS 88-08	61.5° W.L.	SAT-STA-20000308-00066	System Entry
DBS 88-08	61.5° W.L.	SAT-STA-20010226-00024	System Entry
DBS 88-08	**61.5° W.L.**	**SAT-STA-20010820-00076**	**System Entry**
	110° W.L.	SAT-STA-19990520-00055	June 16, 1999
	110° W.L.	SAT-STA-19990824-00085	Sept. 21, 1999
	110° W.L.	SAT-STA-19991006-00102	System Entry
	110°, 127° or 128° W.L.	SAT-STA-19980317-00020	Apr. 27, 1998
	110°, 119° or 148° W.L	SAT-STA-19980715-00059	July 15, 1998
DBS 88-01	119° W.L.	SAT-STA-19980505-00042	System Entry
	119° W.L.	SAT-STA-19991217-00132	Jan. 14, 2000
	119° W.L.	SAT-STA-20000712-00113	System Entry
DBS 88-01	119° W.L.	SAT-STA-20000802-00117	Aug. 10, 2000
	119° W.L.	SAT-STA-20010104-00003	System Entry
	119° W.L.	**SAT-STA-20010626-00060**	**System Entry**
	129° W.L.	SAT-STA-20010525-00047	System Entry
	148° W.L.	SAT-STA-19980722-00060	Aug. 21, 1998
	148° W.L.	SAT-STA-19990209-00020	Feb. 19, 1999
	148° W.L.	SAT-STA-19990812-00079	System Entry
	148° W.L.	SAT-STA-20000217-00060	System Entry
DBS 88-01	148° W.L.	SAT-STA-20000614-00104	June 26, 2000

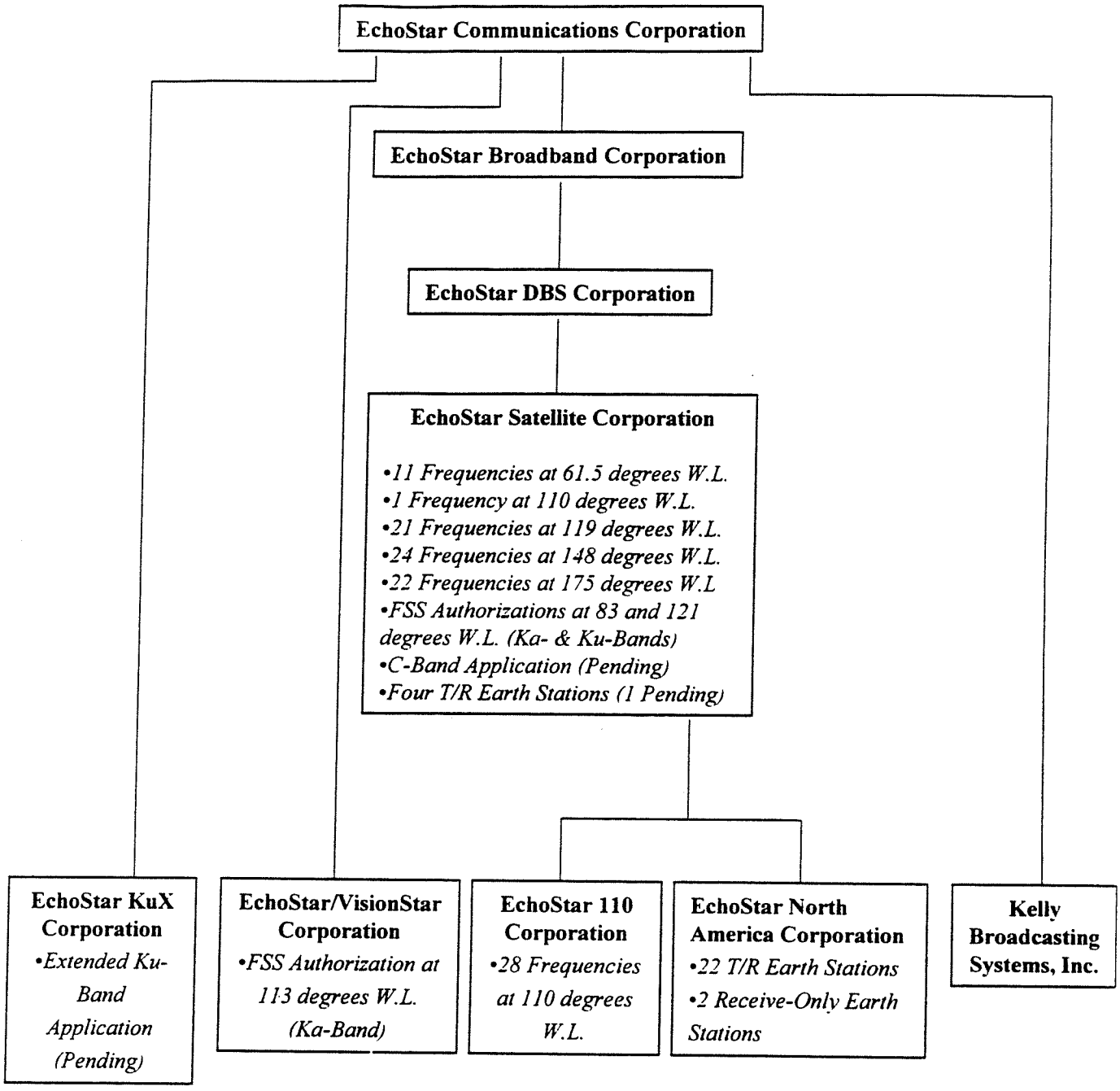
EchoStar Satellite Corporation Pending Space Station Authorizations for Special Temporary Authority

Call Sign	Location	File Number	Filing Date
S2231	**148° W.L.**	**SAT-STA-20011025-00091**	**Public Notice**

* Although EchoStar Satellite Corporation was granted STAs by the FCC prior to 1998, this list only covers those STAs granted after January 1, 1998. All entries in bold are currently in effect or pending before the Federal Communications Commission.

THE ECHOSTAR ORGANIZATION (Pre-Merger)

The following chart illustrates the relevant ECC ownership structure prior to the proposed transaction.



Attachment D

Attachment D

PRINCIPAL OWNERSHIP OF ECHOSTAR COMMUNICATIONS CORPORATION (A NEVADA CORPORATION)[1]

Individual Ownership Interests	Citizenship	Approx. Equity Interest	Approx. Voting Interest
Charles W. Ergen[2]	USA	44.8%	89.0%
James DeFranco	USA	1.5%	0.3%

Top Institutional/Corporate Holders	State/Country Of Incorporation	Approx. Equity Interest	Approx. Voting Interest
Vivendi Universal, S.A.	France	10.7%	2.2%
FMR Corporation (Fidelity Management & Research Corp.)	Massachusetts	6.6%	1.3%
Massachusetts Financial Services Co.	Delaware	4.9%	1.0%
Putnam Investments, LLC	Massachusetts	2.3%	0.5%
Morgan Stanley Dean Witter	Delaware	2.0%	0.4%
The News Corp. Ltd.	Australia	1.9%	0.4%

[1] As of January 25, 2002 – Based on issued and outstanding Class A common, Class B common and Series D convertible preferred stock.

[2] Includes both Class A common and Class B common stock ownership. Class B common stock is owned through a family trust.

Attachment D

SUBSIDIARIES OF ECHOSTAR

Subsidiary	State or Country Of Incorporation	% of Ownership	Name Doing Business As
Alta Wireless, Inc.	Colorado	49.9	Alta Wireless
Celsat America, Inc.	Delaware	17.6 (as of 10/29/01)	Celsat America
Dish Entertainment Corporation	Colorado	100	Dish Entertainment
Dish Factory Direct Corporation	Colorado	100	Dish Factory Direct
Dish Network Corporation	Colorado	100	DNCC
Dish Network Service Corporation f/k/a Dish Installation Network Corporation	Colorado	100	DNSC
Echo Acceptance Corporation	Colorado	100	EAC
EchoBand	Colorado	100	EchoBand
Echosphere Corporation	Colorado	100	Echosphere
EchoStar 110 Corporation	Colorado	100	EchoStar 110
EchoStar Broadband Corporation	Colorado	100	EchoStar Broadband Corporation
EchoStar Data Networks Corporation f/k/a Media4, Inc.	Colorado	100	EchoStar Data Networks or EDN
EchoStar DBS Corporation	Colorado	100	EchoStar DBS
EchoStar Engineering Corporation	Colorado	100	EchoStar Engineering
EchoStar International Corporation	Colorado	100	EchoStar International or EIC
EchoStar KuX Corporaton	Colorado	100	KuX
EchoStar North America Corporation f/k/a EchoStar Licensee Corporation	Colorado	100	EchoStar North America
EchoStar Orbital Corporation	Colorado	100	EchoStar Orbital
EchoStar PAC Corporation	Colorado	100	EchoStar PAC

EchoStar Real Estate Corporation	Colorado	100	EREC
EchoStar Real Estate Corporation II	Colorado	100	EREC II
EchoStar Real Estate Corporation III	Colorado	100	EREC III
EchoStar Satellite Corporation	Colorado	100	ESC
EchoStar Satellite Broadcasting Corporation	Colorado	100	ESBC
EchoStar Space Corporation	Colorado	100	Space
EchoStar Technologies Corporation f/k/a Houston Tracker Systems, Inc.	Colorado	100	EchoStar Technologies or ETC
EchoStar UK Holdings	England	100	UK Holdings
EchoStar VisionStar Corporation	Colorado	49.9	EchoStar VisionStar
EIC Spain, Inc.	Spain	100	EIC Spain
Eldon Technology Limited	England	100	Eldon
E-Sat, Inc.	Colorado	19.9	E-Sat
Houston Tracker Systems, Inc.	Texas	100	HTS
HT Ventures, Inc.	Colorado	100	HTV
Kelly Broadcasting, Inc.	New Jersey	100	KBS
NagraStar LLC	Colorado	50	NagraStar
OpenStar Corporation	Colorado	50	OpenStar
Satellite Communications Operating Corporation	Colorado	100	SCOC
Satellite Source, Inc.	Colorado	100	Satellite Source
Sky Vista Corporation	Colorado	100	Sky Vista
StarBand Communications, Inc.	Delaware	32 (as of 9/27/01)	StarBand
Transponder Encryption Services Corporation	Colorado	100	TESC
WildBlue Communications, Inc.	Delaware	20 (as of March 2000)	WildBlue

LIST OF ECHOSTAR COMMUNICATIONS CORPORATION'S PENDING FCC APPLICATIONS (BY SUBSIDIARY)

SPACE STATIONS

List of EchoStar Satellite Corporation Pending DBS Applications

Pending DBS Applications	Applications	FCC File Number
119° W.L (EchoStar 7)	*Application for Minor Modification of DBS Authorization, Launch and Operating Authority* (filed Aug. 10, 2001); *See* Public Notice, Report No. SAT-00080 (Aug. 24, 2001)	SAT-A/O-20010810-00073; SAT-MOD-20010810-00071
11 Unassigned Channels	*Applications of Continental Satellite Corp.*, 4 FCC Rcd. 6292 (1989) *Application for Extension of Time to Construct, Launch and Operate a Direct Broadcast Satellite System*, 11 FCC Rcd. 3017 (1995)	File No. 88-01 *et al.* File No. 131-SAT-EXT-95

List of EchoStar Satellite Corporation Pending FSS Applications

Pending FSS Applications	Applications	FCC File Number
121° W.L. (EchoStar 9)	*Application for Minor Modification of Authorization to Construct, Launch and Operate a Ku-Band Satellite in the Fixed Satellite Service* (filed June 8, 2001); *See* Public Notice, Report No. SAT-00074 (June 29, 2001) *Application for Minor Modification of Authorization to Construct, Launch and Operate a Ka-Band Satellite in the Fixed Satellite Service* (filed June 8, 2001); *See* Public Notice, Report No. SAT-00074	SAT-MOD-20010608-00054 SAT-MOD-20010608-00055
83° W.L.	*Application for Modification of Conditional Authorization to Include C-Band Operations at 83° W.L. FSS Orbital Location* (filed Dec. 19, 1996); *See* Public Notice, Report No. SPB-75	25-SAT-ML-97

List of EchoStar KuX Corporation Pending Extended Ku-Band FSS Applications

Pending Extended Ku-Band Application	Application	FCC File Number
85° W.L. 91° W.L.	*Application to Construct, Launch and Operate a Satellite System Consisting of Two "Extended" Ku-Band Communications Satellites* (filed Feb. 29, 1996); *See* Public Notice SPB-40	82-SAT-P/LA-96; 83-SAT-P/LA-96

EARTH STATIONS

List of EchoStar Satellite Corporation Pending Transmit/Receive Earth Stations

Call Sign	Location	Date Filed	File No.
E010266	Gilbert, Arizona	October 4, 2001	SES-LIC-20011004-01888

List of EchoStar Communications Corporation (a Nevada corporation)
Pending Transfer of Control Earth Station Applications

Pending Transfer of Control Application	Application	FCC File Number
E860008 E920003 E920242 E950177 E950309 E980095 E980096 E980097 E980109 E980147 E000165	*Nunc Pro Tunc Application of Kelly Broadcasting Systems, Inc., Licensee and Transferor, and EchoStar Communications Corporation, Transferee, for Consent to Transfer of Control of Various Earth Station Authorizations*, File No. ___	Unassigned

Applicant	Application File No.	Nominal Orbital Location (degrees West Longitude)
Pegasus Development DBS Corporation	SAT-LOA-20020322-00032	91
DIRECTV Enterprises, Inc.	SAT-LOA-19970605-00049	96.5
DIRECTV Enterprises, Inc.	SAT-LOA-19970605-00050	101
Pegasus Development DBS Corporation	SAT-LOA-20020322-00033	101
DIRECTV Enterprises, Inc.	SAT-LOA-19970605-00051	105.5
Pegasus Development Corporation	SAT-MOD-20020322-00035	107
EchoStar Satellite LLC	SAT-LOA-20020328-00050	110
Pegasus Development DBS Corporation	SAT-LOA-20020322-00034	110
EchoStar Satellite LLC	SAT-LOA-20020328-00051	114.5
Pegasus Development Corporation	SAT-MOD-20020322-00036	117
EchoStar Satellite LLC	SAT-LOA-20020328-00052	119