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EX PARTE OR LATE FILED

KELLOGG, HUBER, HANSEN, TODD & EVANS, P.L.L.C.

SUMNER SQUARE
1615 M STREET, N.W.
SUITE 400
WASHINGTON, D.C. 20036-3209

(202) 326-7900
FACSIMILE:
(202) 326-7999

MICHAEL K. KELLOGG
PETER W. HUBER
MARK C. HANSEN
K. CHRIS TODD
MARK L. EVANS
STEVEN F. BENZ
NEIL M. GORSUCH
GEOFFREY M. KLINEBERG
REID M. FIGEL

HENK BRANDS
SEAN A. LEV
EVAN T. LEO
ANTONIA M. APPS
MICHAEL J. GUZMAN
AARON M. PANNER
DAVID E. ROSS
SILVIJA A. STRIKIS
RICHARD H. STERN, OF COUNSEL

July 11, 2001

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JUL 11 2001

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

VIA HAND DELIVERY **EX PARTE**

Ms. Magalie Roman Salas
Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Re: Ex Parte Communication in ET Docket No. 98-206; RM-9147; RM-9245; Applications of Broadwave USA et al., PDC Broadband Corporation, and Satellite Receivers, Ltd., to provide a fixed service in the 12.2-12.7 GHz Band; Requests of Broadwave USA et al. (DA 99-494), PDC Broadband Corporation (DA 00-1841), and Satellite Receivers, Ltd. (DA 00-2134) for Waiver of Part 101 Rules.

Dear Ms. Salas,

Only July 10, 2001, Sophia Collier, Antoinette Cook Bush, and Bob Combs of Northpoint Technology, Ltd. ("Northpoint") met with the following FCC officials:

Bruce Franca	Acting Chief	OET
Bruce Romano	Associate Chief	OET
Julius Knapp	Chief, Policy & Rules Division	OET
Tom Derenge	Chief, Spectrum Policy Branch	OET
Mike Marcus	Assoc. Chief of Technology	OET
Geri Matise	Deputy Chief, Policy & Rules Division	OET
Ira Keltz	Electronics Engineer	OET
Gary Thayer	Electronics Engineer	OET
Saj Durrani	Institute of Electrical & Electronic Engineers – *detail*	OET
Johnson Smith	Intern	OET
Chuohao Yeo	Intern	OET
Lynna Quandt	Intern	OET
Paul Locke	Engineer	IB
Tom Stanley	Chief Engineer, Policy Division	WTB
Michael Pollak	Electrical Engineer	WTB

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List A B C D E

The purpose of this meeting was to discuss outstanding technical issues in the above-captioned matters. The materials attached at tab A were distributed at the meeting and used as a basis for discussion.

In response to questions at the meeting, Northpoint promised to send the meeting participants copies of certain materials already filed with the Commission (dated August 31, 2000, and September 8, 2000). The promised materials are attached hereto at tab B. Please note that in the attached information, the term "NGSO based proposal" refers to the DBS industry's proposal that the Northpoint terrestrial service be treated as if it were a satellite (NGSO-FSS) system.

The data in tab B confirm that, regardless whose analysis of the potential for "increased outage" in DBS service is used, the amount of estimated increased outage attributable to Northpoint's system is trivial. The attachments also demonstrate that Northpoint's proposal for an EPFD limit based upon a C/I of 20 dB will protect DBS subscribers from harmful interference. The additional mitigation proposed by the DBS industry to achieve a 2.86% increase in outage would require Northpoint to mitigate up to 10% of its service area in order to recover the sum total of 2 minutes of television viewing time *per year* for less than 1% of DBS customers.

Eighteen copies of this letter and its attachments are enclosed – two for inclusion in each of the above-referenced files. Please contact me if you have any questions.

Yours sincerely,

J. C. Rozendaal

J. C. Rozendaal

Counsel for Northpoint Technology, Ltd.

cc: meeting participants

A

Comparison of Northpoint and DBS Proposals

- Areas of agreement with DBS
  - EPFD should be used as criterion (instead of "increased outage" or "unavailability")
  - Agreed on model for calculating availability and outages
- Areas of difference
  - Rain model to use in formula: (DBS uses older model; Northpoint & FCC propose current ITU model)
  - "Outage" point (DBS proposes "quasi-error free operating threshold", Northpoint proposes full picture standard "freeze frame")
  - Actual interference criterion (DBS proposes 2.86% "increase in unavailability"; Northpoint proposes 20 dB C/I)

MITRE Weighs In on the Issues

- MITRE report rejected the DBS proposal of 2.86% "increase in unavailability" as an interference criterion
  - Proposed 10% increase in unavailability as alternative
- MITRE report rejected the DBS proposal of "quasi error free operating threshold" (MITRE video quality 9) as the basis of unavailability calculations
  - Proposed a lower point (MITRE video quality 6) for protection to begin
- MITRE used its own non-standard means of calculating the "outage due to rain"

Refinements to MITRE

- MITRE's recommendations support Northpoint proposals. With refinement can be helpful in resolving current issues
- Refining MITRE analysis:
  - MITRE's calculation of "quasi-error free" values differed from those submitted by DBS to ITU database
    - ITU values should be used
  - MITRE link model code not released to the public; method differs from DBS and Northpoint models (and that used by the FCC and ITU)
    - Northpoint and DBS agree on model; it should be used
- With these refinements, MITRE recommendations support Northpoint's 20 dB C/I proposal and related EPFD limits

Summary of Differences

Item	DBS	Northpoint	Difference in Required C/I
Outage Point	"Operational Threshold"	"Freeze Frame Point"	~1 dB
Rain Model	618-5 (Old ITU model)	618-6 (Current ITU model)	~1 dB
Increase in Outage	"2.86% of unavailability"	"10% of outage" (MITRE Report Recommendation)	~5.3 dB
Required C/I (dB)	27.3 (Calculated value with agreed on model)	20 (Calculated value with agreed on model)	7.3 dB

Northpoint EPFD

- Northpoint's EPFD Limits for DBS 45 cm Antenna follow directly from Northpoint's 20 dB C/I proposal

Location in U.S.	**EPFD (dBW/m^2 – 40 kHz)**
Southeastern U.S. (FL, GA, AL, MS, LA)	-156.7
Southern U.S. (NM, TX, OK, AR, TN, SC, NC)	-158.7
Northeastern U.S. (ND-KS-VA-ME)	-160.5
Western U.S. (CA-AZ-CO-MT-WA)	-163.0

These limits provide a minimum carrier to interference isolation of 20 dB for Low Data Rate, 23 dB for High Data Rate links.

B

Very Few Consumers Will Experience Increased Levels of Outages Under the C/I-Based Proposal

C/I Ratio	20-22	22-24	24-26	26-28	> 28
Minutes of outage C/I-based proposal	2.0	1.2	0.7	0.5	Less than 0.3
Minutes of outage NGSO-proposal	0.4	0.4	0.4	0.4	Less than 0.3
Difference (Minutes per Month)	1.6	0.8	0.3	0.1	-
% Population*	< 0.14%	< 0.19%	< 0.19%	< 0.19%	> 99.3%
Households**	< 105	< 142	< 142	< 142	> 74,475

* Including effect of natural shielding only (mitigation for any consumer in 20 dB contour)
** Average city of 500,000 households.

What Does "C/I of 20 dB" Mean for the Few DBS Consumers Who Would Experience It?

			ANNUAL MINUTES			
BSS Link from ITU Database	DMA Rank	DMA	Additional Time Below Operating Threshold	Actual Outage Freeze Frame	After 29% Factor for Actual Viewing	Monthly Minutes
US-GSO D2(a)	1	New York	74	32	9	0.76
US-GSO 4C6	2	Los Angeles	171	61	18	1.48
US-GSO 4D2	3	Chicago	129	67	20	1.63
US-GSO 4A3	7	Dallas	244	149	43	3.60
US-GSO 4C5	11	Houston	274	148	43	3.57
US-GSO 4C10	12	Seattle	166	54	16	1.31
US-GSO D10(a)	15	Minneapolis	159	53	15	1.29
US-GSO D1(a)	16	Florida (Miami)	73	88	25	2.12
US-GSO 4A8	36	Salt Lake City	25	8	2	0.19
US-GSO 4C9	37	San Antonio	282	149	43	3.61
		Average	160	81	23	1.96

Selected links represent all U.S. cities within the ITU BSS database and show the link with highest number of minutes of "increased unavailability" as calculated by DBS among all links serving the DMA

Comparison of NGSO-Based and C/I-Based Proposals – Minutes per Month

Under the C/I-based proposal a tiny fraction of consumers will experience the additional outage shown on the table – all other consumers will have an outage smaller than indicated.

			MONTHLY		
BSS Link from ITU Database	DMA Rank	DMA	NGSO-based proposal	C/I based proposal	Difference
US-GSO D2(a)	1	New York	0.19	0.76	0.6
US-GSO 4C6	2	Los Angeles	0.28	1.48	1.2
US-GSO 4D2	3	Chicago	0.32	1.63	1.3
US-GSO 4A3	7	Dallas	0.66	3.60	2.9
US-GSO 4C5	11	Houston	0.74	3.57	2.8
US-GSO 4C10	12	Seattle	0.23	1.31	1.1
US-GSO D10(a)	15	Minneapolis	0.38	1.29	0.9
US-GSO D1(a)	16	Florida (Miami)	0.45	2.12	1.7
US-GSO 4A8	36	Salt Lake City	0.03	0.19	0.2
US-GSO 4C9	37	San Antonio	0.76	3.61	2.8
		Average	0.40	1.96	1.6

It is highly unlikely that any consumer would actually be able to tell the difference between these two proposals. It is most likely that a consumer would not notice any difference at all in either case - given that television is on in the home for an average of 7 hours a day or 12,750 minutes per month, an additional 1-3 minutes is trivial.

What Would Northpoint Need to Do In Order to Provide Mitigation to the 2.86% Limit?

- In order to protect to the 2.86% level for less than 1% of DBS customers, Northpoint would need to do an additional 50 – 100,000 square miles of mitigation on a national basis, adding significantly to its system cost and rendering uneconomical deployment in low density rural areas where each incremental repeater has fewer and fewer customers, yet service is needed most.

BSS Link from ITU Database	Rank	DMA	Square Miles in DMA	% of DMA that is Inhabited	Repeaters needed for Inhabited area	Square miles of additional mitigation proposed by DBS	Monthly minutes of outage after additional mitigation	% of DBS Customers Impacted
US-GSO D2(a)	1	New York	12,059	95%	164	1,558	0.19	Less than 1%
US-GSO 4C6	2	Los Angeles	41,271	90%	531	5,045	0.28	"
US-GSO 4D2	3	Chicago	10,469	90%	135	1,283	0.32	"
US-GSO 4A3	7	Dallas	27,526	90%	354	3,363	0.66	"
US-GSO 4C5	11	Houston	17,708	85%	215	2,043	0.74	"
US-GSO 4C10	12	Seattle	25,097	80%	287	2,727	0.23	"
US-GSO D10(a)	15	Minneapolis	41,235	70%	412	3,914	0.38	"
US-GSO D1(a)	16	Florida (Miami)	4,117	90%	53	504	0.45	"
US-GSO 4A8	36	Salt Lake City	136,689	30%	586	5,567	0.03	"
US-GSO 4C9	37	San Antonio	31,887	50%	228	2,166	0.76	"
Average						2,817	0.40	Less than 1%

Selected links represent all U.S. cities within the ITU BSS database and show the highest minutes of "increased unavailability" among all links serving the DMA

Translating C/I levels to Power Levels to Create EPFD Limits

- An EPFD mask can be tailored for specific regions of the country to account for DBS signal power variances

Location	DBS Signal Power (dBW/24 MHz)	C/I ratio (db)	Interference Power (dBW/24 MHz)	EPFD (dBW/m2/40 kHz)
Seattle	-124.9	20	-144.9	-163.5
Another area	-118.9	20	-138.9	-157.5

CERTIFICATE OF SERVICE

I, Shannon Thrash, hereby certify that on this 11th day of July, 2001, copies of the foregoing were served by hand delivery* or first class United States mail, postage prepaid, on the following:

Magalie Roman Salas*
Secretary
Federal Communications Commission
445 12th Street, SW
Room TW-B204
Washington, D.C. 20554

Bruce Franca, Acting Chief
Julius Knapp, Chief, Policy & Rules Divi.
Tom Derenge, Chief, Spectrum Policy Branch
Mike Marcus, Assoc. Chief of Technology
Geri Matise, Dpty. Chief, Policy & Rules Div.
Bruce Romano, Associate Chief
Ira Keltz, Electronics Engineer
Gary Thayer, Electronics Engineer
Saj Durranin, IEEE - *detail*
Johnson Smith, Intern
Chuohao Yeo, Intern
Lynna Quandt, Intern
Office of Engineering and Technology*
Federal Communications Commission
445 12th Street, SW
Washington, D.C. 20554

Tom Stanley, Chief Engineer, Policy Div.
Michael Pollak, Electrical Engineer
Wireless Telecommunications Bureau
Federal Communications Commission*
445 12th Street, SW
Washington, D.C. 20554

Paul Locke, Electrical Engineer
International Bureau
Federal Communications Commission*
445 12th Street, SW
Washington, D.C. 20554

Antoinette Cook Bush, Esq.
Northpoint Technology, Ltd.
400 North Capitol Street, NW
Suite 368
Washington, D.C. 20001

Nathaniel J. Hardy, Esq.
Irwin, Campbell & Tannenwald, P.C.
1730 Rhode Island Ave, NW
Suite 200
Washington, D.C. 20036-3101

David C. Oxenford, Esq.
Shaw Pittman
2300 N. Street, NW
Washington, D.C. 20037

James H. Barker, III, Esq.
Latham & Watkins
1001 Pennsylvania Ave., NW
Suite 1300
Washington, D.C. 20004-2505

Pantelis Michalopoulos, Esq.
Steptoe & Johnson LLP
1330 Connecticut Avenue, NW
Washington, D.C. 20036

James W. Olson
Gregory F. Intoccia
Howrey Simon Arnold & White LLP
1299 Pennsylvania Ave., NW
Washington, D.C. 20004

Shannon Thrash