Approved by OMB 3060–0678

Date & Time Filed: Sep 13 2018 9:38:13:110AM File Number: SES-REG-INTR2018-05727 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: Registration for multiple C–Band R/O earth stations in Littleton, CO.

Name:	Comcast Cable Communications Management, LLC	Phone Number:	215-286-8818
DBA Name:		Fax Number:	215-286-1022
Street:	One Comcast Center	E–Mail:	sheila_smith@cable.comcast.com
	1701 John F. Kennedy Boulevard		
City:	Philadelphia	State:	PA
<b>Country:</b>	USA	Zipcode:	19103 –2838
Attention:	Sheila Smith		

Name:	Catherine Fox	Phone Number:	215-286-8818
Company:		Fax Number:	215-286-1022
Street:	One Comcast Center	E-Mail:	Catherine_Fox@Comcast.com
	1701 John F. Kennedy Boule	evard	
City:	Philadelphia	State:	PA
<b>Country:</b>	USA	Zipcode:	19103–2838
Attention:		<b>Relationship:</b>	

# 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	<b>b</b> 2. Application for Registration of New Domestic Receive–Only Station
for 17a and only one for 17b. a. a. a. al. Earth Station (N/A) a2. Space Station	<ul> <li>(N/A) b3. Amendment to a Pending Application</li> <li>(N/A) b4. Modification of License or Registration</li> <li>(N/A) b5. Assignment of License or Registration</li> <li>(N/A) b6. Transfer of Control of License or Registration</li> <li>(N/A) b7. Notification of Minor Modification</li> <li>(N/A) b8. Application for License of New Receive–Only Station Using Non–U.S. Licensed</li> <li>Satellite</li> <li>(N/A) b9. Letter of Intent to Use Non–U.S. Licensed Satellite to Provide Service in the United</li> <li>States</li> <li>b10. Other (Please specify)</li> <li>b11. Application for Earth Station to Access a Non–U.S.satellite Not Currently Authorized to</li> <li>Provide the Proposed Service in the Proposed Frequencies in the United States.</li> </ul>
	• 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	ion?
• 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 O Noncomme	ercial educational licensee
• Other(please explain):	
17d.	
Fee Classification CMO – Receive Only E	arth Station

18. If this filing is in reference to an	19. If this filing is an amendment to a pending ap	oplication enter:
existing station, enter:	(a) Date pending application was filed:	(b) File number of pending application:
(a) Call sign of station:		
Not Applicable	Not Applicable	Not Applicable

# TYPE OF SERVICE

20. NATURE OF SERVICE: This filing is for an authorization to provide	e 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)	
21. STATUS: Choose the button next to the applicable status. Choose	22. If earth station applicant, check all that apply.
only one.	Using U.S. licensed satellites
	Using Non–U.S. licensed satellites
facilities:	ervice, see instructions regarding Sec. 214 filings. Choose one. Are these
• 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).

**x** 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

a. Fixed Earth Station				
b. Temporary–Fixed Eart				
c. 12/14 GHz VSAT Netw	vork			
d. Mobile Earth Station				
N/A) e. Geostationary Space	Station			
N/A) f. Non–Geostationary S	Space Station			
g. Other (please specify)				
PE OF EARTH STATION	FACILITY: Choose only	one.		

### 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.

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.

Yes

No No

29. Is the applicant a foreign government or the representative of any foreign government?	O Yes ● No
30. Is the applicant an alien or the representative of an alien?	O Yes O No ⊚ N/A
31. Is the applicant a corporation organized under the laws of any foreign government?	O Yes O 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?	O Yes O 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? If Yes, attach as an exhibit, copies of the requests for waivers or exceptions with supporting documents.	O Yes	lo 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.	O Yes	No

• Yes • No • N/A

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.	• Yes	No
38. Has any court finally adjudged the applicant, or any person directly or indirectly controlling the applicant, guilty of unlawfully monopolizing or attemptiing 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.

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.



O No

Yes

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?

43. Description. (Summarize the nature of the application and the services to be provided). (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.)

Registration for multiple C-Band R/O earth stations that will support station broadcast operations.

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>О</b> <sup>В</sup>
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.	<b>O</b> 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 bu	itton next to applicable response	se.)			
O Individual					
• Unincorporated Association					
• Partnership					
$\bullet$ Corporation					
Governmental Entity					
Other (please specify)					
•					
45. Name of Person Signing		46. Title of Person	Signing		
Catherine Fox			y General Counsel		
47. Please supply any need attachment	ts.				
Attachment 1:	Attachment 2:		Attachment 3:		
			I	I	
WILLFUL FALSE STATE	MENTS MADE ON THIS FC	ORM ARE PUNISHABI	LE BY FINE AND / OR IMPRISON	MENT	
-			NY 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 St	ation Site			
E1: Site Identifier:	Littleton	E5. Call Sign:		
E2: Contact Name	Malcomb Peckham	E6. Phone Number:	303-486-3909	
E3. Street:	7235 West Titan Road	E7. City:	Littleton	
		E8. County:	Douglas	
E4. State	СО	E9. Zip Code	80125	
E10. Area of Operat	tion:	СО		
E11. Latitude:	39 °30 '52.0 "N			
E12. Longitude:	105 °1 '30.0 "W			
E13. Lat/Lon Coord	linates are:	ONAD-27	<b>O</b> NAD-83	O <sup>N/A</sup>
E14. Site Elevation	(AMSL):	1688.13 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.	• Yes	O <sup>No</sup>	O <sup>N/A</sup>
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 <sup>No</sup>	● N/A
E17. Is the facility operated by remote control? If YES, provide the location and telephone number of the control point.	O Yes	۲	No

E18. Is frequency coordination required? If YES, attach a frequency coordination report as		Yes	O No
E19. Is coordination with another country required? If YES, attach the name of the country(ies) and plot of coordination contours as	0	Yes	
E20. FAA Notification – (See 47 CFR Part 17 and 47 CFR part 25.113(c)) Where FAA notification is required, h 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	No

Satellite Name: PERMITTED 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 at GHz)
Littleton	9.1	4	Andrews	9.1M 4 Port	9.1	50.7 dBi at 3.95
	7.3	2	Andrew	ES76K-1	7.3	48.3 dBi at 3.95
	4.5	7	Patriot	4.5 M Prime	4.5	43.3 dBi at 3.95
	7.3	2	Viasat	8010D	7.3	47.7 dBi at 3.95
	4.5	4	Viking	VS–SSE45FAE	4.5	43.6 dBi at 3.95

			E36. Above Sea	8			E40. Total
Id	Diameter	Ground	Level 	Height Above	Input Power at	Maximum	EIRP for al
	Minor/Major	Level 	(meters)	Ground	antenna	Antenna Height	carriers 
	(meters)	(meters)		Level 	flange 	Above	(dBW)
				(meters)	(Watts)	Rooftop 	
						(meters)	

9.1	0.0/0.0	9.1	1697.23	0.0	0.0	0.0	0.0
7.3	0.0/0.0	7.3	1695.43	0.0	0.0	0.0	0.0
4.5	0.0/0.0	4.5	1692.63	0.0	0.0	0.0	0.0
7.3	0.0/0.0	7.3	1695.43	0.0	0.0	0.0	0.0
4.5	0.0/0.0	4.5	1692.63	0.0	0.0	0.0	0.0

## FREQUENCY

	E43/44. Frequency Bands (MHz)	E45. T/R Mode			E48. Maximum EIRP per Carrier (dBW)	E49. Maximum ERIP Density per Carrier (dBW/4kHz)
9.1	3700 4200	R	Horizontal and Vertical	36M0G7W	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.)

Digital Video Carrier

7.3	3700	4200	R	Horizontal and Vertical	36M0G7W	0.0	0.0
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E50. Modulatio	n and Servic	es (If t	he complete descripti	ion does not appear i	n this box, please go	to the end of the for	rm to view it in its
entirety.)							
Digital V	ideo Car:	rier					
4.5	3700	4200	R	Horizontal and Vertical	36M0G7W	0.0	0.0
E50. Modulatio entirety.)	n and Servic	es (If t	he complete descripti	ion does not appear i	n this box, please go	to the end of the for	rm to view it in its
Digital V	ideo Car:	rier					
7.3	3700	4200	R	Horizontal and Vertical	36M0G7W	0.0	0.0
E50. Modulatio entirety.)	n and Servic	es (If t	he complete descripti	ion does not appear i	n this box, please go	to the end of the for	rm to view it in its
Digital V	ideo Car:	rier					
4.5	3700	4200	R	Horizontal and Vertical	36M0G7W	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.)

Digital Video Carrier

### 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)
9.1	Geostationary	3700 4200	60.0/ 143.0	122.4	25.2	230.8	29.9	0.0
7.3	Geostationary	3700 4200	60.0/ 143.0	122.4	25.2	230.8	29.9	0.0
4.5	Geostationary	3700 4200	60.0/ 143.0	122.4	25.2	230.8	29.9	0.0
7.3	Geostationary	3700 4200	60.0/ 143.0	122.4	25.2	230.8	29.9	0.0
4.5	Geostationary	3700 4200	60.0/ 143.0	122.4	25.2	230.8	29.9	0.0

REMOTE CONTROL POINT LOCATION

	E65. Phone Number		
olling station, not the			
	•		
E67. County		E64/68.	E66. Zip Code
		State/Country	
		E67. County	

### SATELLITE EARTH STATION AUTHORIZATIONS FCC Form 312 – Schedule B:(Technical and Operational Description) FOR OFFICIAL USE ONLY

Location of Earth St	ation Site				
E1: Site Identifier:	Littleton	E5. Call Sign:			
E2: Contact Name	Malcomb Peckham	E6. Phone Number:	303-486-3909		
E3. Street:	4100 East Dry Creek Road	E7. City:	Littleton		
		E8. County:	Douglas		
E4. State	СО	E9. Zip Code	80122		
E10. Area of Operat	tion:	СО			
E11. Latitude:	39 °34 '45.0 "N				
E12. Longitude:	104 °56 '17.0 "W				
E13. Lat/Lon Coord	linates are:	ONAD-27	● NAD-83	O <sup>N/A</sup>	
E14. Site Elevation	(AMSL):	1730.3 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.	• Yes	O <sup>No</sup>	O <sup>N/A</sup>
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 <sup>No</sup>	● N/A
E17. Is the facility operated by remote control? If YES, provide the location and telephone number of the control point.	0 Yes	•	No

E18. Is frequency coordination required? If YES, attach a frequency coordination report as		Yes	O No
E19. Is coordination with another country required? If YES, attach the name of the country(ies) and plot of coordination contours as	0	Yes	No
E20. FAA Notification – (See 47 CFR Part 17 and 47 CFR part 25.113(c)) Where FAA notification is required, h 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.	ave O	Yes	No

Satellite Name: PERMITTED 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 at GHz)
Littleton	4.5	18	Patriot	4.5M Prime	4.5	43.6 dBi at 3.95
	6.1	3	Scientific Atlanta	8060	6.1	45.5 dBi at 3.95
	7.3	2	Viasat	8010D	7.3	48.5 dBi at 3.95

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)		E40. Total EIRP for al carriers  (dBW)
4.5	0.0/0.0	4.5	1734.8	0.0	0.0	0.0	0.0
6.1	0.0/0.0	6.1	1736.4	0.0	0.0	0.0	0.0
7.3	0.0/0.0	7.3	1737.6	0.0	0.0	0.0	0.0

FREQUENCY

E28. Antenna Id	E43/44. Frequency Band (MHz)	s 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)
4.5	3700 4200	) R	Horizontal and Vertical	36M0G7W	0.0	0.0
E50. Modulation entirety.)	× ×	f the complete descript	ion does not appear in	this box, please go t	o the end of the form	to view it in its
	deo Carrier					
6.1	3700 4200	) R	Horizontal and Vertical	36M0G7W	0.0	0.0
E50. Modulation entirety.)	and Services (I	f the complete descript	ion does not appear in	this box, please go t	o the end of the form	to view it in its
Digital Vi	deo Carrier					
7.3	3700 4200	) R	Horizontal and Vertical	36M0G7W	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.)

Digital Video Carrier

## 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)
4.5	Geostationary	3700 4200	60.0/ 143.0	122.6	25.2	230.9	29.8	0.0
6.1	Geostationary	3700 4200	60.0/ 143.0	122.6	25.2	230.9	29.8	0.0
7.3	Geostationary	3700 4200	60.0/ 143.0	122.6	25.2	230.9	29.8	0.0

## REMOTE CONTROL POINT LOCATION

E65. Phone Number
-

E63. City	E67. County	E64/68.	E66. Zip Code
		State/Country	
		/	

#### FCC NOTICE REQUIRED BY THE PAPERWORK REDUCTION ACT

The public reporting for this collection of information is estimated to average 0.25 – 24 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the required data, and completing and reviewing the collection of information. If you have any comments on this burden estimate, or how we can improve the collection and reduce the burden it causes you, please write to the Federal Communications Commission, AMD–PERM, Paperwork Reduction Project (3060–0678), Washington, DC 20554. We will also accept your comments regarding the Paperwork Reduction Act aspects of this collection via the Internet if you send them to PRA@fcc.gov. PLEASE DO NOT SEND COMPLETED FORMS TO THIS ADDRESS.

Remember – You are not required to respond to a collection of information sponsored by the Federal government, and the government may not conduct or sponsor this collection, unless it displays a currently valid OMB control number or if we fail to provide you with this notice. This collection has been assigned an OMB control number of 3060–0678.

THE FOREGOING NOTICE IS REQUIRED BY THE PAPERWORK REDUCTION ACT OF 1995, PUBLIC LAW 104–13, OCTOBER 1, 1995, 44 U.S.C. SECTION 3507.