WILLKIE FARR & GALLAGHER

Washington, DC
New York
London
Paris

6/27

Kal: Please follow this through

1 - have they filed with FCC for the band.

2 - which portions of the bands have we filed with ITU-BR?

June 26, 1996

Mr. Harold J. Ng
Chief, Satellite Engineering Branch
Federal Communications Commission
International Bureau
Satellite & Radiocommunication Division
2000 M Street, N.W., Room 512
Washington, DC 20554

Re: AP-4 Submissions for 77° W.L. and 81° W.L.

Dear Mr. Ng:

Loral Space & Communications Ltd. recently submitted applications for authority to construct, launch and operate geosynchronous communications satellites in the fixed satellite service at 77° W.L. and 81° W.L. using portions of the C and Ku-bands at 77° and the Ku-band at 81°.[1] Loral's proposed satellites will offer service to almost all of North and South America.

Loral has developed the attached ITU AP-4 advance publication data for the proposed orbital locations. Pursuant to our telephone conversation, we are submitting these forms in the hope that we will be able to develop an appropriate filing for submission to the ITU. By filing the enclosed AP-4 forms, the United States will protect its interests by ensuring that the orbital locations identified remain available for use by US-licensed satellite systems.

---

1 Technical details of Loral's proposed systems can be found in Loral's applications filed June 10, 1996, FCC File Nos. 125-SAT-P/LA-96 and 126-SAT-P/LA-96.

Three Lafayette Centre
1155 21st Street, NW
Washington, DC 20036-3384
202 328 8000

Telex: RCA 229800
WU 89-2762
Fax: 202 887 8979

Thank you for your attention to this matter. If you have any questions or concerns, please do not hesitate to contact the undersigned.

Sincerely,

Michele R. Pistone
Andrew R. D'Uva

Counsel for
LORAL SPACE & COMMUNICATIONS LTD.

Enclosures

DATE (Day/Month/Year)

Administration Serial Number

FORM OF NOTICE
SATELLITE NETWORK
(APPENDIX 4)

PAGE 1 OF 15

AP4

NOTIFYING ADMINISTRATION: USA/

RR1042 Advance Publication: [X]

RR1047A Request for Assistance of the IFRB: [ ]

NOTIFICATION INTENDED FOR: ADD [X] MOD [ ] SUP [ ]

IFRB IDENTIFICATION NO OF NETWORK TO BE MODIFIED/SUPPRESSED

B: CHARACTERISTICS OF THE NETWORK

1 NAME OF THE SPACE STATION: USASAT-24Q

2 DATE OF BRINGING INTO USE: Day 31 Month 01 Year 2001

REFERENCE TO PREVIOUS SPECIAL SECTION NUMBER (if network modified): AR11/A/ Number

3a ADMINISTRATIONS IN GROUP

3b OPERATING AGENCY OR COMPANY: 120

3c ADMINISTRATION RESPONSIBLE FOR THE STATION: A

4 ORBITAL INFORMATION

a. FOR GEOSTATIONARY SATELLITES

1. NOMINAL ORBIT LONGITUDE	2. LONGITUDINAL TOLERANCE		3. INCLINATION	4. VISIBILITY ARC		5. SERVICE ARC	
Degrees E/W	Degrees To West	Degrees To East	Degrees	Degrees From W E/W	Degrees To E E/	Degrees From W E/W	Degrees To E E/W
77.0 W	0.05	0.05	0.05	104 W	53 W	104 W	53 W

6. REASON FOR SERVICE ARC < VISIBILITY ARC ATTACHED

b. FOR NON-GEOSTATIONARY SATELLITES

1. INCLINATION Degrees	2. PERIOD Days D Hours / Hours H Min.	3. APOGEE (km)	4. PERIGEE (km)	5. CELESTIAL BODY	6. NUMBER OF SATS.

GENERAL NOTES :

i. This form of notice consists of four parts - 1, 2, 3, and 4. In each part, each information item/data field includes a number in its label. This number is the same as that used for the same item in Appendix 4 (ORB-88) within the same part. For example, on the page labelled "Form AP4 - 2" (at the bottom), the field "4a1. Maximum power density" is the first item in section (a) of the paragraph numbered 4 in Part C.
The items from parts F and G of Appendix 4 have been included in the parts C and D referred to above. The items from these parts have the letters F and G (correspondingly) preceding the number that is included in their labels.

ii. Data items that are related are grouped together in a box. For example, the page labelled "Form AP4 - 2" (at the bottom) contains a box titled "Emissions and power characteristics". It is possible to specify 6 different emissions with the associated power and power density information in this box. If there are more emissions, use another page of the same type to provide additional data, after checking (X) the field labelled "More emissions on next page" on the preceding page. In all cases where there is more information than can fit in a box, follow this procedure.

iii. This form can be used to add to, modify or suppress an existing station, by checking the corresponding box at the top right-hand corner of this page in the area titled "Notification intended for". In the case of a modification of an existing station, where certain data fields are to be added, modified or suppressed, provide ALL the data in the particular box as they would look after the change. In addition, indicate that the corresponding beam, associated station or frequency range value is being modified by entering M in the field that has been provided for this purpose at these levels.

iv. Certain fields in this notice form have a superscript "1" as part of their labels. This has the following meaning :
1 - This information is to be provided only if available.

C: SATELLITE NETWORK CHARACTERISTICS IN THE EARTH-TO-SPACE DIRECTION

SATELLITE RECEIVING ANTENNA BEAM DETAILS

5. CHARACTERISTICS OF THE BEAM

ADD/MOD/SUP of the beam: ☐

b. RECEIVING BEAM DESIGNATION: RC

NOTE: For a steerable beam, the third character of the beam designation shall be "R"

OLD BEAM DESIGNATION (if changed):

ANTENNA

c1/d1/f1. MAXIMUM ISOTROPIC GAIN: +/- dBi: + 25.9

g. POLARIZATION [1]:

c2/d2. ANTENNA GAIN CONTOURS DIAGRAM ATTACHED SEE FIGURE NO: 1

e/f2. ANTENNA RADIATION PATTERN DIAGRAM ATTACHED SEE FIGURE NO:

h. ESTIMATED ANTENNA GAIN DIAGRAM VS ORBIT LONGITUDE ATTACHED SEE FIGURE NO: 7

INFORMATION TO BE PROVIDED FOR THIS RECEIVING ANTENNA BEAM

2a. CLASS OF STATION: EC	2b. NATURE OF SERVICE: CR	2a. CLASS OF STATION:	2b. NATURE OF SERVICE:
2a. CLASS OF STATION:	2b. NATURE OF SERVICE:	2a. CLASS OF STATION:	2b. NATURE OF SERVICE:

6. RECEIVING SYSTEM NOISE TEMPERATURE: 600 Kelvins

PERIOD OF VALIDITY: 20 Years

1. SERVICE AREA: OR SERVICE AREA DIAGRAM ATTACHED:

3/Fb. FREQUENCY RANGE WITHIN WHICH THE CARRIERS WILL BE LOCATED

	Add/Mod/Sup of the freq. range	FREQUENCY	k/M/G Hz	IFRB IDENTIFICATION NUMBER for modification/suppression
FROM	☐	6425.00	M	
TO	☐	6725.00	M	

INFORMATION RELATED TO THE ASSOCIATED TRANSMITTING STATION(S)

EMISSIONS AND POWER CHARACTERISTICS

7/4a3. NECESSARY BANDWIDTH OR Fc/G2a. DESIGNATION OF EMISSION [1]	4a2/4c. TOTAL [1] +/ dBW	4a1. MAXIMUM POWER DENSITY +/ dBW/Hz	4d. MINIMUM CARRIER POWER [1] +/ dBW	Fd/G2b. SPACE/EARTH STATION E.I.R.P. [1] +/ dBW	8. MODULATION CHARACTERISTICS ATTACHED SEE ATTACHMENT NO.[1]
36M0FXF	+30.0	-33.0			
36M0M7W	+30.0	-41.8			
56K3F3W	+20.0	-37.6			

F. SPACE STATION

CHARACTERISTICS OF TRANSMITTING SPACE STATION FOR SPACE-TO-SPACE RELAYS

ADD/MOD/SUP of the station: ☐

a. SPACE STATION NAME:

G2c. TELECOMMAND INFORMATION ATTACHED. SEE ATTACHMENT NO.: [1]

EARTH STATION

ADD/MOD/SUP of the station: ☐

DESIGNATION OF TYPICAL EARTH STATION: TYPICAL-C

4b1. RADIATION PATTERN (give reference pattern or provide diagram): REC-580

4b2. ANTENNA RADIATION DIAGRAM ATTACHED SEE FIGURE NO.:

MORE EMISSIONS ON NEXT PAGE: ☐

MORE ASSOC. TRANSMITTING STATIONS ON NEXT PAGE: ☐

REMARKS:

NOTES ON FILLING IN THIS PAGE

FOR EACH BEAM FIRST FILL IN THE BOX TITLED 'CHARACTERISTICS OF THE BEAM'.
FOR EACH EARTH-TO-SPACE SERVICE AREA ASSOCIATED WITH THIS BEAM, FILL IN THE UPPER PORTION OF THE BOX TITLED 'INFORMATION TO BE PROVIDED FOR THIS RECEIVING ANTENNA BEAM'. FOR EACH SIZE (TYPE) OF TRANSMITTING EARTH STATION ANTENNA, FILL IN THE PORTION OF THE BOX TITLED 'INFORMATION RELATED TO THE ASSOCIATED TRANSMITTING STATION(S)'. USE ADDITIONAL PAGES AS NECESSARY. IF THIS IS A SPACE-TO-SPACE RELAY, IDENTIFY THE OTHER SPACE STATION(S) IN

C: SATELLITE NETWORK CHARACTERISTICS IN THE EARTH-TO-SPACE DIRECTION

SATELLITE RECEIVING ANTENNA BEAM DETAILS

5. CHARACTERISTICS OF THE BEAM

ADD/MOD/SUP of the beam: ☐

b. RECEIVING BEAM DESIGNATION: RK1

NOTE: For a steerable beam, the third character of the beam designation shall be "R"

OLD BEAM DESIGNATION (if changed): ☐☐☐

ANTENNA

c1/d1/f1. MAXIMUM ISOTROPIC GAIN: +/- dBi: + 31●4

g. POLARIZATION [1]: ☐☐☐☐☐

c2/d2. ANTENNA GAIN CONTOURS DIAGRAM ATTACHED SEE FIGURE NO: 2

e/f2. ANTENNA RADIATION PATTERN DIAGRAM ATTACHED SEE FIGURE NO: ☐☐

h. ESTIMATED ANTENNA GAIN DIAGRAM VS ORBIT LONGITUDE ATTACHED SEE FIGURE NO: 8

INFORMATION TO BE PROVIDED FOR THIS RECEIVING ANTENNA BEAM

2a. CLASS OF STATION	2b. NATURE OF SERVICE	2a. CLASS OF STATION	2b. NATURE OF SERVICE
EC	CR	☐☐	☐☐
☐☐	☐☐	☐☐	☐☐

6. RECEIVING SYSTEM NOISE TEMPERATURE: 650 Kelvins

PERIOD OF VALIDITY: 20 Years

1. SERVICE AREA: ☐☐☐ ☐☐☐ ☐☐☐ ☐☐☐ ☐☐☐ ☐☐☐ ☐☐☐ ☐☐☐ OR SERVICE AREA DIAGRAM ATTACHED ☐☐

3/Fb. FREQUENCY RANGE WITHIN WHICH THE CARRIERS WILL BE LOCATED

	Add/Mod/Sup of the freq. range	FREQUENCY	k/M/G Hz	IFRB IDENTIFICATION NUMBER for modification/suppression
FROM	☐	13●75	G	☐☐☐☐☐☐☐☐
TO	☐	14●00	G	☐☐☐☐☐☐☐☐

INFORMATION RELATED TO THE ASSOCIATED TRANSMITTING STATION(S)

EMISSIONS AND POWER CHARACTERISTICS

7/4a3. NECESSARY BANDWIDTH OR Fc/G2a. DESIGNATION OF EMISSION [1]	4a2/4c. TOTAL [1] +/ dBW	4a1. MAXIMUM POWER DENSITY +/ dBW/Hz	4d. MINIMUM CARRIER POWER [1] +/ dBW	Fd/G2b. SPACE/EARTH STATION E.I.R.P. [1] +/ dBW	8. MODULATION CHARACTERISTICS ATTACHED SEE [1] ATTACHMENT NO.
27M0M7W	+248	-461	☐☐☐●	☐☐☐●	☐☐
27M0FXF	+248	-382	☐☐☐●	☐☐☐●	☐☐
56K3F3W	-20●	-416	☐☐☐●	☐☐☐●	☐☐
☐☐☐☐☐☐☐☐	☐☐☐●	☐☐☐●	☐☐☐●	☐☐☐●	☐☐
☐☐☐☐☐☐☐☐	☐☐☐●	☐☐☐●	☐☐☐●	☐☐☐●	☐☐
☐☐☐☐☐☐☐☐	☐☐☐●	☐☐☐●	☐☐☐●	☐☐☐●	☐☐

F. SPACE STATION

CHARACTERISTICS OF TRANSMITTING SPACE STATION FOR SPACE-TO-SPACE RELAYS

ADD/MOD/SUP of the station: ☐

a. SPACE STATION NAME: ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

G2c. TELECOMMAND INFORMATION [1] ATTACHED. SEE ATTACHMENT NO.: ☐☐

EARTH STATION

ADD/MOD/SUP of the station: ☐

DESIGNATION OF TYPICAL EARTH STATION: TYPICAL-KU

4b1. RADIATION PATTERN (give reference pattern or provide diagram): REC-580

4b2. ANTENNA RADIATION DIAGRAM ATTACHED SEE FIGURE NO.: ☐☐

MORE EMISSIONS ON NEXT PAGE ☐ MORE ASSOC. TRANSMITTING STATIONS ON NEXT PAGE ☐

REMARKS:

NOTES ON FILLING IN THIS PAGE

FOR EACH BEAM FIRST FILL IN THE BOX TITLED 'CHARACTERISTICS OF THE BEAM'.
FOR EACH EARTH-TO-SPACE SERVICE AREA ASSOCIATED WITH THIS BEAM, FILL IN THE UPPER PORTION OF THE BOX TITLED 'INFORMATION TO BE PROVIDED FOR THIS RECEIVING ANTENNA BEAM'. FOR EACH SIZE (TYPE) OF TRANSMITTING EARTH STATION ANTENNA, FILL IN THE PORTION OF THE BOX TITLED 'INFORMATION RELATED TO THE ASSOCIATED TRANSMITTING STATION(S)'. USE ADDITIONAL PAGES AS NECESSARY. IF THIS IS A SPACE-TO-SPACE RELAY, IDENTIFY THE OTHER SPACE STATION(S) IN

C: SATELLITE NETWORK CHARACTERISTICS IN THE EARTH-TO-SPACE DIRECTION

SATELLITE RECEIVING ANTENNA BEAM DETAILS

5. CHARACTERISTICS OF THE BEAM

ADD/MOD/SUP of the beam: ☐

b. RECEIVING BEAM DESIGNATION: RK2

NOTE: For a steerable beam, the third character of the beam designation shall be "R"

OLD BEAM DESIGNATION (if changed): ☐☐☐

ANTENNA

c1/d1/f1. MAXIMUM ISOTROPIC GAIN: +/- dBi: + 30.4

g. POLARIZATION [1]: ☐☐☐☐☐

c2/d2. ANTENNA GAIN CONTOURS DIAGRAM ATTACHED SEE FIGURE NO: 3

e/f2. ANTENNA RADIATION PATTERN DIAGRAM ATTACHED SEE FIGURE NO: ☐☐

h. ESTIMATED ANTENNA GAIN DIAGRAM VS ORBIT LONGITUDE ATTACHED SEE FIGURE NO: 8

INFORMATION TO BE PROVIDED FOR THIS RECEIVING ANTENNA BEAM

2a. CLASS OF STATION	2b. NATURE OF SERVICE	2a. CLASS OF STATION	2b. NATURE OF SERVICE
EC	CR	☐☐	☐☐
☐☐	☐☐	☐☐	☐☐

6. RECEIVING SYSTEM NOISE TEMPERATURE: 650 Kelvins

PERIOD OF VALIDITY: 20 Years

1. SERVICE AREA: ☐☐☐ ☐☐☐ ☐☐☐ ☐☐☐ ☐☐☐ ☐☐☐ ☐☐☐ ☐☐☐ OR SERVICE AREA DIAGRAM ATTACHED ☐☐

3/Fb. FREQUENCY RANGE WITHIN WHICH THE CARRIERS WILL BE LOCATED

	Add/Mod/Sup of the freq. range	FREQUENCY	k/M/G Hz	IFRB IDENTIFICATION NUMBER for modification/suppression
FROM	☐	13.75	G	☐☐☐☐☐☐☐☐☐
TO	☐	14.00	G	☐☐☐☐☐☐☐☐☐

INFORMATION RELATED TO THE ASSOCIATED TRANSMITTING STATION(S)

EMISSIONS AND POWER CHARACTERISTICS

7/4a3. NECESSARY BANDWIDTH OR Fc/G2a. DESIGNATION OF EMISSION [1]	4a2/4c. TOTAL [1] +/ dBW	4a1. MAXIMUM POWER DENSITY +/ dBW/Hz	4d. MINIMUM CARRIER POWER [1] +/ dBW	Fd/G2b. SPACE/EARTH STATION E.I.R.P. [1] +/ dBW	8. MODULATION CHARACTERISTICS ATTACHED SEE ATTACHMENT NO. [1]
27M0M7W	+24.8	-46.1			☐☐
27M0FXF	+24.8	-38.2			☐☐
56K3F3W	-20.0	-41.6			☐☐
☐☐☐☐☐☐☐☐	☐☐☐☐	☐☐☐☐	☐☐☐☐	☐☐☐☐	☐☐
☐☐☐☐☐☐☐☐	☐☐☐☐	☐☐☐☐	☐☐☐☐	☐☐☐☐	☐☐
☐☐☐☐☐☐☐☐	☐☐☐☐	☐☐☐☐	☐☐☐☐	☐☐☐☐	☐☐

F. SPACE STATION

CHARACTERISTICS OF TRANSMITTING SPACE STATION FOR SPACE-TO-SPACE RELAYS

ADD/MOD/SUP of the station: ☐

a. SPACE STATION NAME: ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

G2c. TELECOMMAND INFORMATION [1] ATTACHED. SEE ATTACHMENT NO.: ☐☐

EARTH STATION

ADD/MOD/SUP of the station: ☐

DESIGNATION OF TYPICAL EARTH STATION: TYPICAL-KU

4b1. RADIATION PATTERN (give reference pattern or provide diagram): REC-580

4b2. ANTENNA RADIATION DIAGRAM ATTACHED SEE FIGURE NO.: ☐☐

MORE EMISSIONS ON NEXT PAGE ☐ MORE ASSOC. TRANSMITTING STATIONS ON NEXT PAGE ☐

REMARKS:

NOTES ON FILLING IN THIS PAGE

FOR EACH BEAM FIRST FILL IN THE BOX TITLED 'CHARACTERISTICS OF THE BEAM'.
FOR EACH EARTH-TO-SPACE SERVICE AREA ASSOCIATED WITH THIS BEAM, FILL IN THE UPPER PORTION OF THE BOX TITLED 'INFORMATION TO BE PROVIDED FOR THIS RECEIVING ANTENNA BEAM'. FOR EACH SIZE (TYPE) OF TRANSMITTING EARTH STATION ANTENNA, FILL IN THE PORTION OF THE BOX TITLED 'INFORMATION RELATED TO THE ASSOCIATED TRANSMITTING STATION(S)'. USE ADDITIONAL PAGES AS NECESSARY. IF THIS IS A SPACE-TO-SPACE RELAY, IDENTIFY THE OTHER SPACE STATION(S) IN

D: SATELLITE NETWORK CHARACTERISTICS IN THE SPACE-TO-EARTH DIRECTION

SATELLITE TRANSMITTING ANTENNA BEAM DETAILS

5. CHARACTERISTICS OF THE BEAM

ADD/MOD/SUP of the beam: ☐

b. TRANSMITTING BEAM DESIGNATION: TC

NOTE: For a steerable beam, the third character of the beam designation shall be "R"

OLD BEAM DESIGNATION (if changed): ☐☐☐

ANTENNA CHARACTERISTICS

c1/d1/f1. MAXIMUM ISOTROPIC GAIN: +/- dBi: + 26.8

g. POLARIZATION [1]: ☐☐☐☐☐

c2/d2. ANTENNA GAIN CONTOURS DIAGRAM ATTACHED SEE FIGURE NO: 4

e/f2. ANTENNA RADIATION PATTERN DIAGRAM: ☐☐

h. ESTIMATED ANTENNA GAIN DIAGRAM VS ORBIT: 7

INFORMATION TO BE PROVIDED FOR THIS TRANSMITTING ANTENNA BEAM

2a. CLASS OF STATION	2b. NATURE OF SERVICE	2a. CLASS OF STATION	2b. NATURE OF SERVICE
EC	CR	☐☐	☐☐
☐☐	☐☐	☐☐	☐☐

PERIOD OF VALIDITY: 20 Years

1. SERVICE AREA: ☐☐☐ ☐☐☐ ☐☐☐ ☐☐☐ ☐☐☐ ☐☐☐ ☐☐☐ ☐☐☐ OR

SERVICE AREA DIAGRAM ATTACHED: ☐☐

3/Fb. FREQUENCY RANGE WITHIN WHICH THE CARRIERS WILL BE LOCATED

	Add/Mod/Sup of the freq. range	FREQUENCY	k/M/G Hz	IFRB IDENTIFICATION NUMBER for modification/suppression
FROM	☐	3400.00	M	☐☐☐☐☐☐☐☐
TO	☐	3700.00	M	☐☐☐☐☐☐☐☐

SPACE STATION EMISSIONS AND ASSOCIATED RECEIVING STATION(S) INFORMATION

EMISSIONS AND POWER CHARACTERISTICS

6/4a3. NECESSARY BANDWIDTH OR Fc/G3a. DESIGNATION OF EMISSION [1]	4a2/4b. TOTAL PEAK POWER [1] +/ dBW	4a1/G3b. MAXIMUM POWER DENSITY +/ dBW/Hz	4c. MINIMUM CARRIER POWER [1] +/ dBW	Fd. SPACE STATION E.I.R.P. [1] +/ dBW	8. MODULATION CHARACTERISTICS ATTACHED SEE ATTACHMENT NO. [1]
36M0FXF	+14.7	-48.3			
36M0M7W	+14.7	-57.1			
56K3F3W	-17.3	-59.9			

F. SPACE STATION

CHARACTERISTICS OF RECEIVING SPACE STATIONS FOR SPACE-TO-SPACE RELAYS

ADD/MOD/SUP of the station: ☐

a. SPACE STATION NAME: ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

G3c. BEACON AND TELEMETRY INFORMATION ATTACHED. SEE ATTACHMENT NO.: ☐☐

MORE EMISSIONS ON NEXT PAGE: ☐

MORE ASSOC. RECEIVING STATIONS ON NEXT PAGE: ☐

EARTH STATION

ADD/MOD/SUP of the station: ☐

DESIGNATION OF TYPICAL EARTH STATION: TYPICAL-C

8b1. RADIATION PATTERN (give reference pattern or provide diagram): REC-580

8b2. ANTENNA RADIATION DIAGRAM ATTACHED SEE FIGURE NO.: ☐☐

8a. RECEIVING SYSTEM NOISE TEMPERATURE: 150 Kelvins

REMARKS:

NOTES ON FILLING IN THIS PAGE

FOR EACH BEAM FIRST FILL IN THE BOX TITLED 'CHARACTERISTICS OF THE BEAM'.
FOR EACH SPACE-TO-EARTH SERVICE AREA ASSOCIATED WITH THIS BEAM, FILL IN THE UPPER PORTION OF THE BOX TITLED 'INFORMATION TO BE PROVIDED FOR THIS TRANSMITTING ANTENNA BEAM'. ALSO PROVIDE THE "EMISSION AND POWER CHARACTERISTICS" FOR THIS TRANSMITTING ANTENNA BEAM. FOR EACH SIZE (TYPE) OF RECEIVING EARTH STATION PROVIDE THE EARTH STATION DETAILS AS SPECIFIED. IF THIS IS A SPACE-TO-SPACE RELAY, IDENTIFY THE OTHER SPACE STATION(S) IN THE

D: SATELLITE NETWORK CHARACTERISTICS IN THE SPACE-TO-EARTH DIRECTION

SATELLITE TRANSMITTING ANTENNA BEAM DETAILS

5. CHARACTERISTICS OF THE BEAM

ADD/MOD/SUP of the beam: ☐

b. TRANSMITTING BEAM DESIGNATION: TK1

NOTE: For a steerable beam, the third character of the beam designation shall be "R"

OLD BEAM DESIGNATION (if changed): ☐☐☐

ANTENNA CHARACTERISTICS

c1/d1/f1. MAXIMUM ISOTROPIC GAIN: +/- dBi → + 31.4

g. POLARIZATION [1]: ☐☐☐☐☐

c2/d2. ANTENNA GAIN CONTOURS DIAGRAM ATTACHED SEE FIGURE NO: 5

e/f2. ANTENNA RADIATION PATTERN DIAGRAM: ☐☐

h. ESTIMATED ANTENNA GAIN DIAGRAM VS ORBIT: 8

INFORMATION TO BE PROVIDED FOR THIS TRANSMITTING ANTENNA BEAM

2a. CLASS OF STATION	2b. NATURE OF SERVICE	2a. CLASS OF STATION	2b. NATURE OF SERVICE
EC	CR	☐☐	☐☐
☐☐	☐☐	☐☐	☐☐

PERIOD OF VALIDITY: 20 Years

1. SERVICE AREA: ☐☐☐ ☐☐☐ ☐☐☐ ☐☐☐ ☐☐☐ ☐☐☐ ☐☐☐ ☐☐☐ OR

SERVICE AREA DIAGRAM ATTACHED: ☐☐

3/Fb. FREQUENCY RANGE WITHIN WHICH THE CARRIERS WILL BE LOCATED

	Add/Mod/Sup of the freq. range	FREQUENCY	k/M/G Hz	IFRB IDENTIFICATION NUMBER for modification/suppression
FROM	☐	11.450	G	☐☐☐☐☐☐☐☐☐
TO	☐	11.700	G	☐☐☐☐☐☐☐☐☐

SPACE STATION EMISSIONS AND ASSOCIATED RECEIVING STATION(S) INFORMATION

EMISSIONS AND POWER CHARACTERISTICS

6/4a3. NECESSARY BANDWIDTH OR Fc/G3a. DESIGNATION OF EMISSION [1]	4a2/4b. TOTAL PEAK POWER [1] +/ dBW	4a1/G3b. MAXIMUM POWER DENSITY +/ dBW/Hz	4c. MINIMUM CARRIER POWER [1] +/ dBW	Fd. SPACE STATION E.I.R.P. [1] +/ dBW	8. MODULATION CHARACTERISTICS ATTACHED SEE [1] ATTACHMENT NO.
27M0M7W	+ 21.6	- 49.2			
27M0FXF	+ 21.6	- 41.4			
56K3F3W	- 9.2	- 48.8			

F. SPACE STATION

CHARACTERISTICS OF RECEIVING SPACE STATIONS FOR SPACE-TO-SPACE RELAYS

ADD/MOD/SUP of the station: ☐

a. SPACE STATION NAME: ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

G3c. BEACON AND TELEMETRY INFORMATION ATTACHED. SEE ATTACHMENT NO.: ☐☐

MORE EMISSIONS ON NEXT PAGE: ☐

MORE ASSOC. RECEIVING STATIONS ON NEXT PAGE: ☐

EARTH STATION

ADD/MOD/SUP of the station: ☐

DESIGNATION OF TYPICAL EARTH STATION: TYPICAL-KU

8b1. RADIATION PATTERN (give reference pattern or provide diagram): REC-580

8b2. ANTENNA RADIATION DIAGRAM ATTACHED SEE FIGURE NO.: ☐☐

8a. RECEIVING SYSTEM NOISE TEMPERATURE: Kelvins → 300

REMARKS: TRANSMISSIONS IN THE BAND 11.45-11.70 GHz WILL MEET THE REQUIREMENTS OF RADIO REGULATION APPENDIX 28.

NOTES ON FILLING IN THIS PAGE

FOR EACH BEAM FIRST FILL IN THE BOX TITLED 'CHARACTERISTICS OF THE BEAM'.
FOR EACH SPACE-TO-EARTH SERVICE AREA ASSOCIATED WITH THIS BEAM, FILL IN THE UPPER PORTION OF THE BOX TITLED 'INFORMATION TO BE PROVIDED FOR THIS TRANSMITTING ANTENNA BEAM'. ALSO PROVIDE THE "EMISSION AND POWER CHARACTERISTICS" FOR THIS TRANSMITTING ANTENNA BEAM. FOR EACH SIZE (TYPE) OF RECEIVING EARTH STATION PROVIDE THE EARTH STATION DETAILS AS SPECIFIED. IF THIS IS A SPACE-TO-SPACE RELAY, IDENTIFY THE OTHER SPACE STATION(S) IN THE

D: SATELLITE NETWORK CHARACTERISTICS IN THE SPACE-TO-EARTH DIRECTION

SATELLITE TRANSMITTING ANTENNA BEAM DETAILS

5. CHARACTERISTICS OF THE BEAM

ADD/MOD/SUP of the beam: ☐

b. TRANSMITTING BEAM DESIGNATION: TK2

NOTE: For a steerable beam, the third character of the beam designation shall be "R"

OLD BEAM DESIGNATION (if changed): ☐☐☐

ANTENNA CHARACTERISTICS

c1/d1/f1. MAXIMUM ISOTROPIC GAIN: +/- dBi → + 30.4

g. POLARIZATION [1]: ☐☐☐☐☐

c2/d2. ANTENNA GAIN CONTOURS DIAGRAM ATTACHED SEE FIGURE NO: 6

e/f2. ANTENNA RADIATION PATTERN DIAGRAM: ☐☐

h. ESTIMATED ANTENNA GAIN DIAGRAM VS ORBIT: 8

INFORMATION TO BE PROVIDED FOR THIS TRANSMITTING ANTENNA BEAM

2a. CLASS OF STATION	2b. NATURE OF SERVICE	2a. CLASS OF STATION	2b. NATURE OF SERVICE
EC	CR	☐☐	☐☐
☐☐	☐☐	☐☐	☐☐

PERIOD OF VALIDITY: 20 Years

1. SERVICE AREA: ☐☐☐ ☐☐☐ ☐☐☐ ☐☐☐ ☐☐☐ ☐☐☐ ☐☐☐ ☐☐☐ OR

SERVICE AREA DIAGRAM ATTACHED: ☐☐

3/Fb. FREQUENCY RANGE WITHIN WHICH THE CARRIERS WILL BE LOCATED

	Add/Mod/Sup of the freq. range	FREQUENCY	k/M/G Hz	IFRB IDENTIFICATION NUMBER for modification/suppression
FROM	☐	11.450	G	
TO	☐	11.700	G	

SPACE STATION EMISSIONS AND ASSOCIATED RECEIVING STATION(S) INFORMATION

EMISSIONS AND POWER CHARACTERISTICS

6/4a3. NECESSARY BANDWIDTH OR Fc/G3a. DESIGNATION OF EMISSION [1]	4a2/4b. TOTAL PEAK POWER [1] +/ dBW	4a1/G3b. MAXIMUM POWER DENSITY +/ dBW/Hz	4c. MINIMUM CARRIER POWER [1] +/ dBW	Fd. SPACE STATION E.I.R.P. [1] +/ dBW	8. MODULATION CHARACTERISTICS ATTACHED SEE [1] ATTACHMENT NO.
27M0M7W	+21.6	-49.2			
27M0FXF	+21.6	-41.4			
56K3F3W	-9.2	-48.8			

F. SPACE STATION

CHARACTERISTICS OF RECEIVING SPACE STATIONS FOR SPACE-TO-SPACE RELAYS

ADD/MOD/SUP of the station: ☐

a. SPACE STATION NAME: ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

G3c. BEACON AND TELEMETRY INFORMATION ATTACHED. SEE ATTACHMENT NO.: ☐

MORE EMISSIONS ON NEXT PAGE: ☐

MORE ASSOC. RECEIVING STATIONS ON NEXT PAGE: ☐

EARTH STATION

ADD/MOD/SUP of the station: ☐

DESIGNATION OF TYPICAL EARTH STATION: TYPICAL-KU

8b1. RADIATION PATTERN (give reference pattern or provide diagram): REC-580

8a. RECEIVING SYSTEM NOISE TEMPERATURE: Kelvins: 300

8b2. ANTENNA RADIATION DIAGRAM ATTACHED SEE FIGURE NO.: ☐☐

REMARKS: TRANSMISSIONS IN THE BAND 11.45-11.70 GHz WILL MEET THE REQUIREMENTS OF RADIO REGULATION APPENDIX 28.

NOTES ON FILLING IN THIS PAGE

FOR EACH BEAM FIRST FILL IN THE BOX TITLED 'CHARACTERISTICS OF THE BEAM'.
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E. OVERALL LINK CHARACTERISTICS

FOR GEOSTATIONARY SPACE STATIONS USING SIMPLE FREQUENCY-CHANGING TRANSPONDERS AND OPERATING WITH EARTH STATIONS ONLY

E1. Indicate the strapping (connection) between the uplink and downlink frequency bands for each intended combination of receiving and transmitting beams

Serial No.	ADD/SUP of the strap	BEAM COMBINATION UPLINK BEAM	BEAM COMBINATION DOWNLINK BEAM	FREQUENCY BAND COMBINATION UPLINK FREQUENCY BAND	k/M/G Hz	DOWNLINK FREQUENCY BAND	k/M/G Hz	BAND LIMITS
001		RC	TC	6425.0	M	3400.0	M	FROM
				6725.0	M	3700.0	M	TO
002		RK1	TK1	13.750	G	11.450	G	FROM
				14.000	G	11.700	G	TO
003		RK2	TK2	13.750	G	11.450	G	FROM
				14.000	G	11.700	G	TO
004		RK1	TK2	13.750	G	11.450	G	FROM
				14.000	G	11.700	G	TO
005		RK2	TK1	13.750	G	11.450	G	FROM
				14.000	G	11.700	G	TO
								FROM
								TO
								FROM
								TO
								FROM
								TO

MORE ON NEXT PAGE ☐

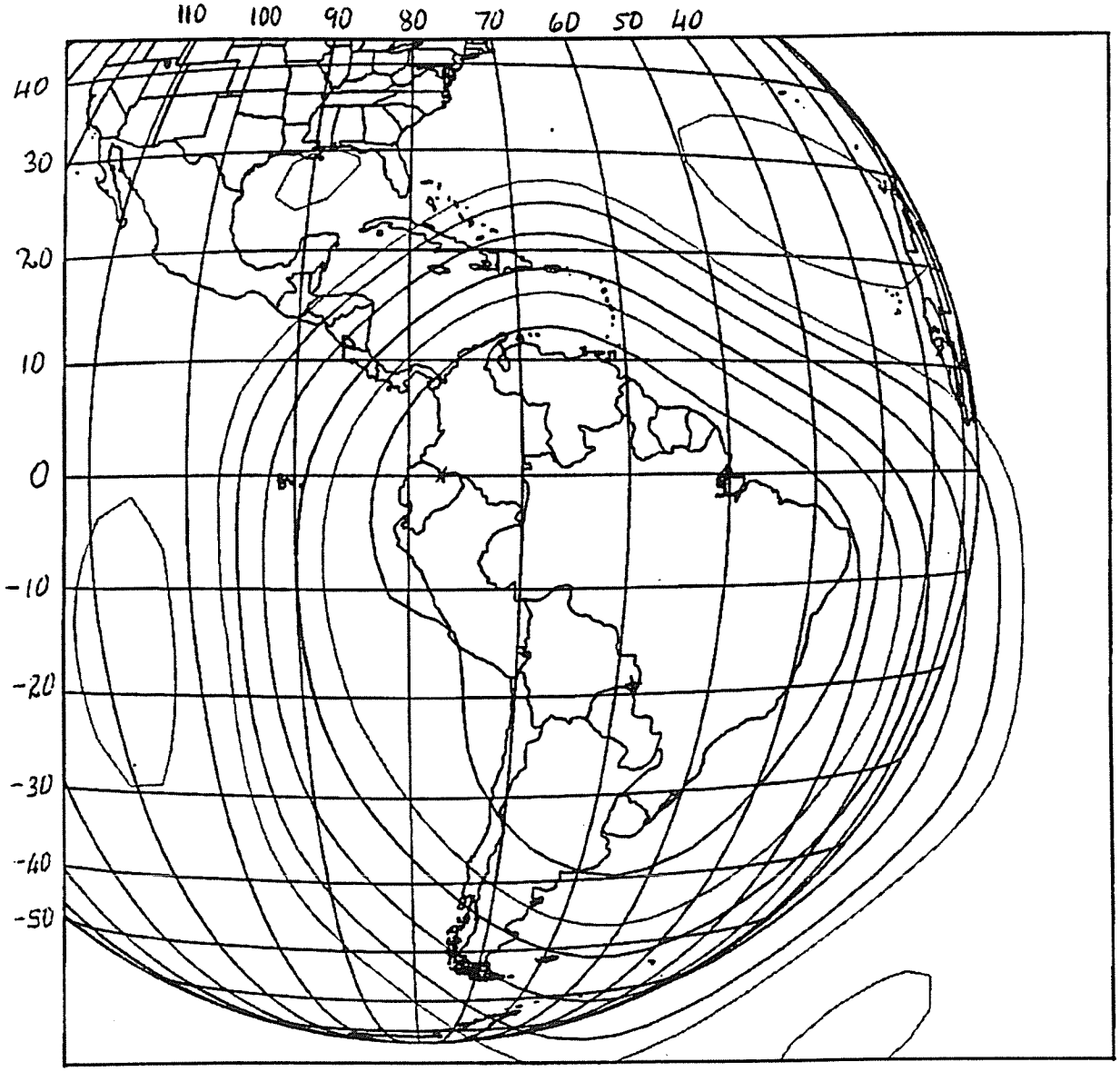
E2. For each entry (or group of entries) in table E1 indicate the following equivalent satellite link noise temperatures and associated transmission gains. If these values are specific to an associated receiving earth station, provide its name.

Reference to Serial No(s). in table E1	a1. LOWEST EQ. SAT. LINK NOISE TEMP. Kelvins	a2. TRANSM. GAIN ASSOCIATED WITH a1 +/-	a2. dB	b1. SAT. LINK NOISE TEMP. FOR HIGHEST RATIO OF GAIN/NOISE Kelvins	b2. TRANSM. GAIN ASSOCIATED WITH b1 +/-	b2. dB	ASSOCIATED RECEIVING EARTH STATION DESIGNATION
-							
-							
-							
-							
-							
-							
-							
-							
-							
-							
-							

MORE ON NEXT PAGE ☐

Figure 1. USASAT-24Q
Space Station Receive Antenna Gain Contours
Beam RC

Orbital View From 77 Degrees West
Latitude and Longitude Lines at 10 Degree Intervals

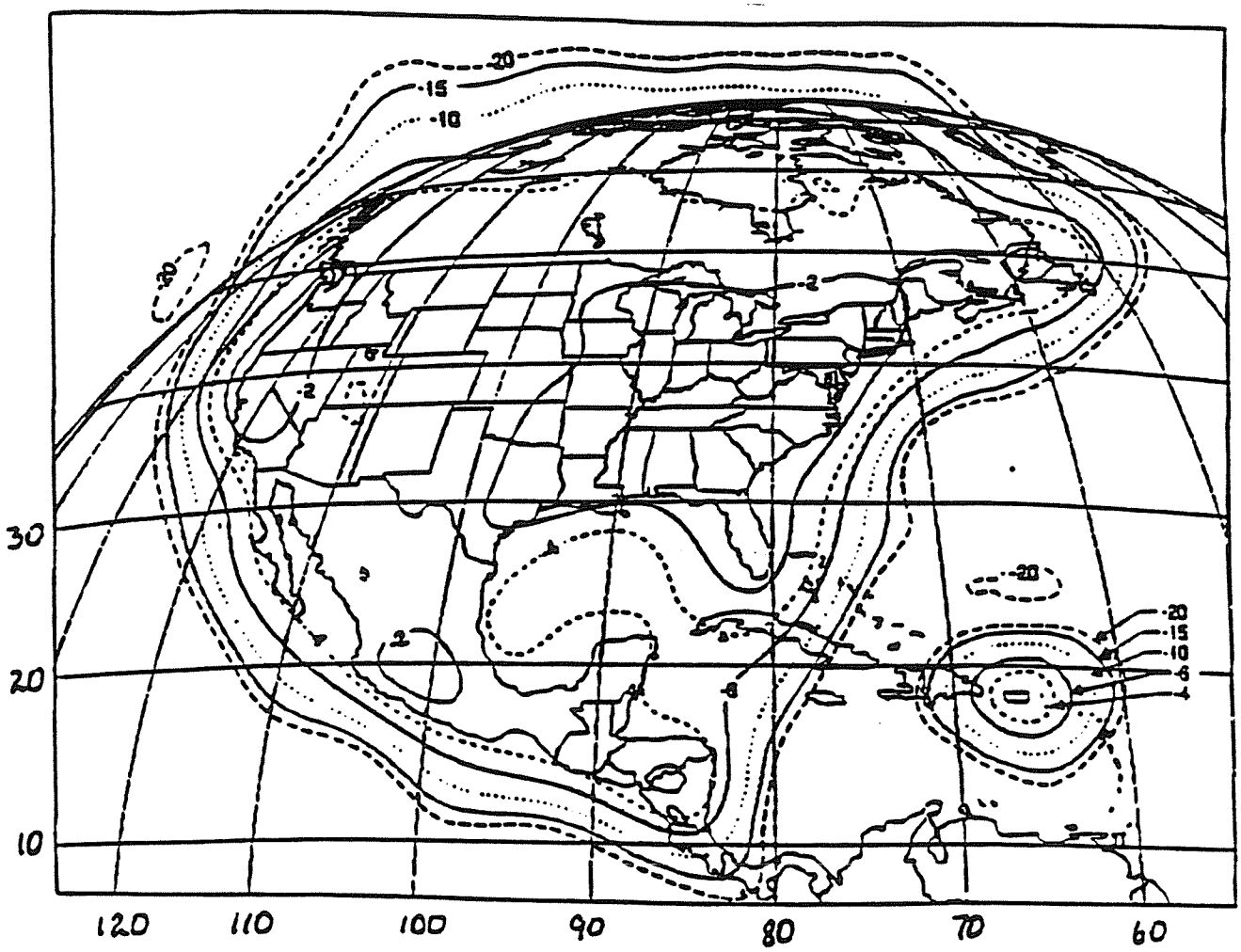


Notes:

1. Contours shown are -2, -4, -6, -10, -15, and -20dB relative to maximum gain.
2. Maximum isotropic gain is +25.9 dBi.
3. Does not include antenna pointing error of ±0.1° worst case.
4. x Denotes subsatellite point.
5. + Denotes peak gain.

Figure 2. USASAT-24Q
Space Station Receive Antenna Gain Contours
Beam RK1

Orbital View From 77 Degrees West
Latitude and Longitude Lines at 10 Degree Intervals
Boresight 98.2W x 32.4N

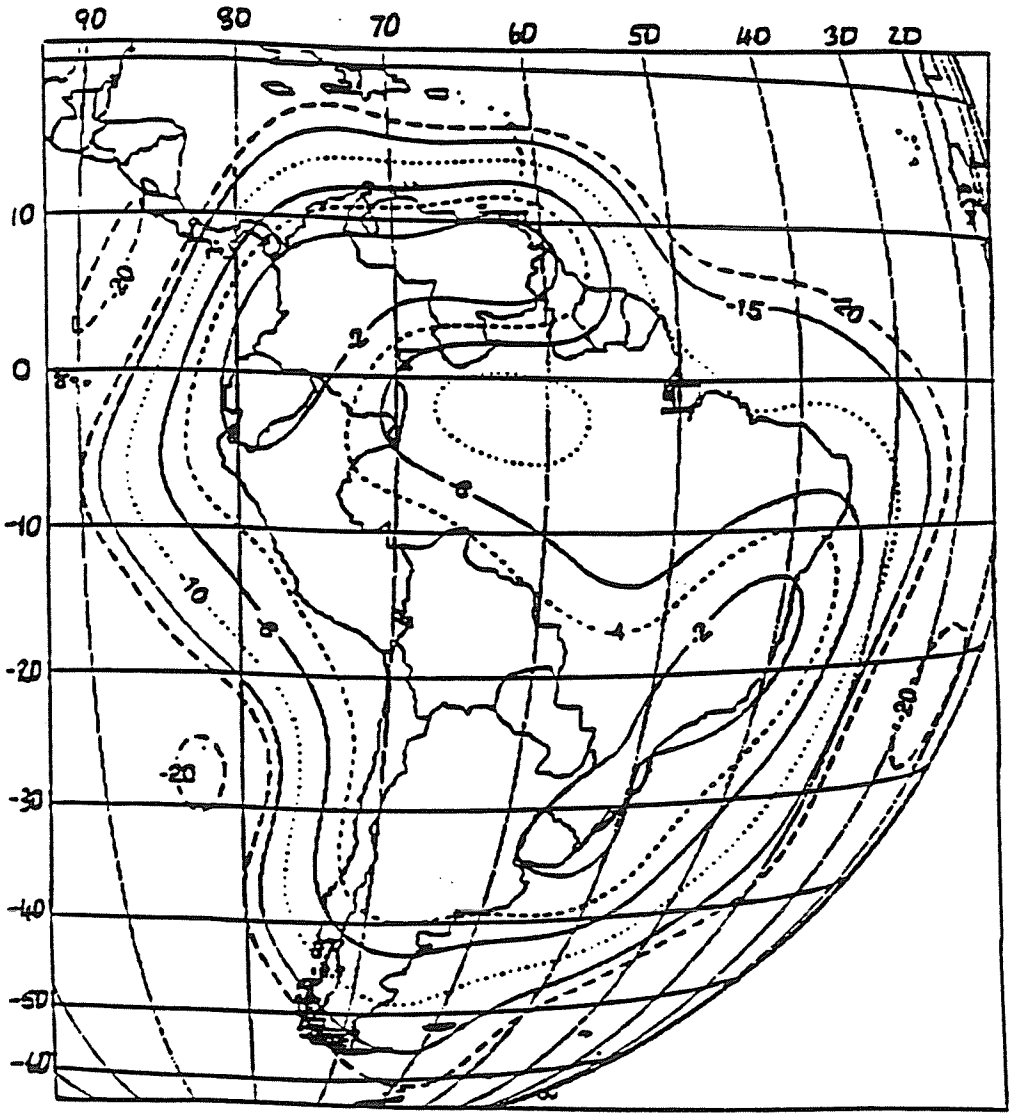


Notes:

1. Contours shown are -2, -4, -6, -10, and -20dB relative to maximum gain.
2. Maximum isotropic gain is +31.4 dBi.
3. Does not include antenna pointing error of ±0.1° worst case.
4. x Denotes subsatellite point.
5. + Denotes peak gain.

Figure 3. USASAT-24Q
Space Station Receive Antenna Gain Contours
Beam RK2

Orbital View From 77 Degrees West
Latitude and Longitude Lines at 10 Degree Intervals
Boresight 62.1W x 12.5S

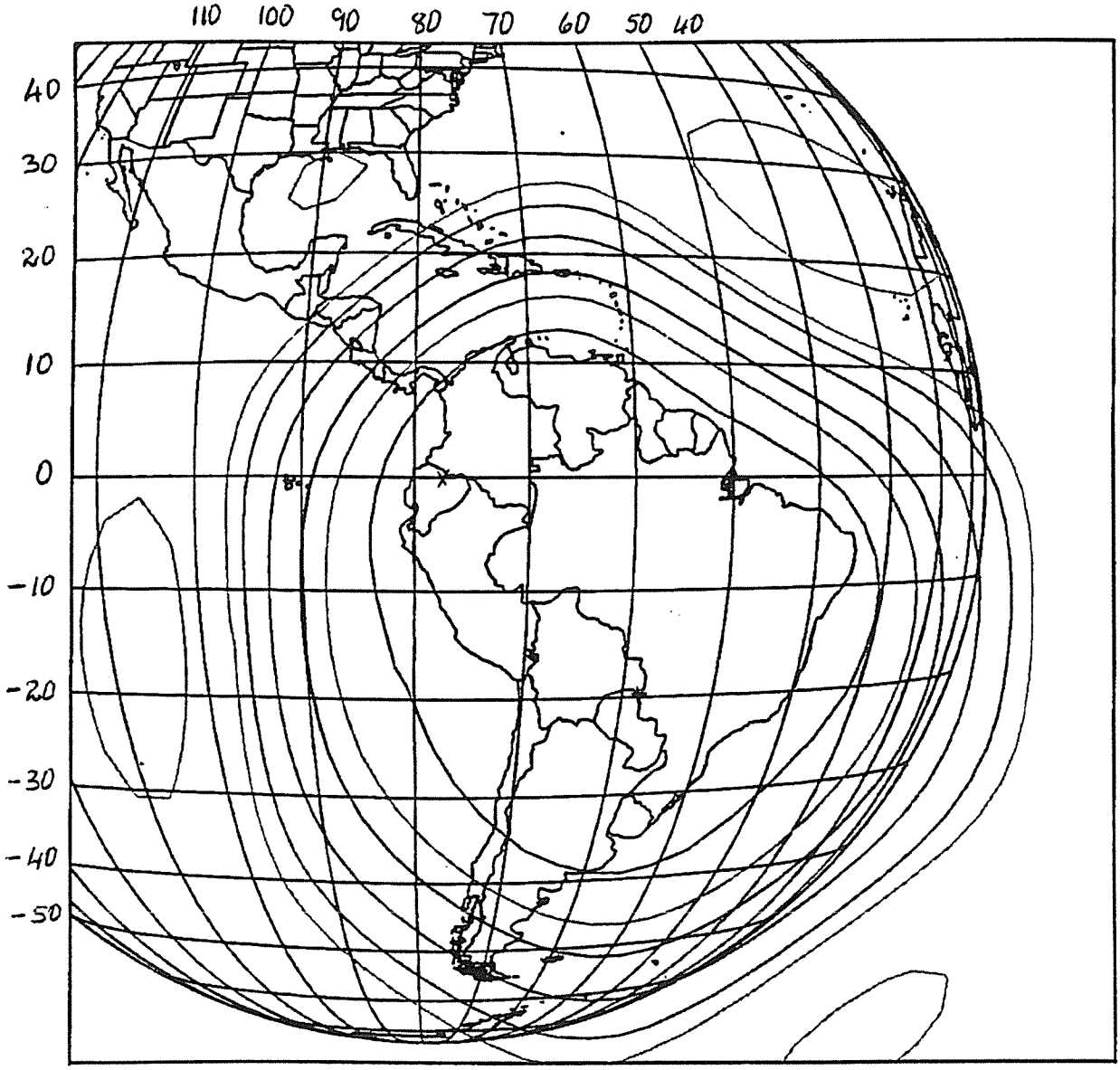


Notes:

1. Contours shown are -2, -4, -6, -10, and -20dB relative to maximum gain.
2. Maxium isotropic gain is +30.4 dBi.
3. Does not include antenna pointing error of ±0.1° worst case.
4. x Denotes subsatellite point.
5. + Denotes peak gain.

Figure 4. USASAT-24Q
Space Station Transmit Antenna Gain Contours
Beam TC

Orbital View From 77 Degrees West
Latitude and Longitude Lines at 10 Degree Intervals

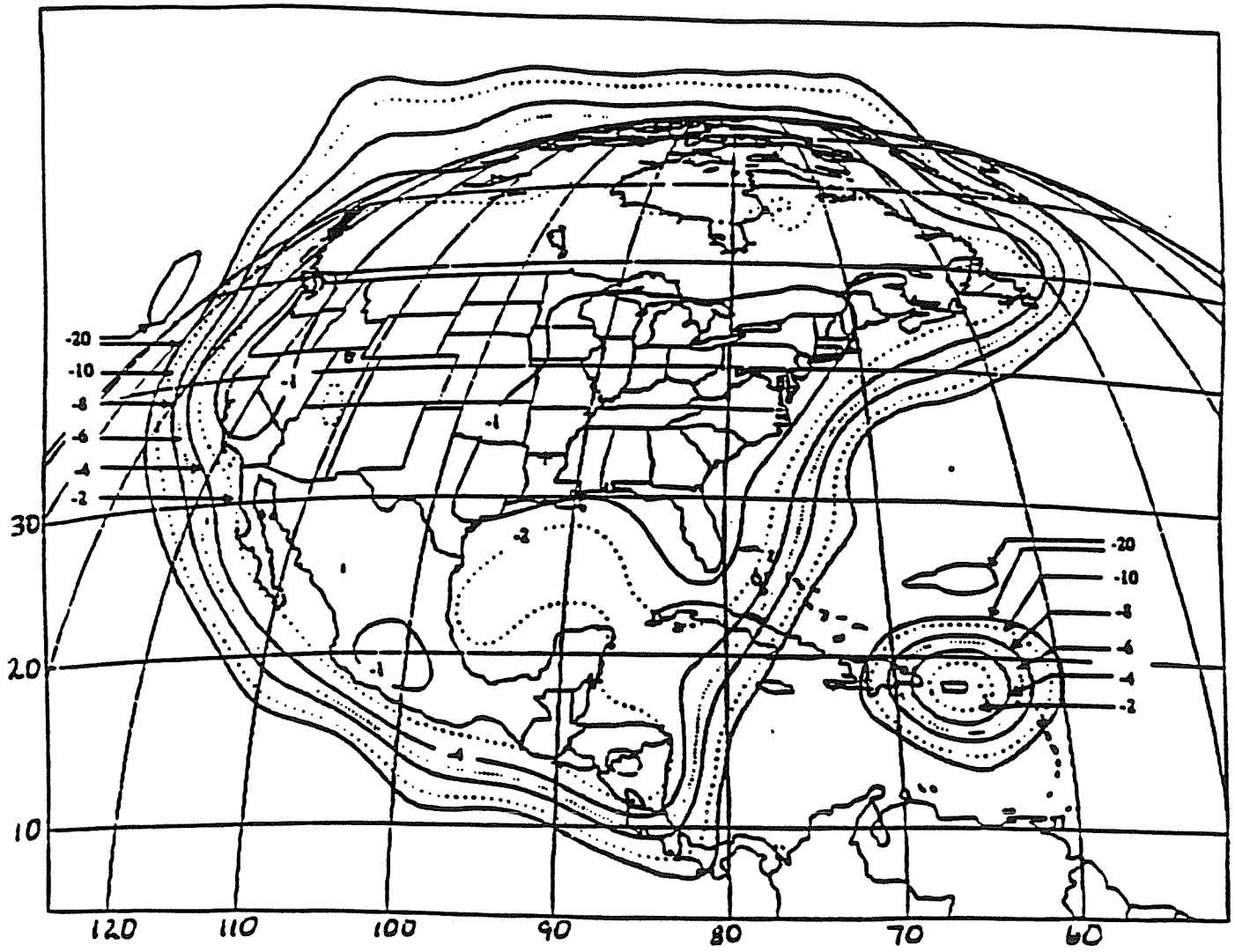


Notes:

1. Contours shown are -2, -4, -6, -10, -15 and -20dB relative to maximum gain.
2. Maximum isotropic gain is +26.8 dBi.
3. Does not include antenna pointing error of ±0.1° worst case.
4. x Denotes subsatellite point.
5. + Denotes peak gain.

Figure 5. USASAT-24Q
Space Station Transmit Antenna Gain Contours
Beam TK1

Orbital View From 77 Degrees West
Latitude and Longitude Lines at 10 Degree Intervals
Boresight 98.2W x 32.4N

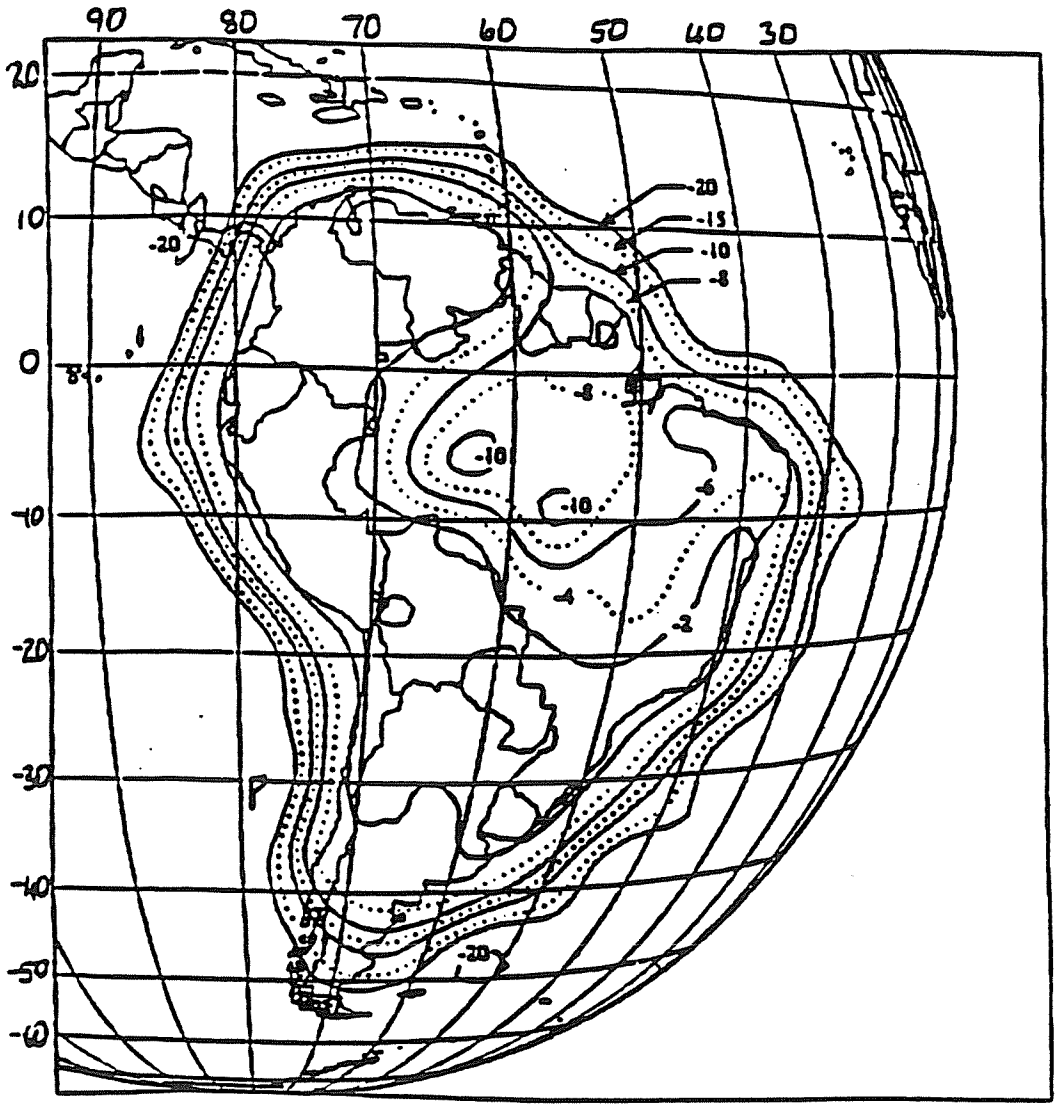


Notes:

1. Contours shown are -2, -4, -6, -10, and -20dB relative to maximum gain.
2. Maximum isotropic gain is +31.4 dBi.
3. Does not include antenna pointing error of ±0.1° worst case.
4. x Denotes subsatellite point.
5. + Denotes peak gain.

Figure 6. USASAT-24Q
Space Station Transmit Antenna Gain Contours
Beam TK2

Orbital View From 77 Degrees West
Latitude and Longitude Lines at 10 Degree Intervals
Boresight 62.1W x 12.5S



Notes:

1. Contours shown are -2, -4, -6, -10, and -20dB relative to maximum gain.
2. Maxium isotropic gain is +30.4 dBi.
3. Does not include antenna pointing error of ±0.1° worst case.
4. x Denotes subsatellite point.
5. + Denotes peak gain.

Figure 7. USASAT-24Q

Space Station Located 77 Degrees West
Gain Towards the Geostationary Satellite Orbit for Beams RC and TC

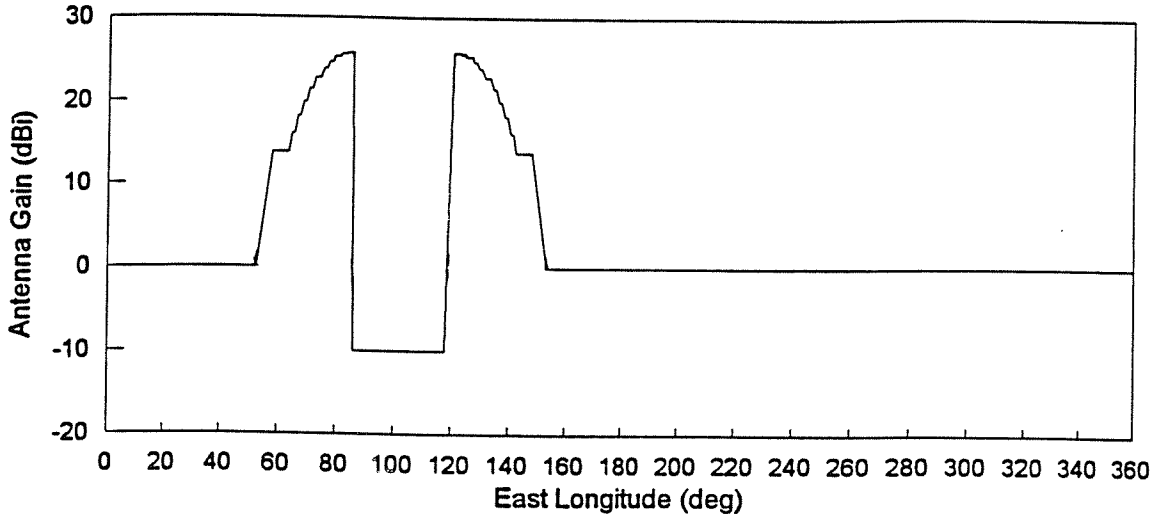


Figure 8. USASAT-24Q

Space Station Located 77 Degrees West
Gain Towards the Geostationary Satellite Orbit for Beams RK1, RK2, TK1 and TK2