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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:

Comtech Mobile Datacom Corp — CONUS plus ADSR

1-	8. 1	Legal	Name	of App	licant
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Name: COMTECH MOBILE Phone Number: 240–686–3300

DATACOM CORP.

DBA Fax Number: 240–686–3301

Name:

Street: 20430 Century Boulevard E–Mail: david.ulanow@comtechmobile.

com

City: Germantown State: MD

Country: USA Zipcode: 20874 –

Attention: Mr David A Ulanow

9–16. Name of Contact Representative

Name: Joan Griffin Phone Number: 202–342–8573

Company: Kelley Drye & Warren LLP Fax Number: 202–342–8451

Street: 3050 K Street, NW E-Mail: jgriffin@kelleydrye.com

Suite 400

City: Washington State: DC

Country: USA Zipcode: 20007–

Attention: Relationship: Legal Counsel

CLASSIFICATION OF FILING

17. Choose the button next to the	b.
classification that applies to this filing for	b1. Application for License of New Station
both questions a. and b. Choose only one	b2. Application for Registration of New Domestic Receive–Only Station
for 17a and only one for 17b.	(N/A) b3. Amendment to a Pending Application
	(N/A) b4. Modification of License or Registration
a. a1. Earth Station	(N/A) b5. Assignment of License or Registration
-	(N/A) b6. Transfer of Control of License or Registration
(N/A) a2. Space Station	(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
	o b10. Other (Please specify)
	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.
	o b12. Application for Database Entry
	(N/A) b13. Amendment to a Pending Database Entry Application
	(N/A) b14. Modifiction of Database Entry
17c. Is a fee submitted with this application	on?
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 Noncomme	ercial educational licensee
Other(please explain):	
17d.	
Fee Classification BGB – Mobile Satellite	Earth Stations Blanket
Authorization	

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:	(a) Date pending application was filed:	(b) File number of pending application:		
Not Applicable	Not Applicable	Not Applicable		

TYPE OF SERVICE	
20. NATURE OF SERVICE: This filing is for an authorization to provide of	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)	
only one. Common Carrier Non–Common Carrier	2. 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 ser facilities: Connected to a Public Switched Network Not connected to	vice, see instructions regarding Sec. 214 filings. Choose one. Are these 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: 99999999 Frequency Upper: 999999999 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) 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	
C.Other (Please specify upper and lower frequencies in MHz.) Frequency Lower: 99999999 Frequency Upper: 99999999 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. d. Mobile Earth Station (N/A) e. Geostationary Space Station (N/A) f. Non-Geostationary Space Station g. Other (please specify) 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.)	24. FREQUENCY BAND(S): Place an "X" in the box(es) next to all applicable frequency band(s).
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(N/A) e. Geostationary Space Station (N/A) f. Non–Geostationary Space Station g. Other (please specify) 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.)	d. Mobile Earth Station
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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.)	
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27. The purpose of this proposed modification is to: (Place an 'X' in the box(es) next to all that apply.)	
	PURPOSE OF MODIFICATION
Not Applicable	27. The purpose of this proposed modification is to: (Place an 'X' in the box(es) next to all that apply.)
Not Applicable	
	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 No Exhibit B (Q 28)
ALIEN OWNERSHIP Earth station applicants not proposing to provide broadcast, common carrier, aerona aeronautical fixed radio station services are not required to respond to Items 30–34.	utical en route or
29. Is the applicant a foreign government or the representative of any foreign government?	O Yes O No
30. Is the applicant an alien or the representative of an alien?	O Yes O No O N/A
31. Is the applicant a corporation organized under the laws of any foreign government?	O Yes ⊗ No O 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?	O Yes O No O 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?	O Yes ● N	To O N/A
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? If Yes, attach as an exhibit, copies of the requests for waivers or exceptions with supporting documents.	○ Yes	No
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 explination 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 explination of circumstances.	O 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	O 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 exhinit, an explanation of the circumstances.	O 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	O 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	O No
	Exhibit C (Q 4	-2a)
42b. What administration has licensed or is in the process of licensing the space station? If no license will be issued coordinated or is in the process of coordinating the space station? United Kingdom (ISAT) & Canada (MSV)	, what administi	ration has
43. Description. (Summarize the nature of the application and the services to be provided). (If the not appear in this box, please go to the end of the form to view it in its entirety.)	e complete desc	ription does
See Exhibit A.		

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.	O 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.	o 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.

o Individual				
Unincorporated Association				
Partnership				
Corporation				
Governmental Entity				
Other (please specify)				
45. Name of Person Signing Greg Handermann		46. Title of Person Signing Chief Technology Officer		
47. Please supply any need attachments.				_
47. Please supply any need attachments. Attachment 1: Exhibit A (Q 24/43)	Attachment 2:	Attac	hment 3:	

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: ISAT — CONUS E5. Call Sign:

E2: Contact Name Greg Handermann E6. Phone 240–6986–3300

Number:

E3. Street: 20430 Century E7. City: Germantown

Boulevard

E8. County: Montgomery

E4. State MD E9. Zip Code 20874

E10. Area of Operation: CONUS

E11. Latitude: 0 °0 '0.0 "

E12. Longitude: 0 °0 '0.0 "

E13. Lat/Lon Coordinates are: NAD-27 NAD-83 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 as a technical analysis showing compliance with two–degree spacing policy.	O Yes	s O No	● 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?	O Yes	s O No	● N/A
E17. Is the facility operated by remote control? If YES, provide the location and telephone number of the control point.	● Ye	es O	, No
E18. Is frequency coordination required? If YES, attach a frequency coordination report as	O Ye	es 💿	. No
E19. Is coordination with another country required? If YES, attach the name of the country(ies) and plot of coordination contours as	O Ye	es 💿	, 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.	O Ye	es 💿	. No
POINTS OF COMMUNICATION			
Satellite Name:ISAT List ISAT List If you selected OTHER, please enter the following:			

E21. Common Name:	E22. ITU Name:
E23. Orbit Location:	E24. Country:

POINTS OF COMMUNICATION (Destination Points)

E25. Site Identifier:	
E26. Common Name:	E27. Country:

ANTENNA

Site ID	E28. Antenna Id	E29. Quantity	E30. Manufacturer	E31. Model	E32. Antenna Size <meters></meters>	E41/42. Antenna GainTransmint and/or Recieve (dBi atGHz)
ISAT CONUS	1-2010/INT	0	SCI Systems	MT-2010 internal	0.15	2.9 dBi at 1.545
						2.9 dBi at 1.645
	2-2010/EXT		Sensor Systems	S65-8582-101		4.3 dBi at 1.545
						4.8 dBi at 1.645
	2-2011/EXT					4.3 dBi at 1.545
						4.8 dBi at 1.645
	3-2010		SCI Systems	MT-2010 external	0.06	4.0 dBi at 1.545
						4.0 dBi at 1.645
	4–2010/INT			MT-2010 rl internal	0.15	5.0 dBi at 1.545
						5.0 dBi at 1.645
	5-203/EXT		Sensor Systems	S65-8282-301	0.27	3.5 dBi at 1.545
						3.9 dBi at 1.645
	5-2011/EXT					3.5 dBi at 1.545

				3.9 dBi at 1.645
5–2012				3.5 dBi at 1.545
				3.9 dBi at 1.645
6-2011/INT	PCTel	3481IZ-3	0.18	3.7 dBi at 1.545
				3.7 dBi at 1.645
6-2012/INT				3.7 dBi at 1.545
				3.7 dBi at 1.645
6-203/INT				3.7 dBi at 1.545
				3.7 dBi at 1.645
7–2011/INT		3491IZ-3		6.0 dBi at 1.545
				6.0 dBi at 1.645
7–2012/INT				6.0 dBi at 1.545
				6.0 dBi at 1.645
8-203/EXT		3561AW-1/A	0.19	3.7 dBi at 1.545
				3.7 dBi at 1.645
11-C50/INT		CMT-500	0.1524	4.5 dBi at 1.545
				4.5 dBi at 1.645

E28. Antenna Id	E33/34. Diameter Minor/Major (meters)	E35. Above Ground Level (meters)	E36. Above Sea Level (meters)	Height Above Ground	Input Power at antenna flange 		E40. Total EIRP for al carriers (dBW)
1-2010/INT	0.15/0.15	0.0	0.0	0.0	5.3	0.0	10.2

2-2010/EXT	0.15/0.15	0.0	0.0	0.0	5.3	0.0	12.1
2-2011/EXT	0.15/0.15	0.0	0.0	0.0	5.3	0.0	12.1
3-2010	0.06/0.06	0.0	0.0	0.0	5.3	0.0	11.3
4-2010/INT	0.15/0.15	0.0	0.0	0.0	5.3	0.0	12.3
5-203/EXT	0.27/0.27	0.0	0.0	0.0	5.3	0.0	11.2
DELETE	0.0/0.0	0.0	0.0	0.0	0.0	0.0	0.0
5-2011/EXT	0.27/0.27	0.0	0.0	0.0	5.3	0.0	11.2
5-2012	0.27/0.27	0.0	0.0	0.0	5.3	0.0	11.2
6-2011/INT	0.18/0.18	0.0	0.0	0.0	5.3	0.0	11.0
6-2012/INT	0.18/0.18	0.0	0.0	0.0	5.3	0.0	11.0
6-203/INT	0.18/0.18	0.0	0.0	0.0	5.3	0.0	11.0
7-2011/INT	0.18/0.18	0.0	0.0	0.0	5.3	0.0	13.3
7-2012/INT	0.18/0.18	0.0	0.0	0.0	5.3	0.0	13.3
8-203/EXT	0.19/0.19	0.0	0.0	0.0	5.3	0.0	11.0
11-C50/INT	0.1524/0.1524	0.0	0.0	0.0	5.3	0.0	10.0

FREQUENCY

	E43/44. Frequency Bands (MHz)	E45. T/R Mode			E48. Maximum EIRP per Carrier (dBW)	E49. Maximum ERIP Density per Carrier (dBW/4kHz)
1-2010/INT	1530.0 1544.0	R	Right Hand Circular	200KG7W	0.0	0.0

E50. Modulation entirety.)	and Services (If the	e complete description	on does not appear in	this box, please go to	the end of the form	to view it in its			
DSSS, BPSK,	21, 094 to 84	,375 CPS, Data	, Marine & Lan	d Mobile					
1-2010/INT	1545.0 1559.0	R	Right Hand Circular	200KG7W	0.0	0.0			
entirety.)	E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.) DSSS,BPSK, 21, 094 to 84,375 CPS, Data, Marine & Land Mobile								
1-2010/INT	1631.5 1645.5	Т	Right Hand Circular	200KG7W	10.2	4.4			
E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.) DSSS,BPSK, 21, 094 to 84,375 CPS, Data, Marine & Land Mobile									
1–2010/INT	1646.5 1660.5	Т	Right Hand Circular	200KG7W	10.2	4.4			

E50. Modulation entirety.)	and Services (If the	e complete description	on does not appear in	this box, please go to	o the end of the form	to view it in its			
DSSS,BPSK,	21, 094 to 84	,375 CPS, Data	, Marine & Lan	d Mobile					
2-2010/EXT	1530.0 1544.0	R	Right Hand Circular	200KG7W	0.0	0.0			
E50. Modulation entirety.)	and Services (If the	e complete description	on does not appear in	this box, please go to	o the end of the form	to view it in its			
DSSS,BPSK,	21,094 to 84,	375 CPS, Data,	Aeronautical						
2-2010/EXT	1545.0 1559.0	R	Right Hand Circular	200KG7W	0.0	0.0			
E50. Modulation entirety.)	and Services (If the	e complete description	on does not appear in	this box, please go to	o the end of the form	to view it in its			
DSSS,BPSK, 21,094 to 84,375 CPS, Data, Aeronautical									
2-2010/EXT	1631.5 1645.5	Т	Right Hand Circular	200KG7W	12.1	6.3			

E50. Modulation entirety.)	and Services (If the	e complete description	on does not appear in	this box, please go to	o the end of the form	to view it in its				
DSSS,BPSK,	21,094 to 84,	375 CPS, Data,	Aeronautical							
2-2010/EXT	1646.5 1660.5	Т	Right Hand Circular	200KG7W	12.1	6.3				
entirety.)	E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.) DSSS,BPSK, 21,094 to 84,375 CPS, Data, Aeronautical									
2–2011/EXT	1530.0 1544.0	R	Right Hand Circular	200KG7W	0.0	0.0				
E50. Modulation entirety.)	and Services (If the	e complete description	on does not appear in	this box, please go to	o the end of the form	to view it in its				
DSSS, BPSK,	21,094 to 84,	375 CPS, Data,	Aeronautical							
2-2011/EXT	1545.0 1559.0	R	Right Hand Circular	200KG7W	0.0	0.0				

E50. Modulation entirety.)	and Services (If the	e complete description	on does not appear in	this box, please go to	the end of the form	to view it in its			
	21,094 to 84,	375 CPS, Data,	Aeronautical						
2-2011/EXT	1631.5 1645.5	Т	Right Hand Circular	200KG7W	12.1	6.3			
entirety.)	E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.) DSSS,BPSK, 21,094 to 84,375 CPS, Data, Aeronautical								
2-2011/EXT	1646.5 1660.5	Т	Right Hand Circular	200KG7W	12.1	6.3			
E50. Modulation entirety.)	and Services (If th	e complete description	on does not appear in	this box, please go to	the end of the form	to view it in its			
DSSS,BPSK, 21,094 to 84,375 CPS, Data, Aeronautical									
3–2010	1530.0 1544.0	R	Right Hand Circular	200KG7W	0.0	0.0			

E50. Modulation entirety.)	and Services (If the	ne complete descripti	on does not appear in	this box, please go t	o the end of the form	to view it in its
DSSS, BPSK,	21, 094 to 84	.,375 CPS, Data	, Marine & Lar	nd Mobile		
3–2010	1545.0 1559.0	R	Right Hand Circular	200KG7W	0.0	0.0
E50. Modulation entirety.)	and Services (If the	ne complete descripti	on does not appear in	this box, please go t	o the end of the form	to view it in its
DSSS, BPSK,	21, 094 to 84	.,375 CPS, Data	, Marine & Lar	nd Mobile		
3–2010	1631.5 1645.5	Т	Right Hand Circular	200KG7W	11.3	5.5
E50. Modulation entirety.)	and Services (If the	ne complete descripti	on does not appear in	this box, please go t	o the end of the form	to view it in its
DSSS, BPSK,	21, 094 to 84	:,375 CPS, Data	, Marine & Lar	nd Mobile		
3–2010	1646.5 1660.5	Т	Right Hand Circular	200KG7W	11.3	5.5

E50. Modulation entirety.)	and Services (If the	ne complete description	on does not appear in	this box, please go t	o the end of the form	to view it in its	
DSSS,BPSK,	21, 094 to 84	,375 CPS, Data	., Marine & Lan	d Mobile			
4–2010/INT	1530.0 1544.0	R	Right Hand Circular	200KG7W	0.0	0.0	
E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.) DSSS,BPSK, 21, 094 to 84,375 CPS, Data, Marine & Land Mobile							
4–2010/INT	1545.0 1559.0	R	Right Hand Circular	200KG7W	0.0	0.0	
E50. Modulation entirety.)					o the end of the form	to view it in its	
DSSS,BPSK, 21, 094 to 84,375 CPS, Data, Marine & Land Mobile							
4–2010/INT	1631.5 1645.5	Т	Right Hand Circular	200KG7W	12.3	6.5	

E50. Modulation entirety.)	and Services (If the	ne complete description	on does not appear in	this box, please go to	o the end of the form	to view it in its	
DSSS, BPSK,	21, 094 to 84	,375 CPS, Data	, Marine & Lan	d Mobile			
4–2010/INT	1646.5 1660.5	Т	Right Hand Circular	200KG7W	12.3	6.5	
E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.) DSSS,BPSK, 21, 094 to 84,375 CPS, Data, Marine & Land Mobile							
5–203/EXT	1530 1544	R	Right Hand Circular	200KG7W	0.0	0.0	
E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.) DSSS, BPSK, 21,094 to 84,375 CPS, Data, Aeronautical							
DSSS, BPSK,	21,094 (0 64,	375 CPS, Data,	Aeronaucicai				
5-203/EXT	1545 1559	R	Right Hand Circular	200KG7W	0.0	0.0	

E50. Modulation entirety.)	and Services (If the	e complete description	on does not appear in	this box, please go to	o the end of the form	to view it in its	
DSSS, BPSK,	21,094 to 84,	375 CPS, Data,	Aeronautical				
5-203/EXT	1631.5 1645.5	Т	Right Hand Circular	200KG7W	11.2	5.4	
E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.) DSSS,BPSK, 21,094 to 84,375 CPS, Data, Aeronautical							
5–203/EXT	1646.5 1660.5	Т	Right Hand Circular	200KG7W	11.2	5.4	
E50. Modulation entirety.)	and Services (If the	ne complete description	on does not appear in	this box, please go to	o the end of the form	to view it in its	
DSSS, BPSK,	21,094 to 84,	375 CPS, Data,	Aeronautical				
5-2011/EXT	1530 1544	R	Right Hand Circular	200KG7W	0.0	0.0	

E50. Modulation entirety.)	and Services (If the	e complete description	on does not appear in	this box, please go to	o the end of the form	to view it in its	
	21,094 to 84,	375 CPS, Data,	Aeronautical				
5-2011/EXT	1545 1559	R	Right Hand Circular	200KG7W	0.0	0.0	
E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.) DSSS,BPSK, 21,094 to 84,375 CPS, Data, Aeronautical							
5-2011/EXT	1631.5 1645.5	Т	Right Hand Circular	200KG7W	11.2	5.4	
E50. Modulation entirety.)	and Services (If th	e complete description	on does not appear in	this box, please go to	the end of the form	to view it in its	
DSSS,BPSK, 21,094 to 84,375 CPS, Data, Aeronautical							
5-2011/EXT	1646.5 1660.5	Т	Right Hand Circular	200KG7W	11.2	5.4	

E50. Modulation entirety.)	and Services (If the	ne complete description	on does not appear in	this box, please go to	o the end of the form	to view it in its	
DSSS, BPSK,	21,094 to 84,	375 CPS, Data,	Aeronautical				
5-2012	1530 1544	R	Right Hand Circular	200KG7W	0.0	0.0	
E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.) DSSS,BPSK, 21,094 to 84,375 CPS, Data, Aeronautical							
5–2012	1545 1559	R	Right Hand Circular	200KG7W	0.0	0.0	
E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.) DSSS,BPSK, 21,094 to 84,375 CPS, Data, Aeronautical							
5-2012	1631.5 1645.5	Т	Right Hand Circular	200KG7W	11.2	5.4	

E50. Modulation entirety.)	and Services (If the	ne complete description	on does not appear in	this box, please go t	o the end of the form	to view it in its	
	21,094 to 84,	375 CPS, Data,	Aeronautical				
5-2012	1646.5 1660.5	Т	Right Hand Circular	200KG7W	11.2	5.4	
E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.) DSSS,BPSK, 21,094 to 84,375 CPS, Data, Aeronautical							
6–2011/INT	1530 1544	R	Right Hand Circular	200KG7W	0.0	0.0	
E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.) DSSS,BPSK, 21, 094 to 84,375 CPS, Data, Marine & Land Mobile							
6–2011/INT	1545 1559	R	Right Hand Circular	200KG7W	0.0	0.0	

E50. Modulation entirety.)	and Services (If the	ne complete description	on does not appear in	this box, please go to	o the end of the form	to view it in its	
DSSS,BPSK,	21, 094 to 84	,375 CPS, Data	., Marine & Lan	d Mobile			
6-2011/INT	1631.5 1645.5	Т	Right Hand Circular	200KG7W	11.0	5.2	
E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.) DSSS,BPSK, 21, 094 to 84,375 CPS, Data, Marine & Land Mobile							
6–2011/INT	1646.5 1660.5	Т	Right Hand Circular	200KG7W	11.0	5.2	
E50. Modulation entirety.)	and Services (If the	ne complete description	on does not appear in	this box, please go to	o the end of the form	to view it in its	
DSSS,BPSK, 21, 094 to 84,375 CPS, Data, Marine & Land Mobile							
6–2012/INT	1530 1544	R	Right Hand Circular	200KG7W	0.0	0.0	

E50. Modulation entirety.)	and Services (If the	ne complete description	on does not appear in	this box, please go t	o the end of the form	to view it in its
DSSS,BPSK,	21, 094 to 84	,375 CPS, Data	, Marine & Lan	d Mobile		
6-2012/INT	1545 1559	R	Right Hand Circular	200KG7W	0.0	0.0
E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.) DSSS,BPSK, 21, 094 to 84,375 CPS, Data, Marine & Land Mobile						
6-2012/INT	1631.5 1645.5	Т	Right Hand Circular	200KG7W	11.0	5.2
E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.) DSSS,BPSK, 21, 094 to 84,375 CPS, Data, Marine & Land Mobile						
6-2012/INT	1646.5 1660.5	Т	Right Hand Circular	200KG7W	11.0	5.2

E50. Modulation entirety.)	and Services (If t	he complete description	on does not appear in	this box, please go t	to the end of the form	to view it in its	
DSSS,BPSK,	21, 094 to 84	1,375 CPS, Data	, Marine & Lar	nd Mobile			
6-203/INT	1530 1544	R	Right Hand Circular	200KG7W	0.0	0.0	
E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.) DSSS,BPSK, 21, 094 to 84,375 CPS, Data, Marine & Land Mobile							
6-203/INT	1545 1559	R	Right Hand Circular	200KG7W	0.0	0.0	
E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.) DSSS,BPSK, 21, 094 to 84,375 CPS, Data, Marine & Land Mobile							
6-203/INT	1631.5 1645.5	Т	Right Hand Circular	200KG7W	11.0	5.2	

E50. Modulation entirety.)	and Services (If the	ne complete description	on does not appear in	this box, please go to	o the end of the form	to view it in its		
DSSS,BPSK,	21, 094 to 84	,375 CPS, Data	, Marine & Lan	d Mobile				
6-203/INT	1646.5 1660.5	Т	Right Hand Circular	200Kg7W	11.0	5.2		
entirety.)	E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.)							
DSSS,BPSK,	DSSS,BPSK, 21, 094 to 84,375 CPS, Data, Marine & Land Mobile							
7–2011/INT	1530 1544	R	Right Hand Circular	200KG7W	0.0	0.0		
E50. Modulation entirety.)	and Services (If the	ne complete description	on does not appear in	this box, please go to	o the end of the form	to view it in its		
DSSS,BPSK, 21, 094 to 84,375 CPS, Data, Marine & Land Mobile								
7–2011/INT	1545 1559	R	Right Hand Circular	200KG7W	0.0	0.0		

E50. Modulation entirety.)	and Services (If the	ne complete description	on does not appear in	this box, please go to	o the end of the form	to view it in its	
DSSS, BPSK,	21, 094 to 84	,375 CPS, Data	, Marine & Lan	d Mobile			
7–2011/INT	1631.5 1645.5	Т	Right Hand Circular	200KG7W	13.3	7.5	
E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.) DSSS,BPSK, 21, 094 to 84,375 CPS, Data, Marine & Land Mobile							
7–2011/INT	1646.5 1660.5	Т	Right Hand Circular	200KG7W	13.3	7.5	
E50. Modulation entirety.)	and Services (If the	e complete description	on does not appear in	this box, please go to	o the end of the form	to view it in its	
DSSS,BPSK, 21, 094 to 84,375 CPS, Data, Marine & Land Mobile							
7–2012/INT	1530 1544	R	Right Hand Circular	200KG7W	0.0	0.0	

E50. Modulation entirety.)	and Services (If the	ne complete description	on does not appear in	this box, please go t	o the end of the form	to view it in its	
DSSS,BPSK,	21, 094 to 84	,375 CPS, Data	, Marine & Lan	d Mobile			
7–2012/INT	1545 1559	R	Right Hand Circular	200KG7W	0.0	0.0	
E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.) DSSS,BPSK, 21, 094 to 84,375 CPS, Data, Marine & Land Mobile							
7–2012/INT	1631.5 1645.5	Т	Right Hand Circular	200KG7W	13.3	7.5	
E50. Modulation entirety.)	and Services (If the	ne complete description	on does not appear in	this box, please go t	o the end of the form	to view it in its	
DSSS,BPSK, 21, 094 to 84,375 CPS, Data, Marine & Land Mobile							
7–2012/INT	1646.5 1660.5	Т	Right Hand Circular	200KG7W	13.3	7.5	

E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.)											
DSSS,BPSK, 21, 094 to 84,375 CPS, Data, Marine & Land Mobile											
8-203/EXT	1530 1544	R	Right Hand Circular	200KG7W	0.0	0.0					
E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.) DSSS,BPSK, 21, 094 to 84,375 CPS, Data, Marine & Land Mobile											
8-203/EXT	1545 1559	R	Right Hand Circular	200KG7W	0.0	0.0					
E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.) DSSS,BPSK, 21, 094 to 84,375 CPS, Data, Marine & Land Mobile											
8-203/EXT	1631.5 1645.5	Т	Right Hand Circular	200KG7W	11.0	5.2					

E50. Modulation entirety.)	and Services (If the	ne complete description	on does not appear in	this box, please go to	o the end of the form	to view it in its				
DSSS,BPSK, 21, 094 to 84,375 CPS, Data, Marine & Land Mobile										
8-203/EXT	1646.5 1660.5	Т	Right Hand Circular	200KG7W	11.0	5.2				
E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.)										
DSSS,BPSK, 21, 094 to 84,375 CPS, Data, Marine & Land Mobile										
11-C50/INT	1545 1559	R	Right Hand Circular	200G7W	0.0	0.0				
E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.)										
DSSS,BPSK, 21, 094 to 84,375 CPS, Data, Marine & Land Mobile										
11-C50/INT	1530 1544	R	Right Hand Circular	200KG7W	0.0	0.0				

E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.) DSSS, BPSK, 21, 094 to 84,375 CPS, Data, Marine & Land Mobile 11-C50/INT 1631.5 Right Hand 200KG7W 10.0 4.2 Circular 1645.5 E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.) DSSS, BPSK, 21, 094 to 84,375 CPS, Data, Marine & Land Mobile Right Hand 11-C50/INT 1646.5 200KG7W 10.0 4.2 1660.5 Circular E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.) DSSS, BPSK, 21, 094 to 84,375 CPS, Data, Marine & Land Mobile

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)
1-2010/INT	Geostationary	1530.0 1544.0	0.0/ 360.0	0.0	0.0	0.0	0.0	0.0
	Geostationary	1545.0 1559.0	0.0/ 360.0	0.0	0.0	0.0	0.0	0.0
	Geostationary	1631.5 1645.5	0.0/ 360.0	0.0	0.0	0.0	0.0	-1.0
	Geostationary	1646.5 1660.5	0.0/ 360.0	0.0	0.0	0.0	0.0	-1.0
2-2010/EXT	Geostationary	1530.0 1544.0	0.0/ 360.0	0.0	0.0	0.0	0.0	0.0
	Geostationary	1545.0 1559.0	0.0/ 360.0	0.0	0.0	0.0	0.0	0.0
	Geostationary	1631.5 1645.5	0.0/ 360.0	0.0	0.0	0.0	0.0	1.5
	Geostationary	1646.5 1660.5	0.0/ 360.0	0.0	0.0	0.0	0.0	1.5
2-2011/EXT	Geostationary	1530.0 1544.0	0.0/ 360.0	0.0	0.0	0.0	0.0	0.0
	Geostationary	1545.0 1559.0	0.0/ 360.0	0.0	0.0	0.0	0.0	0.0
	Geostationary	1631.5 1645.5	0.0/ 360.0	0.0	0.0	0.0	0.0	1.5

	Geostationary	1646.5 1660.5	0.0/ 360.0	0.0	0.0	0.0	0.0	1.5
3–2010	Geostationary	1530.0 1544.0	0.0/ 360.0	0.0	0.0	0.0	0.0	0.0
	Geostationary	1545.0 1559.0	0.0/ 360.0	0.0	0.0	0.0	0.0	0.0
	Geostationary	1631.5 1645.5	0.0/ 360.0	0.0	0.0	0.0	0.0	-1.0
	Geostationary	1646.5 1660.5	0.0/ 360.0	0.0	0.0	0.0	0.0	-1.0
4-2010/INT	Geostationary	1530.0 1544.0	0.0/ 360.0	0.0	0.0	0.0	0.0	0.0
	Geostationary	1545.0 1559.0	0.0/ 360.0	0.0	0.0	0.0	0.0	0.0
	Geostationary	1631.5 1645.5	0.0/ 360.0	0.0	0.0	0.0	0.0	-1.0
	Geostationary	1646.5 1660.5	0.0/ 360.0	0.0	0.0	0.0	0.0	-1.0
5-203/EXT	Geostationary	1545 1559	0.0/ 360.0	0.0	0.0	0.0	0.0	0.0
	Geostationary	1530.0 1544.0	0.0/ 360.0	0.0	0.0	0.0	0.0	0.0
	Geostationary	1631.5 1645.5	0.0/ 360.0	0.0	0.0	0.0	0.0	1.9
	Geostationary	1646.5 1660.5	0.0/ 360.0	0.0	0.0	0.0	0.0	1.9
5-2011/EXT	Geostationary	1530.0 1544.0	0.0/ 360.0	0.0	0.0	0.0	0.0	0.0

	Geostationary	1545.0 1559.0	0.0/ 360.0	0.0	0.0	0.0	0.0	0.0
	Geostationary	1631.5 1645.5	0.0/ 360.0	0.0	0.0	0.0	0.0	1.9
	Geostationary	1646.5 1660.5	0.0/ 360.0	0.0	0.0	0.0	0.0	1.9
5–2012	Geostationary	1530 1544	0.0/ 360.0	0.0	0.0	0.0	0.0	0.0
	Geostationary	1545 1559	0.0/ 360.0	0.0	0.0	0.0	0.0	0.0
	Geostationary	1631.5 1645.5	0.0/ 360.0	0.0	0.0	0.0	0.0	1.9
	Geostationary	1646.5 1660.5	0.0/ 360.0	0.0	0.0	0.0	0.0	1.9
6-2011/INT	Geostationary	1530.0 1544.0	0.0/ 360.0	0.0	0.0	0.0	0.0	0.0
	Geostationary	1545.0 1559.0	0.0/ 360.0	0.0	0.0	0.0	0.0	0.0
	Geostationary	1631.5 1645.5	0.0/ 360.0	0.0	0.0	0.0	0.0	-1.0
	Geostationary	1646.5 1660.5	0.0/ 360.0	0.0	0.0	0.0	0.0	-1.0
6-2012/INT	Geostationary	1530.0 1544.0	0.0/ 360.0	0.0	0.0	0.0	0.0	0.0
	Geostationary	1545.0 1559.0	0.0/ 360.0	0.0	0.0	0.0	0.0	0.0
	Geostationary	1631.5 1645.5	0.0/ 360.0	0.0	0.0	0.0	0.0	-1.0

	Geostationary	1646.5 1660.5	0.0/ 360.0	0.0	0.0	0.0	0.0	-1.0
6-203/INT	Geostationary	1530.0 1544.0	0.0/ 360.0	0.0	0.0	0.0	0.0	0.0
	Geostationary	1545.0 1559.0	0.0/ 360.0	0.0	0.0	0.0	0.0	0.0
	Geostationary	1631.5 1645.5	0.0/ 360.0	0.0	0.0	0.0	0.0	-1.0
	Geostationary	1646.5 1660.5	0.0/ 360.0	0.0	0.0	0.0	0.0	-1.0
7–2011/INT	Geostationary	1530.0 1544.0	0.0/ 360.0	0.0	0.0	0.0	0.0	0.0
	Geostationary	1545.0 1559.0	0.0/ 360.0	0.0	0.0	0.0	0.0	0.0
	Geostationary	1631.5 1645.5	0.0/ 360.0	0.0	0.0	0.0	0.0	-3.5
	Geostationary	1646.5 1660.5	0.0/ 360.0	0.0	0.0	0.0	0.0	-3.5
7–2012/INT	Geostationary	1530.0 1544.0	0.0/ 360.0	0.0	0.0	0.0	0.0	0.0
	Geostationary	1545.0 1559.0	0.0/ 360.0	0.0	0.0	0.0	0.0	0.0
	Geostationary	1631.5 1645.5	0.0/ 360.0	0.0	0.0	0.0	0.0	-3.5
	Geostationary	1646.5 1660.5	0.0/ 360.0	0.0	0.0	0.0	0.0	-3.5
8-203/EXT	Geostationary	1530.0 1544.0	0.0/ 360.0	0.0	0.0	0.0	0.0	0.0

	Geostationary	1545.0 1559.0	0.0/ 360.0	0.0	0.0	0.0	0.0	0.0
	Geostationary	1631.5 1645.5	0.0/ 360.0	0.0	0.0	0.0	0.0	-1.0
	Geostationary	1646.5 1660.5	0.0/ 360.0	0.0	0.0	0.0	0.0	-1.0
11-C50/INT	Geostationary	1530.0 1544.0	0.0/ 360.0	0.0	0.0	0.0	0.0	0.0
	Geostationary	1545.0 1559.0	0.0/ 360.0	0.0	0.0	0.0	0.0	0.0
	Geostationary	1631.5 1645.5	0.0/ 360.0	0.0	0.0	0.0	0.0	-3.5
	Geostationary	1646.5 1660.5	0.0/ 360.0	0.0	0.0	0.0	0.0	-3.5

REMOTE CONTROL POINT LOCATION

E61. Call Sign NOTE: Please enter the callsign of the contro callsign for which this application is being filed.	_	E65. Phone Number 240–686–3389		
E62. Street Address 20430 Century Boulevard				
E63. City Germantown	E67. County Montgomery		E64/68. State/Country MD/ USA	E66. Zip Code 20874

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: MSV — CONUS E5. Call Sign:

E2: Contact Name Greg Handermann E6. Phone 240–686–3300

Number:

E3. Street: 20430 Century E7. City: Germantown

Boulevard

E8. County: Montgomery

E4. State MD E9. Zip Code 20874

E10. Area of Operation: CONUS

E11. Latitude: 0 °0 '0.0 "

E12. Longitude: $0 \circ 0 \circ 0.0$ "

E13. Lat/Lon Coordinates are: NAD-27 NAD-83 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 as a technical analysis showing compliance with two–degree spacing policy.	O Yes	O No	● 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?	O Yes	O No	● N/A
E17. Is the facility operated by remote control? If YES, provide the location and telephone number of the control point.		s o	No
E18. Is frequency coordination required? If YES, attach a frequency coordination report as	O Ye	s 💿	No
E19. Is coordination with another country required? If YES, attach the name of the country(ies) and plot of coordination contours as	O Ye	s 🔞	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.	O Ye	s 🔞	No
POINTS OF COMMUNICATION			
Satellite Name:MSAT-1 MSAT-1 106.5 W.L. If you selected OTHER, please enter the following:			

E21. Common Name:	E22. ITU Name:
E23. Orbit Location:	E24. Country:
Satellite Name:MSAT-2 MSAT-2 100.95 W.L If you selected C	OTHER, please enter the following:
E21. Common Name:	E22. ITU Name:
E23. Orbit Location:	E24. Country:
Satellite Name:MSV-1 MSV-1 101 W.L. If you selected OTHE	IR, please enter the following:
E21. Common Name:	E22. ITU Name:
E23. Orbit Location:	E24. Country:
POINTS OF COMMUNICATION (Destination Points)	
E25. Site Identifier:	
E26. Common Name:	E27. Country:

ANTENNA

Site ID	E28. Antenna Id	E29. Quantity	E30. Manufacturer	E31. Model	E32. Antenna Size <meters></meters>	E41/42. Antenna GainTransmint and/or Recieve (dBi atGHz)
MSV CONUS	1-2010/INT	0	SCI Systems	MT-2010 internal	0.15	2.9 dBi at 1.545
						2.9 dBi at 1.645
	2-2010/EXT		Sensor Systems	S65-8582-101		4.3 dBi at 1.545
						4.8 dBi at 1.645
	2-2011/EXT					4.3 dBi at 1.545
						4.8 dBi at 1.645

3-2010/EXT	SCI Systems	MT-2010 external	0.06	4.0 dBi at 1.545
				4.0 dBi at 1.645
4-2010/INT		MT-2010 rl Internal	0.15	5.0 dBi at 1.545
				5.0 dBi at 1.645
5-203/EXT	Sensor Systems	S65-8282-301	0.27	3.5 dBi at 1.545
				3.9 dBi at 1.645
5-2011/EXT				3.5 dBi at 1.545
				3.9 dBi at 1.645
5-2012/EXT				3.5 dBi at 1.545
				3.9 dBi at 1.645
6–2011/INT	PCTel	3481IZ-3	0.18	3.7 dBi at 1.545
				3.7 dBi at 1.645
6-2012/INT				3.7 dBi at 1.545
				3.7 dBi at 1.645
6-203/INT				3.7 dBi at 1.545
				3.7 dBi at 1.645
7–2011/INT		3491IZ-3		6.0 dBi at 1.545
				6.0 dBi at 1.645
7–2012/INT				6.0 dBi at 1.545
				6.0 dBi at 1.645
8-203/EXT		3561AW-1/A	0.19	3.7 dBi at 1.545
				3.7 dBi at 1.645

11-C50/INT		CMT-500	0.1524	4.5 dBi at 1.545
				4.5 dBi at 1.645

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)
1-2010/INT	0.15/0.15	0.0	0.0	0.0	5.3	0.0	10.2
2-2010/EXT	0.15/0.15	0.0	0.0	0.0	5.3	0.0	12.1
2-2011/EXT	0.15/0.15	0.0	0.0	0.0	5.3	0.0	12.1
3-2010/EXT	0.06/0.06	0.0	0.0	0.0	5.3	0.0	11.3
4-2010/INT	0.15/0.15	0.0	0.0	0.0	5.3	0.0	12.3
5-203/EXT	0.27/0.27	0.0	0.0	0.0	5.3	0.0	11.2
5-2011/EXT	0.27/0.27	0.0	0.0	0.0	5.3	0.0	11.2
5-2012/EXT	0.27/0.27	0.0	0.0	0.0	5.3	0.0	11.2
6-2011/INT	0.18/0.18	0.0	0.0	0.0	5.3	0.0	11.0
6-2012/INT	0.18/0.18	0.0	0.0	0.0	5.3	0.0	11.0
6-203/INT	0.18/0.18	0.0	0.0	0.0	5.3	0.0	11.0
7–2011/INT	0.18/0.18	0.0	0.0	0.0	5.3	0.0	13.3
7-2012/INT	0.18/0.18	0.0	0.0	0.0	5.3	0.0	13.3
8-203/EXT	0.19/0.19	0.0	0.0	0.0	5.3	0.0	11.0
11-C50/INT	0.1524/0.1524	0.0	0.0	0.0	5.3	0.0	10.0

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)
1-2010/INT	1530.0 1544.0	R	Right Hand Circular	168KG1D	0.0	0.0
E50. Modulation entirety.) DSSS, BPSK,			Data, Marine &		to the end of the form	to view it in its
1–2010/INT	1545.0 1559.0	R	Right Hand Circular	168KG1D	0.0	0.0
E50. Modulation entirety.)	and Services (If the	he complete descript	ion does not appear ir	this box, please go	to the end of the form	to view it in its
DSSS, BPSK,	21,094 to 84,	375 CPS, and 1	Data, Marine &	Land Mobile		
1-2010/INT	1631.5 1645.5	Т	Right Hand Circular	168KG1D	10.2	4.4

E50. Modulation entirety.)	n and Services (If	the complete descript	ion does not appear	in this box, please	go to the end of t	the form to view it in its
DSSS, BPSK	, 21,094 to 84	,375 CPS, and	Data, Marine 8	Land Mobile		
1-2010/INT	1646.5 1660.5	Т	Right Hand Circular	168KG1D	10.2	4.4
E50. Modulation entirety.)	n and Services (If	the complete descript	ion does not appear	in this box, please	go to the end of t	the form to view it in its
DSSS,BPSK	, 21,094 to 84	,375 CPS, and 1	Data, Marine 8	Land Mobile		
2-2010/EXT	1530.0 1544.0	R	Right Hand Circular	168KG1D	0.0	0.0
E50. Modulation entirety.)	n and Services (If	the complete descript	ion does not appear	in this box, please	go to the end of t	the form to view it in its
DSSS. BPSI	X, 21,094 to 8	4,375 CPS, and	Data, Aeronau	ıtical		
2-2010/EXT	1545.0 1559.0	R	Right Hand Circular	168KG1D	0.0	0.0

E50. Modulation entirety.)	on and Services (I	f the complete d	lescription does not appear	r in this box, please	go to the end of t	the form to view it in its
DSSS. BPS	K, 21,094 to	84,375 CPS,	and Data, Aerona	utical		
2-2010/EXT	1631.5 1645.5	Т	Right Hand Circular	168KG1D	12.1	6.3
E50. Modulation entirety.)	on and Services (I	f the complete d	lescription does not appear	r in this box, please	go to the end of t	the form to view it in its
DSSS. BPS	K, 21,094 to	84,375 CPS,	and Data, Aerona	utical		
2-2010/EXT	1646.5 1660.5	Т	Right Hand Circular	168KG1D	12.1	6.3
E50. Modulatio entirety.)	on and Services (1	f the complete d	description does not appear	r in this box, please	go to the end of t	the form to view it in its
DSSS. BPS	K, 21,094 to	84,375 CPS,	and Data, Aerona	utical		
2-2011/EXT	1530.0 1544.0	R	Right Hand Circular	168KG1D	0.0	0.0

E50. Modulatio entirety.)	n and Services (I	f the complete d	lescription does not appear	in this box, please	go to the end of t	the form to view it in its
DSSS. BPS	K, 21,094 to	84,375 CPS,	and Data, Aerona	utical		
2-2011/EXT	1545.0 1559.0	R	Right Hand Circular	168KG1D	0.0	0.0
E50. Modulatio entirety.)	n and Services (I	f the complete d	lescription does not appear	in this box, please	go to the end of t	the form to view it in its
DSSS. BPS	K, 21,094 to	84,375 CPS,	and Data, Aerona	utical		
2-2011/EXT	1631.5 1645.5	Т	Right Hand Circular	168KG1D	12.1	6.3
E50. Modulatio entirety.)	n and Services (I	f the complete d	lescription does not appear	in this box, please	go to the end of t	the form to view it in its
DSSS. BPS	K, 21,094 to	84,375 CPS,	and Data, Aerona	utical		
2-2011/EXT	1646.5 1660.5	Т	Right Hand Circular	168KG1D	12.1	6.3

E50. Modulation entirety.)	and Services (If the	ne complete description	on does not appear in	this box, please go t	to the end of the form	to view it in its
	21,094 to 84	,375 CPS, and	Data, Aeronaut	ical		
3-2010/EXT	1530.0 1544.0	R	Right Hand Circular	168KG1D	0.0	0.0
E50. Modulation entirety.)	and Services (If the	ne complete descripti	on does not appear in	this box, please go t	o the end of the form	to view it in its
DSSS. BPSK	21,094 to 84	,375 CPS, and	Data, Marine &	Land Mobile		
3-2010/EXT	1545.0 1559.0	R	Right Hand Circular	168KG1D	0.0	0.0
E50. Modulation entirety.)	and Services (If the	ne complete description	on does not appear in	this box, please go t	to the end of the form	to view it in its
DSSS. BPSK	21,094 to 84	,375 CPS, and	Data, Marine &	Land Mobile		
3-2010/EXT	1631.5 1645.5	Т	Right Hand Circular	168KG1D	11.3	5.5

E50. Modulation entirety.)	and Services (If the	e complete description	on does not appear in	this box, please go t	o the end of the form	to view it in its
DSSS. BPSK	2, 21,094 to 84	,375 CPS, and	Data, Marine &	Land Mobile		
3-2010/EXT	1646.5 1660.5	Т	Right Hand Circular	168KG1D	11.3	5.5
E50. Modulation entirety.)	and Services (If the	e complete description	on does not appear in	this box, please go t	o the end of the form	to view it in its
DSSS. BPSK	., 21,094 to 84	,375 CPS, and	Data, Marine &	Land Mobile		
4–2010/INT	1530.0 1544.0	R	Right Hand Circular	168KG1D	0.0	0.0
E50. Modulation entirety.)	and Services (If the	e complete description	on does not appear in	this box, please go t	o the end of the form	to view it in its
DSSS. BPSK	21,094 to 84	,375 CPS, and	Data, Marine &	Land Mobile		
4–2010/INT	1545.0 1559.0	R	Right Hand Circular	168KG1D	0.0	0.0

E50. Modulation entirety.)	and Services (If the	ne complete descripti	on does not appear in	this box, please go t	o the end of the form	to view it in its	
DSSS. BPSK	2, 21,094 to 84	,375 CPS, and	Data, Marine &	Land Mobile			
4–2010/INT	1631.5 1645.5	Т	Right Hand Circular	168KG1D	12.3	6.5	
E50. Modulation entirety.)	and Services (If the	ne complete descripti	on does not appear in	this box, please go t	o the end of the form	to view it in its	
DSSS. BPSK	2, 21,094 to 84	,375 CPS, and	Data, Marine &	Land Mobile			
4–2010/INT	1646.5 1660.5	Т	Right Hand Circular	168KG1D	12.3	6.5	
E50. Modulation entirety.)	and Services (If the	ne complete descripti	on does not appear in	this box, please go t	o the end of the form	to view it in its	
DSSS. BPSK, 21,094 to 84,375 CPS, and Data, Marine & Land Mobile							
5-203/EXT	1530.0 1544.0	R	Right Hand Circular	168KG1D	0.0	0.0	

E50. Modulation entirety.)	on and Services (If the complete d	escription does not appea	r in this box, please	go to the end of t	the form to view it in its
DSSS, BPS	SK, 21,094 to	84,375 CPS,	and Data, Aerona	utical		
5-203/EXT	1545.0 1559.0	R	Right Hand Circular	168KG1D	0.0	0.0
E50. Modulation entirety.)	on and Services (If the complete d	escription does not appea	r in this box, please	go to the end of t	the form to view it in its
DSSS, BPS	SK, 21,094 to	84,375 CPS,	and Data, Aerona	utical		
5-203/EXT	1631.5 1645.5	Т	Right Hand Circular	168KG1D	11.2	5.4
E50. Modulation entirety.)	on and Services (If the complete d	escription does not appea	r in this box, please	go to the end of t	the form to view it in its
DSSS, BPS	SK, 21,094 to	84,375 CPS,	and Data, Aerona	utical		
5-203/EXT	1646.5 1660.5	Т	Right Hand Circular	168KG1D	11.2	5.4

E50. Modulation entirety.)	and Services (If the	ne complete descripti	on does not appear in	this box, please go t	o the end of the form	to view it in its	
DSSS, BPSK	z, 21,094 to 84	,375 CPS, and	Data, Aeronaut	ical			
5-2011/EXT	1530.0 1544.0	R	Right Hand Circular	168KG1D	0.0	0.0	
E50. Modulation entirety.)	and Services (If the	ne complete descripti	on does not appear in	this box, please go t	o the end of the form	to view it in its	
DSSS, BPSK	I, 21,094 to 84	.,375 CPS, and	Data, Aeronaut	ical			
5-2011/EXT	1545.0 1559.0	R	Right Hand Circular	168KG1D	0.0	0.0	
E50. Modulation entirety.)	and Services (If the	ne complete descripti	on does not appear in	this box, please go t	o the end of the form	to view it in its	
DSSS, BPSK, 21,094 to 84,375 CPS, and Data, Aeronautical							
5-2011/EXT	1631.5 1645.5	Т	Right Hand Circular	168KG1D	11.2	5.4	

E50. Modulation entirety.)	and Services (If the	ne complete descripti	on does not appear in	this box, please go t	o the end of the form	to view it in its	
DSSS, BPSK	z, 21,094 to 84	,375 CPS, and	Data, Aeronaut	ical			
5-2011/EXT	1646.5 1660.5	Т	Right Hand Circular	168KG1D	11.2	5.4	
E50. Modulation entirety.)	and Services (If the	ne complete descripti	on does not appear in	this box, please go t	o the end of the form	to view it in its	
DSSS, BPSK	I, 21,094 to 84	,375 CPS, and	Data, Aeronaut	ical			
5-2012/EXT	1530.0 1544.0	R	Right Hand Circular	168KG1D	0.0	0.0	
E50. Modulation entirety.)	and Services (If the	ne complete descripti	on does not appear in	this box, please go t	o the end of the form	to view it in its	
DSSS, BPSK, 21,094 to 84,375 CPS, and Data, Aeronautical							
5-2012/EXT	1545.0 1559.0	R	Right Hand Circular	168KG1D	0.0	0.0	

E50. Modulation entirety.)	on and Services (If the complete d	lescription does not appea	r in this box, please	go to the end of t	he form to view it in its
DSSS, BPS	SK, 21,094 to	84,375 CPS,	and Data, Aerona	utical		
5-2012/EXT	1631.5 1645.5	Т	Right Hand Circular	168KG1D	11.2	5.4
E50. Modulation entirety.)	on and Services (If the complete d	lescription does not appea	r in this box, please	go to the end of t	he form to view it in its
DSSS, BPS	SK, 21,094 to	84,375 CPS,	and Data, Aerona	utical		
5-2012/EXT	1646.5 1660.5	Т	Right Hand Circular	168KG1D	11.2	5.4
E50. Modulation entirety.)	on and Services (If the complete d	lescription does not appea	r in this box, please	go to the end of t	the form to view it in its
DSSS, BPS	SK, 21,094 to	84,375 CPS,	and Data, Aerona	utical		
6–2011/INT	1530.0 1544.0	R	Right Hand Circular	168KG1D	0.0	0.0

E50. Modulation entirety.)	and Services (If the	ne complete description	on does not appear in	this box, please go t	o the end of the form	to view it in its
	21,094 to 84	,375 CPS, and	Data, Marine &	Land Mobile		
6-2011/INT	1545.0 1559.0	R	Right Hand Circular	168KG1D	0.0	0.0
E50. Modulation entirety.)	and Services (If the	ne complete description	on does not appear in	this box, please go t	o the end of the form	to view it in its
DSSS, BPSK	21,094 to 84	,375 CPS, and	Data, Marine &	Land Mobile		
6–2011/INT	1631.5 1645.5	Т	Right Hand Circular	168KG1D	11.0	5.2
E50. Modulation entirety.)	and Services (If the	ne complete description	on does not appear in	this box, please go t	o the end of the form	to view it in its
DSSS, BPSK	21,094 to 84	,375 CPS, and	Data, Marine &	Land Mobile		
6–2011/INT	1646.5 1660.5	Т	Right Hand Circular	168KG1D	11.0	5.2

E50. Modulation entirety.)	and Services (If the	ne complete description	on does not appear in	this box, please go t	o the end of the form	to view it in its
	21,094 to 84	,375 CPS, and	Data, Marine &	Land Mobile		
6-2012/INT	1530.0 1544.0	R	Right Hand Circular	168KG1D	0.0	0.0
E50. Modulation entirety.)	and Services (If the	ne complete description	on does not appear in	this box, please go t	o the end of the form	to view it in its
DSSS, BPSK	21,094 to 84	,375 CPS, and	Data, Marine &	Land Mobile		
6–2012/INT	1545.0 1559.0	R	Right Hand Circular	168KG1D	0.0	0.0
E50. Modulation entirety.)	and Services (If the	ne complete description	on does not appear in	this box, please go t	o the end of the form	to view it in its
DSSS, BPSK	21,094 to 84	,375 CPS, and	Data, Marine &	Land Mobile		
6–2012/INT	1631.5 1645.5	Т	Right Hand Circular	168KG1D	11.0	5.2

E50. Modulation entirety.)	on and Services (If the complete d	lescription does not appear	in this box, please	go to the end of	the form to view it in its
DSSS, BPS	SK, 21,094 to	84,375 CPS,	and Data, Marine	& Land Mobil	e	
6-2012/INT	1646.5 1660.5	Т	Right Hand Circular	168KG1D	11.0	5.2
E50. Modulation entirety.)	on and Services (If the complete d	lescription does not appear	in this box, please	go to the end of	the form to view it in its
DSSS, BPS	SK, 21,094 to	84,375 CPS,	and Data, Marine	& Land Mobil	е	
6-203/INT	1530.0 1544.0	R	Right Hand Circular	168KG1D	0.0	0.0
E50. Modulation entirety.)	on and Services (If the complete d	description does not appear	in this box, please	go to the end of	the form to view it in its
DSSS, BPS	SK, 21,094 to	84,375 CPS,	and Data, Marine	& Land Mobil	e	
6-203/INT	1545.0 1559.0	R	Right Hand Circular	168KG1D	0.0	0.0

E50. Modulati entirety.)	ion and Services (If the complete d	escription does not appea	r in this box, please	go to the end of t	the form to view it in its
DSSS, BP	SK, 21,094 to	84,375 CPS,	and Data, Marine	e & Land Mobil	e	
6-203/INT	1631.5 1645.5	Т	Right Hand Circular	168KG1D	11.0	5.2
E50. Modulati entirety.)	ion and Services (If the complete d	escription does not appea	r in this box, please	go to the end of t	the form to view it in its
DSSS, BP	SK, 21,094 to	84,375 CPS,	and Data, Marine	e & Land Mobil	е	
6–203/INT	1646.5 1660.5	Т	Right Hand Circular	168KG1D	11.0	5.2
E50. Modulati	ion and Services (If the complete d	escription does not appea	r in this box, please	go to the end of t	the form to view it in its
DSSS, BP	SK, 21,094 to	84,375 CPS,	and Data, Marine	e & Land Mobil	е	
7–2011/INT	1530.0 1544.0	R	Right Hand Circular	168KG1D	0.0	0.0

E50. Modulation entirety.)	on and Services (If the complete d	lescription does not appear	in this box, please	go to the end of t	he form to view it in its
DSSS, BPS	SK, 21,094 to	84,375 CPS,	and Data, Marine	& Land Mobil	е	
7–2011/INT	1545.0 1559.0	R	Right Hand Circular	168KG1D	0.0	0.0
E50. Modulation entirety.)	on and Services (If the complete d	lescription does not appear	in this box, please	go to the end of t	he form to view it in its
DSSS, BPS	EK, 21,094 to	84,375 CPS,	and Data, Marine	& Land Mobil	e	
7–2011/INT	1631.5 1645.5	Т	Right Hand Circular	168KG1D	13.3	7.5
E50. Modulation entirety.)	on and Services (If the complete d	lescription does not appear	in this box, please	go to the end of t	the form to view it in its
DSSS, BPS	K, 21,094 to	84,375 CPS,	and Data, Marine	& Land Mobil	e	
7–2011/INT	1646.5 1660.5	Т	Right Hand Circular	168KG1D	13.3	7.5

E50. Modulation entirety.)	and Services (If the	ne complete description	on does not appear in	this box, please go t	to the end of the form	to view it in its
	21,094 to 84	,375 CPS, and	Data, Marine &	Land Mobile		
7–2012/INT	1530.0 1544.0	R	Right Hand Circular	168KG1D	0.0	0.0
E50. Modulation entirety.)	and Services (If the	ne complete description	on does not appear in	this box, please go t	o the end of the form	to view it in its
DSSS, BPSK	21,094 to 84	,375 CPS, and	Data, Marine &	Land Mobile		
7–2012/INT	1545.0 1559.0	R	Right Hand Circular	168KG1D	0.0	0.0
E50. Modulation entirety.)	and Services (If the	ne complete description	on does not appear in	this box, please go t	to the end of the form	to view it in its
DSSS, BPSK	21,094 to 84	,375 CPS, and	Data, Marine &	Land Mobile		
7–2012/INT	1631.5 1645.5	Т	Right Hand Circular	168KG1D	13.3	7.5

E50. Modulation entirety.)	on and Services (In	the complete d	escription does not appear	in this box, please	go to the end of t	the form to view it in its
DSSS, BPS	K, 21,094 to	84,375 CPS,	and Data, Marine	& Land Mobil	e	
7–2012/INT	1646.5 1660.5	Т	Right Hand Circular	168KG1D	13.3	7.5
E50. Modulation entirety.)	on and Services (I	the complete d	escription does not appear	in this box, please	go to the end of t	the form to view it in its
DSSS, BPS	EK, 21,094 to	84,375 CPS,	and Data, Marine	& Land Mobil	e	
8-203/EXT	1530.0 1544.0	R	Right Hand Circular	168KG1D	0.0	0.0
E50. Modulation entirety.)	on and Services (I	the complete d	escription does not appear	in this box, please	go to the end of t	the form to view it in its
DSSS, BPS	K, 21,094 to	84,375 CPS,	and Data, Marine	& Land Mobil	е	
8-203/EXT	1545.0 1559.0	R	Right Hand Circular	168KG1D	0.0	0.0

E50. Modulation entirety.)	and Services (If the	e complete description	on does not appear in	this box, please go t	o the end of the form	to view it in its
	21,094 to 84	,375 CPS, and	Data, Marine &	Land Mobile		
8-203/EXT	1631.5 1645.5	Т	Right Hand Circular	168KG1D	11.0	5.2
E50. Modulation entirety.)	and Services (If the	ne complete description	on does not appear in	this box, please go t	o the end of the form	to view it in its
DSSS, BPSK	21,094 to 84	,375 CPS, and	Data, Marine &	Land Mobile		
8-203/EXT	1646.5 1660.5	Т	Right Hand Circular	168KG1D	11.0	5.2
E50. Modulation entirety.)	and Services (If the	e complete description	on does not appear in	this box, please go t	o the end of the form	to view it in its
DSSS, BPSK	., 21,094 to 84	,375 CPS, and	Data, Marine &	Land Mobile		
11-C50/INT	1530.0 1544.0	R	Right Hand Circular	168KG1D	0.0	0.0

E50. Modulation entirety.)	and Services (If the	he complete descripti	on does not appear in	this box, please go t	to the end of the form	to view it in its
DSSS, BPSF	X, 21,094 to 84	1,375 CPS, and	Data, Marine &	Land Mobile		
11-C50/INT	1545.0 1559.0	R	Right Hand Circular	168KG1D	0.0	0.0
E50. Modulation entirety.)	and Services (If the	he complete descripti	on does not appear in	this box, please go t	to the end of the form	to view it in its
DSSS, BPSF	K, 21,094 to 84	1,375 CPS, and	Data, Marine &	Land Mobile		
11-C50/INT	1631.5 1645.5	Т	Right Hand Circular	168KG1D	10.0	4.2
E50. Modulation entirety.)	and Services (If the	he complete descripti	on does not appear in	this box, please go t	to the end of the form	to view it in its
DSSS, BPSF	C, 21,094 to 84	1,375 CPS, and	Data, Marine &	: Land Mobile		
11–C50/INT	1646.5 1660.5	Т	Right Hand Circular	168KG1D	10.0	4.2

E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.)

DSSS, BPSK, 21,094 to 84,375 CPS, and Data, Marine & Land Mobile

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)
1-2010/INT	Geostationary	1530.0 1544.0	100.95/106.5	0.0	0.0	0.0	0.0	0.0
	Geostationary	1545.0 1559.0	100.95/ 106.5	0.0	0.0	0.0	0.0	0.0
	Geostationary	1631.5 1645.5	100.95/ 106.5	0.0	0.0	0.0	0.0	-1.0
	Geostationary	1646.5 1660.5	100.95/ 106.5	0.0	0.0	0.0	0.0	-1.0
2-2010/EXT	Geostationary	1530.0 1544.0	100.95/ 106.5	0.0	0.0	0.0	0.0	0.0
	Geostationary	1545.0 1559.0	100.95/ 106.5	0.0	0.0	0.0	0.0	0.0
	Geostationary	1631.5 1645.5	100.95/ 106.5	0.0	0.0	0.0	0.0	1.5

	Geostationary	1646.5 1660.5	100.95/ 106.5	0.0	0.0	0.0	0.0	1.5
2-2011/EXT	Geostationary	1530.0 1544.0	100.95/ 106.5	0.0	0.0	0.0	0.0	0.0
	Geostationary	1545.0 1559.0	100.95/ 106.5	0.0	0.0	0.0	0.0	0.0
	Geostationary	1631.5 1645.5	100.95/ 106.5	0.0	0.0	0.0	0.0	1.5
	Geostationary	1646.5 1660.5	100.95/ 106.5	0.0	0.0	0.0	0.0	1.5
3-2010/EXT	Geostationary	1530.0 1544.0	100.95/ 106.5	0.0	0.0	0.0	0.0	0.0
	Geostationary	1545.0 1559.0	100.95/ 106.5	0.0	0.0	0.0	0.0	0.0
	Geostationary	1631.5 1645.5	100.95/ 106.5	0.0	0.0	0.0	0.0	-1.0
	Geostationary	1646.5 1660.5	100.95/ 106.5	0.0	0.0	0.0	0.0	-1.0
4-2010/INT	Geostationary	1530.0 1544.0	100.95/ 106.5	0.0	0.0	0.0	0.0	0.0
	Geostationary	1545.0 1559.0	100.95/ 106.5	0.0	0.0	0.0	0.0	0.0
	Geostationary	1631.5 1645.5	100.95/ 106.5	0.0	0.0	0.0	0.0	-1.0
	Geostationary	1646.5 1660.5	100.95/ 106.5	0.0	0.0	0.0	0.0	-1.0
5-203/EXT	Geostationary	1530.0 1544.0	100.95/106.5	0.0	0.0	0.0	0.0	0.0

	Geostationary	1545.0 1559.0	100.95/ 106.5	0.0	0.0	0.0	0.0	0.0
	Geostationary	1631.5 1645.5	100.95/ 106.5	0.0	0.0	0.0	0.0	1.9
	Geostationary	1646.5 1660.5	100.95/ 106.5	0.0	0.0	0.0	0.0	1.9
5–2011/EXT Geos	Geostationary	1530.0 1544.0	100.95/ 106.5	0.0	0.0	0.0	0.0	0.0
	Geostationary	1545.0 1559.0	100.95/ 106.5	0.0	0.0	0.0	0.0	0.0
	Geostationary	1631.5 1645.5	100.95/ 106.5	0.0	0.0	0.0	0.0	1.9
	Geostationary	1646.5 1660.5	100.95/ 106.5	0.0	0.0	0.0	0.0	1.9
5-2012/EXT	Geostationary	1530.0 1544.0	100.95/ 106.5	0.0	0.0	0.0	0.0	0.0
	Geostationary	1545.0 1559.0	100.95/ 106.5	0.0	0.0	0.0	0.0	0.0
	Geostationary	1631.5 1645.5	100.95/ 106.5	0.0	0.0	0.0	0.0	1.9
	Geostationary	1646.5 1660.5	100.95/ 106.5	0.0	0.0	0.0	0.0	1.9
6-2011/INT	Geostationary	1530.0 1544.0	100.95/ 106.5	0.0	0.0	0.0	0.0	0.0
	Geostationary	1545.0 1559.0	100.95/ 106.5	0.0	0.0	0.0	0.0	0.0
	Geostationary	1631.5 1645.5	100.95/ 106.5	0.0	0.0	0.0	0.0	-1.0

	Geostationary	1646.5 1660.5	100.95/ 106.5	0.0	0.0	0.0	0.0	-1.0
6-2012/INT	Geostationary	1530.0 1544.0	100.95/ 106.5	0.0	0.0	0.0	0.0	0.0
	Geostationary	1545.0 1559.0	100.95/ 106.5	0.0	0.0	0.0	0.0	0.0
	Geostationary	1631.5 1645.5	100.95/ 106.5	0.0	0.0	0.0	0.0	-1.0
	Geostationary	1646.5 1660.5	100.95/ 106.5	0.0	0.0	0.0	0.0	-1.0
6-203/INT	Geostationary	1530.0 1544.0	100.95/ 106.5	0.0	0.0	0.0	0.0	0.0
	Geostationary	1545.0 1559.0	100.95/ 106.5	0.0	0.0	0.0	0.0	0.0
	Geostationary	1631.5 1645.5	100.95/ 106.5	0.0	0.0	0.0	0.0	-1.0
	Geostationary	1646.5 1660.5	100.95/ 106.5	0.0	0.0	0.0	0.0	-1.0
7–2011/INT	Geostationary	1530.0 1544.0	100.95/ 106.5	0.0	0.0	0.0	0.0	0.0
	Geostationary	1545.0 1559.0	100.95/ 106.5	0.0	0.0	0.0	0.0	0.0
	Geostationary	1631.5 1645.5	100.95/ 106.5	0.0	0.0	0.0	0.0	-3.5
	Geostationary	1646.5 1660.5	100.95/ 106.5	0.0	0.0	0.0	0.0	-3.5
7–2012/INT	Geostationary	1530.0 1544.0	100.95/ 106.5	0.0	0.0	0.0	0.0	0.0

	Geostationary	1545.0 1559.0	100.95/ 106.5	0.0	0.0	0.0	0.0	0.0
	Geostationary	1631.5 1645.5	100.95/ 106.5	0.0	0.0	0.0	0.0	-3.5
	Geostationary	1646.5 1660.5	100.95/ 106.5	0.0	0.0	0.0	0.0	-3.5
8-203/EXT	Geostationary	1530.0 1544.0	100.95/ 106.5	0.0	0.0	0.0	0.0	0.0
	Geostationary	1545.0 1559.0	100.95/ 106.5	0.0	0.0	0.0	0.0	0.0
	Geostationary	1631.5 1645.5	100.95/ 106.5	0.0	0.0	0.0	0.0	-1.0
	Geostationary	1646.5 1660.5	100.95/ 106.5	0.0	0.0	0.0	0.0	-1.0
11-C50/INT	Geostationary	1530.0 1544.0	100.95/ 106.5	0.0	0.0	0.0	0.0	0.0
	Geostationary	1545.0 1559.0	100.95/ 106.5	0.0	0.0	0.0	0.0	0.0
	Geostationary	1631.5 1645.5	100.95/ 106.5	0.0	0.0	0.0	0.0	-3.5
	Geostationary	1646.5 1660.5	100.95/ 106.5	0.0	0.0	0.0	0.0	-3.5

REMOTE CONTROL POINT LOCATION

E61. Call Sign	E65. Phone Number 240–686–3389
NOTE: Please enter the callsign of the controlling station, not the callsign for which this application is being filed.	

E62. Street Address 20430 Century Boulevard			
E63. City Germantown	E67. County Montgomery	E64/68. State/Country MD/ USA	E66. Zip Code 20874

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: ISAT—ASDR E5. Call Sign:

E2: Contact Name Greg Handermann E6. Phone 240–686–3300

Number:

E3. Street: 20430 Century E7. City: Germantown

Boulevard

E8. County: Montgomery

E4. State MD E9. Zip Code 20874

E10. Area of Operation: CONUS, AK, HI, plus all US territories & possessions within the footprint of the

satellite

E11. Latitude: 0 °0 '0.0 "

E12. Longitude: 0 °0 '0.0 "

E13. Lat/Lon Coordinates are: NAD-27 NAD-83 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 as a technical analysis showing compliance with two–degree spacing policy.	O Yes	s O No	● 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?	O Yes	s O No	● N/A
E17. Is the facility operated by remote control? If YES, provide the location and telephone number of the control point.	● Ye	es O	, No
E18. Is frequency coordination required? If YES, attach a frequency coordination report as	O Ye	es 💿	. No
E19. Is coordination with another country required? If YES, attach the name of the country(ies) and plot of coordination contours as	O Ye	es 💿	, 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.	O Ye	es 💿	. No
POINTS OF COMMUNICATION			
Satellite Name:ISAT List ISAT List If you selected OTHER, please enter the following:			

E21. Common Name:	E22. ITU Name:
E23. Orbit Location:	E24. Country:

POINTS OF COMMUNICATION (Destination Points)

E25. Site Identifier:	
E26. Common Name:	E27. Country:

ANTENNA

Site ID	E28. Antenna Id	E29. Quantity	E30. Manufacturer	E31. Model	E32. Antenna Size <meters></meters>	E41/42. Antenna GainTransmint and/or Recieve (dBi atGHz)
ISAT— ASDR	9–ASDR/INT	0	CMDC	CMDC-999- 2020-PA	0.315	11.0 dBi at 1.545
						11.0 dBi at 1.645
	10-ASDO/IN			CMDC-999- 2021-PA	0.047	2.5 dBi at 1.545
						2.5 dBi at 1.645

E28. Antenna Id	E33/34. Diameter Minor/Major (meters)	E35. Above Ground Level (meters)	(meters)	Height Above Ground Level 	Input Power at antenna flange 	Maximum Antenna Height	E40. Total EIRP for al carriers (dBW)
9-ASDR/INT	0.315/0.315	0.0	0.0	0.0	1.6	0.0	13.0
10-ASDO/IN	0.047/0.047	0.0	0.0	0.0	4.0	0.0	8.5

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)
9–ASDR/INT	1530.0 1544.0	R	Right Hand Circular	200KG1D	0.0	0.0
E50. Modulation entirety.) DSSS, BPSK	·		ata, Land Mobil		to the end of the form	to view it in its
9–ASDR/INT	1545.0 1559.0	R	Right Hand Circular	200KG1D	0.0	0.0
E50. Modulation entirety.)	and Services (If the	ne complete descript	tion does not appear ir	this box, please go	to the end of the form	to view it in its
DSSS, BPSK	21,094 to 1	51,000 CPS, D	ata, Land Mobil	Le		
9–ASDR/INT	1631.5 1645.5	Т	Right Hand Circular	200KG1D	13.0	7.2

E50. Modulation entirety.)	and Services (If the	ne complete description	on does not appear ir	this box, please go t	o the end of the form	to view it in its
DSSS, BPSK	21,094 to 1	51,000 CPS, Da	ta, Land Mobil	.e		
9–ASDR/INT	1646.5 1660.5	Т	Right Hand Circular	200KG1D	13.0	7.2
E50. Modulation entirety.)	and Services (If the	ne complete descripti	on does not appear ir	this box, please go t	o the end of the form	to view it in its
DSSS, BPSK	21,094 to 1	51,000 CPS, Da	ta, Land Mobil	.e		
10-ASDO/IN	1530.0 1544.0	R	Right Hand Circular	200KG1D	0.0	0.0
E50. Modulation entirety.)	and Services (If the	ne complete description	on does not appear ir	this box, please go t	o the end of the form	to view it in its
DSSS, BPSK	21,094 to 1	51,000 CPS, Da	ta, Land Mobil	.e		
10–ASDO/IN	1545.0 1559.0	R	Right Hand Circular	200KG1D	0.0	0.0

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E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its
entirety.)
    DSSS, BPSK, 21,094 to 151,000 CPS, Data, Land Mobile
10-ASDO/IN
                  1631.5
                                                       Right Hand
                                                                         200KG1D
                                                                                           8.5
                                                                                                             2.7
                  1645.5
                                                       Circular
  E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its
entirety.)
    DSSS, BPSK, 21,094 to 151,000 CPS, Data, Land Mobile
10-ASDO/IN
                                                       Right Hand
                                                                                                             2.7
                  1646.5
                                                                         200KG1D
                                                                                           8.5
                  1660.5
                                                       Circular
  E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its
entirety.)
    DSSS, BPSK, 21,094 to 151,000 CPS, Data, Land Mobile
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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)
9–ASDR/INT	Geostationary	1530.0 1544.0	0.0/ 360.0	0.0	0.0	0.0	0.0	0.0
	Geostationary	1545.0 1559.0	0.0/ 360.0	0.0	0.0	0.0	0.0	0.0
	Geostationary	1631.5 1645.5	0.0/ 360.0	0.0	0.0	0.0	0.0	4.2
	Geostationary	1646.5 1660.5	0.0/ 360.0	0.0	0.0	0.0	0.0	4.2
10-ASDO/IN	Geostationary	1530.0 1544.0	0.0/ 360.0	0.0	0.0	0.0	0.0	0.0
	Geostationary	1545.0 1559.0	0.0/ 360.0	0.0	0.0	0.0	0.0	0.0
	Geostationary	1631.5 1645.5	0.0/ 360.0	0.0	0.0	0.0	0.0	-3.0
	Geostationary	1645.5 1660.5	0.0/ 360.0	0.0	0.0	0.0	0.0	-3.0

REMOTE CONTROL POINT LOCATION

E61. Call Sign	E65. Phone Number 240–686–3389
NOTE: Please enter the callsign of the controlling station, not the callsign for which this application is being filed.	

E62. Street Address 20430 Century Boulevard			
E63. City Germantown	E67. County Montgomery	E64/68. State/Country MD/ USA	E66. Zip Code 20874

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: MSV-ASDR E5. Call Sign:

E2: Contact Name Greg Handermann E6. Phone 240–686–3300

Number:

E3. Street: 20430 Century E7. City: Germantown

Boulevard

E8. County: Montgomery

E4. State MD E9. Zip Code 20874

E10. Area of Operation: CONUS, AK, HI, plus all US territories & possessions within the footprint of the

satellite

E11. Latitude: 0 °0 '0.0 "

E12. Longitude: 0 °0 '0.0 "

E13. Lat/Lon Coordinates are: NAD-27 NAD-83 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 as a technical analysis showing compliance with two–degree spacing policy.	O Yes	O No	● 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?	O Yes	O No	⊘ N/A
E17. Is the facility operated by remote control? If YES, provide the location and telephone number of the control point.	⊚ Yes	s o	No
E18. Is frequency coordination required? If YES, attach a frequency coordination report as	O Yes	s 💿	No
E19. Is coordination with another country required? If YES, attach the name of the country(ies) and plot of coordination contours as	O Yes	s 💿	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.	O Yes	s 🔞	No
POINTS OF COMMUNICATION	-		
Satellite Name:MSV-1 MSV-1 101 W.L. If you selected OTHER, please enter the following:			

E21. Common Name:	E22. ITU Name:
E23. Orbit Location:	E24. Country:
Satellite Name:MSAT-2 MSAT-2 100.95 W.L If you selected O	THER, please enter the following:
E21. Common Name:	E22. ITU Name:
E23. Orbit Location:	E24. Country:
Satellite Name:MSAT-1 MSAT-1 106.5 W.L. If you selected O	ΓHER, please enter the following:
E21. Common Name:	E22. ITU Name:
E23. Orbit Location:	E24. Country:
POINTS OF COMMUNICATION (Destination Points)	
E25. Site Identifier:	
E26. Common Name:	E27. Country:
ANTENNA	

Site ID	E28. Antenna Id	E29. Quantity	E30. Manufacturer	E31. Model	E32. Antenna Size <meters></meters>	E41/42. Antenna GainTransmint and/or Recieve (dBi atGHz)
MSV-ASDR	9–ASDR/INT	0	CMDC	CMDC-999- 2020-PA	0.315	11.0 dBi at 1.545
						11.0 dBi at 1.645
	10-ASDO/IN			CMDC-999- 2021-PA	0.047	2.5 dBi at 1.545
						2.5 dBi at 1.645

E28. Antenna Id	Diameter	E35. Above Ground Level (meters)	(meters)	Height Above Ground	Input Power at antenna flange 	Maximum Antenna Height	E40. Total EIRP for al carriers (dBW)
9-ASDR/INT	0.315/0.315	0.0	0.0	0.0	1.6	0.0	13.0
10-ASDO/IN	0.047/0.047	0.0	0.0	0.0	4.0	0.0	8.5

FREQUENCY

	E43/44. Frequency Bands (MHz)	E45. T/R Mode			E48. Maximum EIRP per Carrier (dBW)	E49. Maximum ERIP Density per Carrier (dBW/4kHz)
9–ASDR/INT	1530.0 1544.0	R	Right Hand Circular	168KG1D	0.0	0.0

E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.)

DSSS, BPSK, 21,094 to 151,000 CPS, Data, Land Mobile

9-ASDR/INT	1545.0	R	Right Hand	168KG1D	0.0	0.0
	1559.0		Circular			

E50. Modulation entirety.)	and Services (If the	ne complete description	on does not appear in	this box, please go t	to the end of the form	to view it in its		
DSSS, BPSK	21,094 to 1	51,000 CPS, Da	ta, Land Mobil	-e				
9–ASDR/INT	1631.5 1645.5	Т	Right Hand Circular	168KG1D	13.0	7.2		
E50. Modulation entirety.)	and Services (If the	ne complete descripti	on does not appear in	this box, please go t	o the end of the form	to view it in its		
DSSS, BPSK	DSSS, BPSK, 21,094 to 151,000 CPS, Data, Land Mobile							
9–ASDR/INT	1646.5 1660.5	Т	Right Hand Circular	168KG1D	13.0	7.2		
E50. Modulation entirety.)	and Services (If the	ne complete description	on does not appear in	this box, please go t	to the end of the form	to view it in its		
DSSS, BPSK	21,094 to 1	51,000 CPS, Da	ta, Land Mobil	.e				
10–ASDO/IN	1530.0 1544.0	R	Right Hand Circular	168KG1D	0.0	0.0		

E50. Modulation	and Services (If th	e complete description	on does not appear in	this box, please go to	o the end of the form	to view it in its
entirety.)						
DSSS, BPSK	, 21,094 to 1	51,000 CPS, Da	ta, Land Mobil	e		
10-ASDO/IN	1545.0 1559.0	R	Right Hand Circular	168KG1D	0.0	0.0
E50. Modulation entirety.)	and Services (If th	e complete description	on does not appear in	this box, please go to	o the end of the form	to view it in its
DSSS, BPSK	, 21,094 to 1	51,000 CPS, Da	ta, Land Mobil	e		
10–ASDO/IN	1631.5 1645.5	Т	Right Hand Circular	168KG1D	8.5	2.7
E50. Modulation entirety.)	and Services (If th	e complete description	on does not appear in	this box, please go to	o the end of the form	to view it in its
DSSS, BPSK	, 21,094 to 1	51,000 CPS, Da	ta, Land Mobil	е		
10-ASDO/IN	1646.5 1660.5	Т	Right Hand Circular	168KG1D	8.5	2.7

E50. Modulation and Services (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.)

DSSS, BPSK, 21,094 to 151,000 CPS, Data, Land Mobile

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)
9–ASDR/INT	Geostationary	1530.0 1544.0	100.95/ 106.5	0.0	0.0	0.0	0.0	0.0
	Geostationary	1545.0 1559.0	100.95/ 106.5	0.0	0.0	0.0	0.0	0.0
	Geostationary	1631.5 1645.5	100.95/ 106.5	0.0	0.0	0.0	0.0	4.2
	Geostationary	1646.5 1660.5	100.95/ 106.5	0.0	0.0	0.0	0.0	4.2
10-ASDO/IN	Geostationary	1530.0 1544.0	100.95/ 106.5	0.0	0.0	0.0	0.0	0.0
	Geostationary	1545.0 1559.0	100.95/ 106.54	0.0	0.0	0.0	0.0	0.0
	Geostationary	1631.5 1645.5	100.95/ 106.5	0.0	0.0	0.0	0.0	-3.0

	Geostationary	1646.5 1660.5	100.95/ 106.5	0.0		0.0	0.0	0.0	-3.0	
REMOTE CO	NTROL POIN	T LOCATION					-		-	
E61. Call Sign						. Phone Number-686–3389	er			
	NOTE: Please enter the callsign of the controlling station, not the callsign for which this application is being filed.									
	E62. Street Address 20430 Century Boulevard									
E63. City Germantown	1		E67. County Montgomer				E64/68. State/Country MD/ US	I .	E66. Zip Cod 20874	e

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