

Panasonic Avionics Corporation
60-Day Special Temporary Authorization

Technical Appendix

- I. Satellite Operator Certification Letter
- II. Geographical Coverage Maps
- III. Draft FCC Form 312 Schedule B

I. Satellite Operator Certification Letter



September 25th, 2017

Federal Communications Commission
International Bureau
445 12th Street, SW
Washington, D.C. 20554

Re: Engineering Certification of Eutelsat S.A.

To Whom It May Concern:

This letter certifies that Eutelsat S.A. ("Eutelsat") is aware that Panasonic Avionics Corporation ("Panasonic") is planning to seek a modification to its blanket authorization from the Federal Communications Commission ("FCC") to operate technically identical Ku-band transmit/receive earth stations aboard aircraft ("ESAAs"), Call Sign E100089, with the EUTELSAT 70B satellite at 70.5° E.L. and the EUTELSAT 172B satellite to be located at 172° E.L.

Eutelsat understands that Panasonic will file the modification application pursuant to FCC rules governing ESAA operations to increase the maximum EIRP spectral density associated with ESAA transmissions to the EUTELSAT 70B satellite, and to operate at higher maximum EIRP spectral density with the EUTELSAT 172B than with the existing EUTELSAT 172A satellite at 172° E.L. Eutelsat understands that this modification is related to a change in Panasonic's approach to ESAA uplink power limits that will enhance throughput and efficiency by considering ESAA skew angle and location in the beam to set maximum power levels for ESAA terminal uplink transmissions.

Eutelsat confirms and hereby certifies the following with respect to the terminal operations proposed by Panasonic:

- a) The proposed Ku-band operation of Panasonic's ESAA terminal has the potential to create harmful interference to adjacent satellite networks that may be unacceptable;
- b) The proposed operation of the transmit/receive terminals at the power density levels defined in the agreement between Panasonic and Eutelsat is consistent with existing satellite coordination agreements with all adjacent satellite operators within +/- 6 degrees of orbital separation from Eutelsat 70B and Eutelsat 172B satellites.

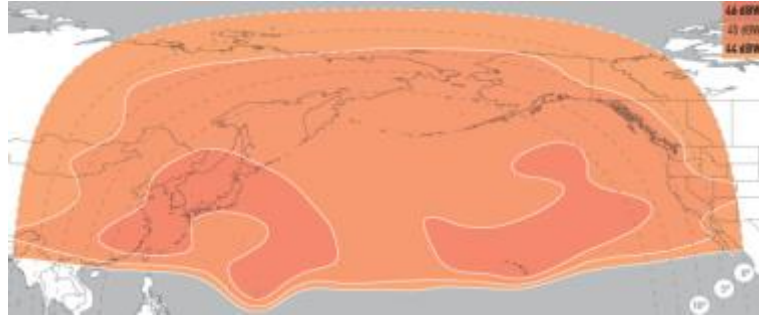
If the FCC authorizes the operation proposed by Panasonic, Eutelsat will include the power density levels specified by Panasonic, defined within the satellite coordination agreements, in all future satellite network coordination with operators of satellite that are adjacent to those satellites addressed by this letter.

Sincerely,

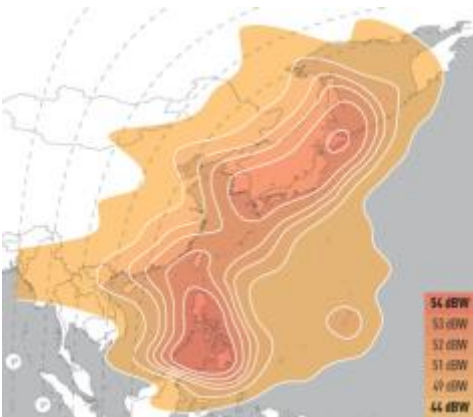
For Eutelsat
Filipe De Oliveira
Director of Resources Engineering

www.eutelsat.com

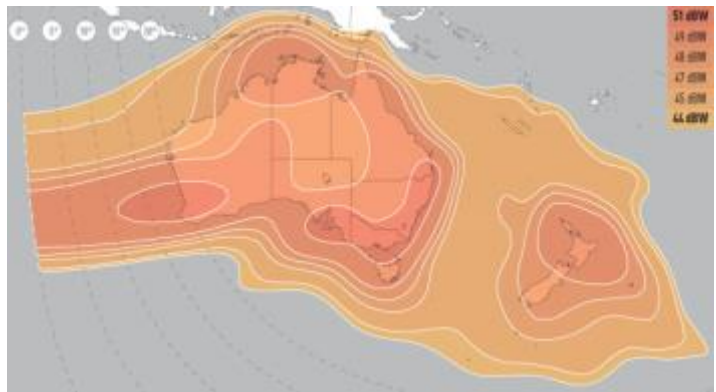
II. Coverage Maps (EUTELSAT 172B)



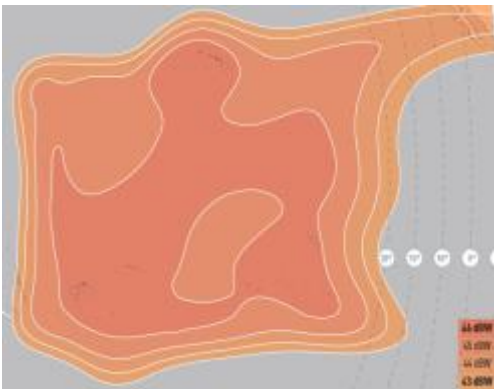
North Pacific (NP) Beam



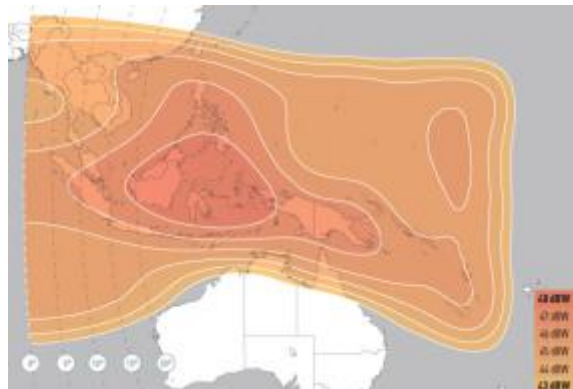
North East Asia (NEA) Beam



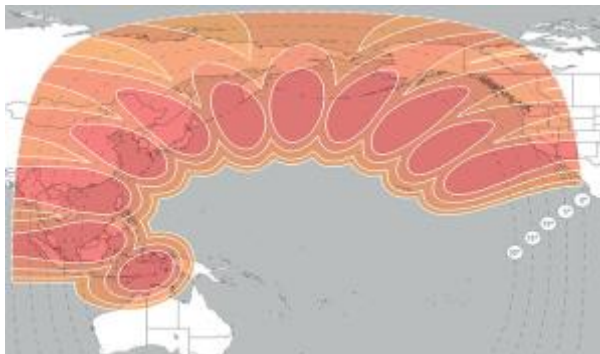
South Pacific (SP) Beam



South East Pacific (SEP) Beam



South West Pacific (SWP) Beam



High-throughput Satellite (HTS) Beams

Approved by OMB
3060-0678

III. EUTELSAT 172B Draft FCC Form 312 Schedule B

Date & Time Filed:
File Number: ---
Callsign/Satellite ID:

APPLICATION FOR EARTH STATION AUTHORIZATIONS	FCC Use Only
FCC 312 MAIN FORM FOR OFFICIAL USE ONLY	

APPLICANT INFORMATION

Enter a description of this application to identify it on the main menu:
DRAFT Form 312 Schedule B (EUTELSAT 172B)

1-8. Legal Name of Applicant			
Name:	Panasonic Avionics Corporation	Phone Number:	949-672-2364
DBA Name:		Fax Number:	
Street:	26200 Enterprise Way	E-Mail:	mark.defazio@panasonic.aero
City:	Lake Forest	State:	CA
Country:	USA	Zipcode:	92630 -
Attention:	Mr. Mark DeFazio		

9-16. Name of Contact Representative			
Name:	Carlos Nalda	Phone Number:	5713325626
Company:	LMI Advisors	Fax Number:	
Street:	2550 M Street NW Suite 345	E-Mail:	cnalda@lmiadvisors.com
City:	Washington	State:	DC
Country:	USA	Zipcode:	20037-
Attention:	Mr. Carlos Nalda	Relationship:	Other

CLASSIFICATION OF FILING

<p>17. Choose the button next to the classification that applies to this filing for both questions a. and b. Choose only one for 17a and only one for 17b.</p> <p>a.</p> <p><input checked="" type="radio"/> a1. Earth Station (N/A) a2. Space Station</p>	<p>b.</p> <p><input checked="" type="radio"/> b1. Application for License of New Station</p> <p><input checked="" type="radio"/> b2. Application for Registration of New Domestic Receive-Only Station (N/A) b3. Amendment to a Pending Application (N/A) b4. Modification of License or Registration (N/A) b5. Assignment of License or Registration (N/A) b6. Transfer of Control of License or Registration (N/A) b7. Notification of Minor Modification (N/A) b8. Application for License of New Receive-Only Station Using Non-U.S. Licensed Satellite (N/A) b9. Letter of Intent to Use Non-U.S. Licensed Satellite to Provide Service in the United States</p> <p><input checked="" type="radio"/> b10. Other (Please specify)</p> <p><input type="radio"/> b11. Application for Earth Station to Access a Non-U.S.satellite Not Currently Authorized to Provide the Proposed Service in the Proposed Frequencies in the United States.</p>
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17c. Is a fee submitted with this application?

If Yes, complete and attach FCC Form 159.

If No, indicate reason for fee exemption (see 47 C.F.R. Section 1.1114).

Governmental Entity Noncommercial educational licensee

Other (please explain): DRAFT FORM

17d.
Fee Classification

18. If this filing is in reference to an	19. If this filing is an amendment to a pending application enter:
------------------------------------------	--------------------------------------------------------------------

existing station, enter: (a) Call sign of station: Not Applicable	(a) Date pending application was filed: Not Applicable	(b) File number of pending application: Not Applicable
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TYPE OF SERVICE

20. NATURE OF SERVICE: This filing is for an authorization to provide or use the following type(s) of service(s): Select all that apply:

a. Fixed Satellite
 b. Mobile Satellite
 c. Radiodetermination Satellite
 d. Earth Exploration Satellite
 e. Direct to Home Fixed Satellite
 f. Digital Audio Radio Service
 g. Other (please specify)
 ESAA

21. STATUS: Choose the button next to the applicable status. Choose only one.
 Common Carrier Non-Common Carrier

22. If earth station applicant, check all that apply.
 Using U.S. licensed satellites
 Using Non-U.S. licensed satellites

23. If applicant is providing INTERNATIONAL COMMON CARRIER service, see instructions regarding Sec. 214 filings. Choose one. Are these facilities:
 Connected to a Public Switched Network Not connected to a Public Switched Network N/A

24. FREQUENCY BAND(S): Place an "X" in the box(es) next to all applicable frequency band(s).
 a. C-Band (4/6 GHz) b. Ku-Band (12/14 GHz)
 c. Other (Please specify upper and lower frequencies in MHz.)
 Frequency Lower: Frequency Upper:

TYPE OF STATION

25. CLASS OF STATION: Choose the button next to the class of station that applies. Choose only one.
 a. Fixed Earth Station
 b. Temporary-Fixed Earth Station
 c. 12/14 GHz VSAT Network
 d. Mobile Earth Station
 (N/A) e. Geostationary Space Station
 (N/A) f. Non-Geostationary Space Station
 g. Other (please specify) ESAA

26. TYPE OF EARTH STATION FACILITY: Choose only one.
 Transmit/Receive Transmit-Only Receive-Only N/A

PURPOSE OF MODIFICATION

27. The purpose of this proposed modification is to: (Place an 'X' in the box(es) next to all that apply.)
 Not Applicable

ENVIRONMENTAL POLICY

28. Would a Commission grant of any proposal in this application or amendment have a significant environmental impact as defined by 47 CFR 1.1307? If YES, submit the statement as required by Sections 1.1308 and 1.1311 of the Commission's rules, 47 C.F.R. §§ 1.1308 and 1.1311, as an exhibit to this application. A Radiation Hazard Study must accompany all applications for new transmitting facilities, major modifications, or major amendments. Yes No

ALIEN OWNERSHIP Earth station applicants not proposing to provide broadcast, common carrier, aeronautical en route or aeronautical fixed radio station services are not required to respond to Items 30-34.

29. Is the applicant a foreign government or the representative of any foreign government? Yes No

30. Is the applicant an alien or the representative of an alien? Yes No N/A

31. Is the applicant a corporation organized under the laws of any foreign government? Yes No N/A

32. Is the applicant a corporation of which more than one-fifth of the capital stock is owned of record or voted by aliens or their representatives or by a foreign government or representative thereof or by any corporation organized under the laws of a foreign country? Yes No N/A

33. Is the applicant a corporation directly or indirectly controlled by any other corporation of which more than one-fourth of the capital stock is owned of record or voted by aliens, their representatives, or by a

foreign government or representative thereof or by any corporation organized under the laws of a foreign country?

34. If any answer to questions 29, 30, 31, 32 and/or 33 is Yes, attach as an exhibit an identification of the aliens or foreign entities, their nationality, their relationship to the applicant, and the percentage of stock they own or vote.

BASIC QUALIFICATIONS

35. Does the Applicant request any waivers or exemptions from any of the Commission's Rules? Yes No
If Yes, attach as an exhibit, copies of the requests for waivers or exceptions with supporting documents.

36. Has the applicant or any party to this application or amendment had any FCC station authorization or license revoked or had any application for an initial, modification or renewal of FCC station authorization, license, or construction permit denied by the Commission? If Yes, attach as an exhibit, an explanation of circumstances. Yes No

37. Has the applicant, or any party to this application or amendment, or any party directly or indirectly controlling the applicant ever been convicted of a felony by any state or federal court? If Yes, attach as an exhibit, an explanation of circumstances. Yes No

38. Has any court finally adjudged the applicant, or any person directly or indirectly controlling the applicant, guilty of unlawfully monopolizing or attempting unlawfully to monopolize radio communication, directly or indirectly, through control of manufacture or sale of radio apparatus, exclusive traffic arrangement or any other means or unfair methods of competition? If Yes, attach as an exhibit, an explanation of circumstances. Yes No

39. Is the applicant, or any person directly or indirectly controlling the applicant, currently a party in any pending matter referred to in the preceding two items? If yes, attach as an exhibit, an explanation of the circumstances. Yes No

40. If the applicant is a corporation and is applying for a space station license, attach as an exhibit the names, address, and citizenship of those stockholders owning a record and/or voting 10 percent or more of the Filer's voting stock and the percentages so held. In the case of fiduciary control, indicate the beneficiary(ies) or class of beneficiaries. Also list the names and addresses of the officers and directors of the Filer.

41. By checking Yes, the undersigned certifies, that neither applicant nor any other party to the application is subject to a denial of Federal benefits that includes FCC benefits pursuant to Section 5301 of the Anti-Drug Act of 1988, 21 U.S.C. Section 862, because of a conviction for possession or distribution of a controlled substance. See 47 CFR 1.2002(b) for the meaning of "party to the application" for these purposes. Yes No

42a. Does the applicant intend to use a non-U.S. licensed satellite to provide service in the United States? If Yes, answer 42b and attach an exhibit providing the information specified in 47 C.F.R. 25.137, as appropriate. If No, proceed to question 43. Yes No

42b. What administration has licensed or is in the process of licensing the space station? If no license will be issued, what administration has coordinated or is in the process of coordinating the space station? France

43. Description. (Summarize the nature of the application and the services to be provided). 60-day STA to communicate with the EUTELSAT 172B, a replacement satellite for EUTELSAT 172A.

43a. Geographic Service Rule Certification
By selecting A, the undersigned certifies that the applicant is not subject to the geographic service or geographic coverage requirements specified in 47 C.F.R. Part 25. A
By selecting B, the undersigned certifies that the applicant is subject to the geographic service or geographic coverage requirements specified in 47 C.F.R. Part 25 and will comply with such requirements. B
By selecting C, the undersigned certifies that the applicant is subject to the geographic service or geographic coverage requirements specified in 47 C.F.R. Part 25 and will not comply with such requirements because it is not feasible as a technical matter to do so, or that, while technically feasible, such services would require so many compromises in satellite design and operation as to make it economically unreasonable. A narrative description and technical analysis demonstrating this claim are attached. C

CERTIFICATION

The Applicant waives 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, and requests an authorization in accordance with this application. The applicant certifies that grant of this application would not cause the applicant to be in violation of the spectrum aggregation limit in 47 CFR Part 20. All statements made in exhibits are a material part hereof and are incorporated herein as if set out in full in this application. The undersigned, individually and for the applicant, hereby certifies that all statements made in this application and in all attached exhibits are true, complete and correct to the best of his or her knowledge and belief, and are made in good faith.

44. Applicant is a (an): (Choose the button next to applicable response.)

- Individual
- Unincorporated Association
- Partnership
- Corporation
- Governmental Entity
- Other (please specify)

45. Name of Person Signing Mark DeFazio	46. Title of Person Signing Sr. Manager
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47. Please supply any need attachments.

Attachment 1:	Attachment 2:	Attachment 3:
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WILLFUL FALSE STATEMENTS MADE ON THIS FORM ARE PUNISHABLE BY FINE AND / OR IMPRISONMENT (U.S. Code, Title 18, Section 1001), AND/OR REVOCATION OF ANY STATION AUTHORIZATION (U.S. Code, Title 47, Section 312(a)(1)), AND/OR FORFEITURE (U.S. Code, Title 47, Section 503).

SATELLITE EARTH STATION AUTHORIZATIONS FCC Form 312 - Schedule B:(Technical and Operational Description)

FOR OFFICIAL USE ONLY

Location of Earth Station Site

E1. Site Identifier: PPA Remotes	E5. Call Sign: E100089
E2. Contact Name: MCC	E6. Phone Number: 1-425-415-9800
E3. Street: U.S. & international airspace	E7. City:
E4. State:	E8. County:
E10. Area of Operation:	E9. Zip Code: U.S. and international airspace
E11. Latitude: 0 ° 0 ' 0.0 "	
E12. Longitude: 0 ° 0 ' 0.0 "	
E13. Lat/Lon Coordinates are:	<input type="radio"/> NAD-27 <input type="radio"/> NAD-83 <input checked="" type="radio"/> N/A
E14. Site Elevation (AMSL):	0.0 meters

E15. If the proposed antenna(s) operate in the Fixed Satellite Service (FSS) with geostationary satellites, do(es) the proposed antenna(s) comply with the antenna gain patterns specified in Section 25.209(a) and (b) as demonstrated by the manufacturer's qualification measurement? If NO, provide a technical analysis showing compliance with two-degree spacing policy.	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> N/A
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E16. If the proposed antenna(s) do not operate in the Fixed Satellite Service (FSS), or if they operate in the Fixed Satellite Service (FSS) with non-geostationary satellites, do(es) the proposed antenna(s) comply with the antenna gain patterns specified in Section 25.209(a2) and (b) as demonstrated by the manufacturer's qualification measurements?	<input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> N/A
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E17. Is the facility operated by remote control? If YES, provide the location and telephone number of the control point.	<input checked="" type="radio"/> Yes <input type="radio"/> No
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E18. Is frequency coordination required? If YES, attach a frequency coordination report as	<input type="radio"/> Yes <input checked="" type="radio"/> No
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E19. Is coordination with another country required? If YES, attach the name of the country(ies) and plot of coordination contours as	<input type="radio"/> Yes <input checked="" type="radio"/> No
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E20. FAA Notification - (See 47 CFR Part 17 and 47 CFR part 25.113(c)) Where FAA notification is required, have you attached a copy of a completed FCC Form 854 and or the FAA's study regarding the potential hazard of the structure to aviation? FAILURE TO COMPLY WITH 47 CFR PARTS 17 AND 25 WILL RESULT IN THE RETURN OF THIS APPLICATION.	<input type="radio"/> Yes <input checked="" type="radio"/> No
-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------

POINTS OF COMMUNICATION

Satellite Name:OTHER OTHER If you selected OTHER, please enter the following:	
E21. Common Name: EUTELSAT 172B	E22. ITU Name: F-SAT-E-30B-172E
E23. Orbit Location: 172 E.L.	E24. Country: France

Satellite Name:OTHER OTHER If you selected OTHER, please enter the following:	
E21. Common Name: EUTELSAT 172B	E22. ITU Name:
E23. Orbit Location: 172 E.L.	E24. Country: USA

POINTS OF COMMUNICATION (Destination Points)

E25. Site Identifier: PPA Remotes	
E26. Common Name:	E27. Country:USA

POINTS OF COMMUNICATION (Destination Points)

E25. Site Identifier: PPA Remotes	
E26. Common Name:	E27. Country:USA

ANTENNA

Site ID	E28. Antenna Id	E29. Quantity	E30. Manufacturer	E31. Model	E32. Antenna Size	E41/42. Antenna GainTransmint and/or Recieve(____dBi at ____GHz)
PPA Remotes	PPA	2000	Panasonic	AURALE	0.89	35.7 dBi at 11.250
						37.0 dBi at 14.250

E28. Antenna Id	E33/34. Diameter Minor/Major(meters)	E35. Above Ground Level (meters)	E36. Above Sea Level (meters)	E37. Building Height Above Ground Level (meters)	E38. Total Input Power at antenna flange (Watts)	E39. Maximum Antenna Height Above Rooftop (meters)	E40. Total EIRP for al carriers (dBW)
PPA	0.0/0.0	0.0	0.0	0.0	16.0	0.0	48.0

FREQUENCY

E28. Antenna Id	E43/44. Frequency Bands(MHz)	E45. T/R Mode	E46. Antenna Polarization(H,V,L,R)	E47. Emission Designator	E48. Maximum EIRP per Carrier(dBW)	E49. Maximum EIRP Density per Carrier(dBW/4kHz)
PPA	10950 11200	R	Horizontal and Vertical	139MG7D	0.0	0.0
E50. Modulation and Services QPSK, 16APSK						
PPA	10950 11200	R	Horizontal and Vertical	1M05G7D	0.0	0.0
E50. Modulation and Services QPSK, 16APSK						
PPA	11200 11450	R	Horizontal and Vertical	139MG7D	0.0	0.0
E50. Modulation and Services QPSK, 16APSK						
PPA	11200 11450	R	Horizontal and Vertical	1M05G7D	0.0	0.0
E50. Modulation and Services QPSK, 16APSK						
PPA	11200 11450	R	Horizontal and Vertical	54M0G7D	0.0	0.0
E50. Modulation and Services QPSK, 16APSK						
PPA	11450 11700	R	Horizontal and Vertical	139MG7D	0.0	0.0
E50. Modulation and Services QPSK, 16APSK						
PPA	11450 11700	R	Horizontal and Vertical	1M05G7D	0.0	0.0
E50. Modulation and Services QPSK, 16APSK						
PPA	11450 11700	R	Horizontal and Vertical	54M0G7D	0.0	0.0
E50. Modulation and Services QPSK, 16APSK						
PPA	12200 12750	R	Horizontal and Vertical	139MG7D	0.0	0.0
E50. Modulation and Services QPSK, 16APSK						
PPA	12200 12750	R	Horizontal and Vertical	1M05G7D	0.0	0.0

E50. Modulation and Services QPSK, 16APSK						
PPA	12200 12750	R	Horizontal and Vertical	54M0G7D	0.0	0.0
E50. Modulation and Services QPSK, 16APSK						
PPA	14000 14500	T	Horizontal and Vertical	21M0G7D	48.0	11.59
E50. Modulation and Services QPSK						
PPA	14000 14500	T	Horizontal and Vertical	32K0G7D	48.0	38.96
E50. Modulation and Services QPSK						

FREQUENCY COORDINATION

E28. Antenna Id	E51. Satellite Orbit Type	E52/53. Frequency Limits(MHz)	E54/55. Range of Satellite Arc E/W Limit	E56. Earth Station Azimuth Angle Eastern Limit	E57. Antenna Elevation Angle Eastern Limit	E58. Earth Station Azimuth Angle Western Limit	E59. Antenna Elevation Angle Western Limit	E60. Maximum EIRP Density toward the Horizon(dBW/4kHz)
PPA	Geostationary	10950 11200	172.0/172.0	0.0	5.0	360.0	5.0	0.0
	Geostationary	11200 11450	172.0/172.0	0.0	5.0	360.0	5.0	0.0
	Geostationary	11450 11700	172.0/172.0	0.0	5.0	360.0	5.0	0.0
	Geostationary	12200 12750	172.0/172.0	0.0	5.0	360.0	5.0	0.0
	Geostationary	14000 14500	172.0/172.0	0.0	5.0	360.0	5.0	7.97

REMOTE CONTROL POINT LOCATION
REMOTE CONTROL POINT LOCATION

E61. Call Sign			E65. Phone Number			
NOTE: Please enter the callsign of the controlling station, not the callsign for which this application is being filed.			1-425-415-9800			
E62. Street Address						
MCC						
26200 Enterprise Way						
E63. City			E67. County		E64/68. State/Country	E66. Zip Code
Lake Forest			Orange		CA/ USA	92630

SATELLITE EARTH STATION AUTHORIZATIONS
FCC Form 312 - Schedule B:(Technical and Operational Description)

FOR OFFICIAL USE ONLY

Location of Earth Station Site			
E1: Site Identifier:	SPA Remotes	E5: Call Sign:	E100089
E2: Contact Name	MCC	E6: Phone Number:	1-425-415-9800
E3: Street:	U.S. & international airspace	E7: City:	
E4: State		E8: County:	
E10: Area of Operation:		E9: Zip Code	
E11: Latitude:	0 ° 0 ' 0.0 "	U.S. and international airspace	
E12: Longitude:	0 ° 0 ' 0.0 "		

E13. Lat/Lon Coordinates are:	<input type="radio"/> NAD-27	<input type="radio"/> NAD-83	<input checked="" type="radio"/> N/A
E14. Site Elevation (AMSL):	0.0 meters		
E15. If the proposed antenna(s) operate in the Fixed Satellite Service (FSS) with geostationary satellites, do(es) the proposed antenna(s) comply with the antenna gain patterns specified in Section 25.209(a) and (b) as demonstrated by the manufacturer's qualification measurement? If NO, provide a technical analysis showing compliance with two-degree spacing policy.	<input type="radio"/> Yes	<input checked="" type="radio"/> No	<input type="radio"/> N/A
E16. If the proposed antenna(s) do not operate in the Fixed Satellite Service (FSS), or if they operate in the Fixed Satellite Service (FSS) with non-geostationary satellites, do(es) the proposed antenna(s) comply with the antenna gain patterns specified in Section 25.209(a2) and (b) as demonstrated by the manufacturer's qualification measurements?	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> N/A
E17. Is the facility operated by remote control? If YES, provide the location and telephone number of the control point.	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
E18. Is frequency coordination required? If YES, attach a frequency coordination report as	<input type="radio"/> Yes	<input checked="" type="radio"/> No	
E19. Is coordination with another country required? If YES, attach the name of the country(ies) and plot of coordination contours as	<input type="radio"/> Yes	<input checked="" type="radio"/> No	
E20. FAA Notification - (See 47 CFR Part 17 and 47 CFR part 25.113(c)) Where FAA notification is required, have you attached a copy of a completed FCC Form 854 and or the FAA's study regarding the potential hazard of the structure to aviation? FAILURE TO COMPLY WITH 47 CFR PARTS 17 AND 25 WILL RESULT IN THE RETURN OF THIS APPLICATION.	<input type="radio"/> Yes	<input checked="" type="radio"/> No	

POINTS OF COMMUNICATION

Satellite Name: OTHER OTHER If you selected OTHER, please enter the following:	
E21. Common Name: EUTELSAT 172B	E22. ITU Name:
E23. Orbit Location: 172 E.L.	E24. Country: USA
Satellite Name: OTHER OTHER If you selected OTHER, please enter the following:	
E21. Common Name: EUTELSAT 172B	E22. ITU Name: F-SAT-E-30B-172E
E23. Orbit Location: 172 E.L.	E24. Country: France

POINTS OF COMMUNICATION (Destination Points)

E25. Site Identifier: SPA Remotes	
E26. Common Name:	E27. Country: USA

POINTS OF COMMUNICATION (Destination Points)

E25. Site Identifier: SPA Remotes	
E26. Common Name:	E27. Country: USA

ANTENNA

Site ID	E28. Antenna Id	E29. Quantity	E30. Manufacturer	E31. Model	E32. Antenna Size	E41/42. Antenna Gain Transmint and/or Recieve(____ dBi at ____ GHz)		
SPA Remotes	SPA	1000	Panasonic	SPA	0.949	35.0 dBi at 14.250		
E28. Antenna Id	E33/34. Diameter Minor/Major(meters)		E35. Above Ground Level (meters)	E36. Above Sea Level (meters)	E37. Building Height Above Ground Level (meters)	E38. Total Input Power at antenna flange (Watts)	E39. Maximum Antenna Height Above Rooftop (meters)	E40. Total EIRP for al carriers (dBW)
SPA	0.0/0.0		0.0	0.0	0.0	10.0	0.0	45.0

FREQUENCY

E28. Antenna Id	E43/44. Frequency Bands(MHz)	E45. T/R Mode	E46. Antenna Polarization(H,V,L,R)	E47. Emission Designator	E48. Maximum EIRP per Carrier(dBW)	E49. Maximum ERIP Density per Carrier(dBW/4kHz)
SPA	10950 11200	R	Horizontal and Vertical	139MG7D	0.0	0.0

E50. Modulation and Services QPSK, 16APSK

SPA	10950 11200	R	Horizontal and Vertical	1M05G7D	0.0	0.0
E50. Modulation and Services QPSK, 16APSK						
SPA	11200 11450	R	Horizontal and Vertical	139MG7D	0.0	0.0
E50. Modulation and Services QPSK, 16APSK						
SPA	11200 11450	R	Horizontal and Vertical	1M05G7D	0.0	0.0
E50. Modulation and Services QPSK, 16APSK						
SPA	11200 11450	R	Horizontal and Vertical	54M0G7D	0.0	0.0
E50. Modulation and Services QPSK, 16APSK						
SPA	11450 11700	R	Horizontal and Vertical	139MG7D	0.0	0.0
E50. Modulation and Services QPSK, 16APSK						
SPA	11450 11700	R	Horizontal and Vertical	1M05G7D	0.0	0.0
E50. Modulation and Services QPSK, 16APSK						
SPA	12200 12750	R	Horizontal and Vertical	139MG7D	0.0	0.0
E50. Modulation and Services QPSK, 16APSK						
SPA	12200 12750	R	Horizontal and Vertical	1M05G7D	0.0	0.0
E50. Modulation and Services QPSK, 16APSK						
SPA	12200 12750	R	Horizontal and Vertical	54M0G7D	0.0	0.0
E50. Modulation and Services QPSK, 16APSK						
SPA	14000 14500	T	Horizontal and Vertical	21M0G7D	45.0	8.59
E50. Modulation and Services QPSK						
SPA	14000 14500	T	Horizontal and Vertical	32K0G7D	45.0	35.96
E50. Modulation and Services QPSK						

FREQUENCY COORDINATION

E28. Antenna Id	E51. Satellite Orbit Type	E52/53. Frequency Limits(MHz)	E54/55. Range of Satellite Arc E/W Limit	E56. Earth Station Azimuth Angle Eastern Limit	E57. Antenna Elevation Angle Eastern Limit	E58. Earth Station Azimuth Angle Western Limit	E59. Antenna Elevation Angle Western Limit	E60. Maximum EIRP Density toward the Horizon(dBW/4kHz)
SPA	Geostationary	10950 11200	172.0/172.0	0.0	5.0	360.0	5.0	0.0
	Geostationary	11200 11450	172.0/172.0	0.0	5.0	360.0	5.0	0.0
	Geostationary	11450 11700	172.0/172.0	0.0	5.0	360.0	5.0	0.0
	Geostationary	12200 12750	172.0/172.0	0.0	5.0	360.0	5.0	0.0
	Geostationary	14000 14500	172.0/172.0	0.0	5.0	360.0	5.0	3.29

**REMOTE CONTROL POINT LOCATION
REMOTE CONTROL POINT LOCATION**

E61. Call Sign NOTE: Please enter the callsign of the controlling station, not the callsign for which this application is being filed.			E65. Phone Number 1-425-415-9800	
E62. Street Address MCC 26200 Enterprise Way				
E63. City Lake Forest		E67. County Orange		E64/68. State/Country CA/ USA
			E66. Zip Code 92630	

SATELLITE EARTH STATION AUTHORIZATIONS FCC Form 312 - Schedule B:(Technical and Operational Description)

FOR OFFICIAL USE ONLY

Location of Earth Station Site

E1. Site Identifier:	TECOM Remotes	E5. Call Sign:	E100089
E2. Contact Name	MCC	E6. Phone Number:	1-425-415-9800
E3. Street:	U.S. & international airspace	E7. City:	
E4. State		E8. County:	
E10. Area of Operation:		E9. Zip Code	U.S. and international airspace
E11. Latitude:	0 ° 0 ' 0.0 "		
E12. Longitude:	0 ° 0 ' 0.0 "		
E13. Lat/Lon Coordinates are:	<input type="radio"/> NAD-27	<input type="radio"/> NAD-83	<input checked="" type="radio"/> N/A
E14. Site Elevation (AMSL):	0.0 meters		

E15. If the proposed antenna(s) operate in the Fixed Satellite Service (FSS) with geostationary satellites, do(es) the proposed antenna(s) comply with the antenna gain patterns specified in Section 25.209(a) and (b) as demonstrated by the manufacturer's qualification measurement? If NO, provide a technical analysis showing compliance with two-degree spacing policy.	<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> N/A
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E16. If the proposed antenna(s) do not operate in the Fixed Satellite Service (FSS), or if they operate in the Fixed Satellite Service (FSS) with non-geostationary satellites, do(es) the proposed antenna(s) comply with the antenna gain patterns specified in Section 25.209(a2) and (b) as demonstrated by the manufacturer's qualification measurements?	<input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> N/A
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E17. Is the facility operated by remote control? If YES, provide the location and telephone number of the control point.	<input checked="" type="radio"/> Yes <input type="radio"/> No
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E18. Is frequency coordination required? If YES, attach a frequency coordination report as	<input type="radio"/> Yes <input checked="" type="radio"/> No
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E19. Is coordination with another country required? If YES, attach the name of the country(ies) and plot of coordination contours as	<input type="radio"/> Yes <input checked="" type="radio"/> No
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E20. FAA Notification - (See 47 CFR Part 17 and 47 CFR part 25.113(c)) Where FAA notification is required, have you attached a copy of a completed FCC Form 854 and or the FAA's study regarding the potential hazard of the structure to aviation? FAILURE TO COMPLY WITH 47 CFR PARTS 17 AND 25 WILL RESULT IN THE RETURN OF THIS APPLICATION.	<input type="radio"/> Yes <input checked="" type="radio"/> No
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POINTS OF COMMUNICATION

Satellite Name:OTHER OTHER If you selected OTHER, please enter the following:	
E21. Common Name: EUTELSAT 172B	E22. ITU Name: F-SAT-E-30B-172E
E23. Orbit Location: 172 E.L.	E24. Country: France

Satellite Name:OTHER OTHER If you selected OTHER, please enter the following:	
E21. Common Name: EUTELSAT 172B	E22. ITU Name:
E23. Orbit Location: 172 E.L.	E24. Country: USA

POINTS OF COMMUNICATION (Destination Points)

E25. Site Identifier: TECOM Remotes	
E26. Common Name:	E27. Country:USA

POINTS OF COMMUNICATION (Destination Points)

E25. Site Identifier: TECOM Remotes	
E26. Common Name:	E27. Country:USA

ANTENNA

Site ID	E28. Antenna Id	E29. Quantity	E30. Manufacturer	E31. Model	E32. Antenna Size	E41/42. Antenna GainTransmint and/or Recieve(____dBi at ____GHz)
TECOM Remotes	TECOM	1000	TECOM	Ku-Stream 1000	0.62	28.8 dBi at 14.250
						31.1 dBi at 11.750

E28. Antenna Id	E33/34. Diameter Minor/Major(meters)	E35. Above Ground Level (meters)	E36. Above Sea Level (meters)	E37. Building Height Above Ground Level (meters)	E38. Total Input Power at antenna flange (Watts)	E39. Maximum Antenna Height Above Rooftop (meters)	E40. Total EIRP for al carriers (dBW)
TECOM	0.0/0.0	0.0	0.0	0.0	31.6	0.0	43.8

FREQUENCY

E28. Antenna Id	E43/44. Frequency Bands(MHz)	E45. T/R Mode	E46. Antenna Polarization(H,V,L,R)	E47. Emission Designator	E48. Maximum EIRP per Carrier(dBW)	E49. Maximum EIRP Density per Carrier(dBW/4kHz)
TECOM	10950 11200	R	Horizontal and Vertical	139MG7D	0.0	0.0
E50. Modulation and Services QPSK, 16APSK						
TECOM	10950 11200	R	Horizontal and Vertical	1M05G7D	0.0	0.0
E50. Modulation and Services QPSK, 16APSK						
TECOM	11200 11450	R	Horizontal and Vertical	139MG7D	0.0	0.0
E50. Modulation and Services QPSK, 16APSK						
TECOM	11200 11450	R	Horizontal and Vertical	1M05G7D	0.0	0.0
E50. Modulation and Services QPSK, 16APSK						
TECOM	11200 11450	R	Horizontal and Vertical	54M0G7D	0.0	0.0
E50. Modulation and Services QPSK, 16APSK						
TECOM	11450 11700	R	Horizontal and Vertical	139MG7D	0.0	0.0
E50. Modulation and Services QPSK, 16APSK						
TECOM	11450 11700	R	Horizontal and Vertical	1M05G7D	0.0	0.0
E50. Modulation and Services QPSK, 16APSK						
TECOM	12200 12750	R	Horizontal and Vertical	139MG7D	0.0	0.0
E50. Modulation and Services QPSK, 16APSK						
TECOM	12200 12750	R	Horizontal and Vertical	1M05G7D	0.0	0.0
E50. Modulation and Services QPSK, 16APSK						
TECOM	12200 12750	R	Horizontal and Vertical	54M0G7D	0.0	0.0
E50. Modulation and Services QPSK, 16APSK						
TECOM	14000 14500	T	Horizontal and Vertical	21M0G7D	43.8	7.39
E50. Modulation and Services QPSK						
TECOM	14000 14500	T	Horizontal and Vertical	32K0G7D	43.8	34.8
E50. Modulation and Services QPSK						

FREQUENCY COORDINATION

E28. Antenna Id	E51. Satellite Orbit Type	E52/53. Frequency Limits(MHz)	E54/55. Range of Satellite Arc E/W Limit	E56. Earth Station Azimuth Angle Eastern Limit	E57. Antenna Elevation Angle Eastern Limit	E58. Earth Station Azimuth Angle Western Limit	E59. Antenna Elevation Angle Western Limit	E60. Maximum EIRP Density toward the Horizon(dBW/4kHz)
TECOM	Geostationary	10950 11200	172.0/	0.0	5.0	360.0	5.0	0.0

			172.0					
	Geostationary	11200 11450	172.0/ 172.0	0.0	5.0	360.0	5.0	0.0
	Geostationary	11450 11700	172.0/ 172.0	0.0	5.0	360.0	5.0	0.0
	Geostationary	12200 12750	172.0/ 172.0	0.0	5.0	360.0	5.0	0.0
	Geostationary	14000 14500	172.0/ 172.0	0.0	5.0	360.0	5.0	-0.7

REMOTE CONTROL POINT LOCATION
REMOTE CONTROL POINT LOCATION

E61. Call Sign NOTE: Please enter the callsign of the controlling station, not the callsign for which this application is being filed.		E65. Phone Number 1-425-415-9800	
E62. Street Address MCC 26200 Enterprise Way			
E63. City Lake Forest		E67. County Orange	E64/68. State/Country CA/ USA
			E66. Zip Code 92630

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