



**UNITED STATES OF AMERICA
FEDERAL COMMUNICATIONS COMMISSION
RADIO STATION AUTHORIZATION**

Name: Kymeta Corporation

Call Sign: E170070

Authorization Type: Modification of License

File Number: SES-MOD-20171027-01255

Non Common Carrier

Grant date: 05/08/2018

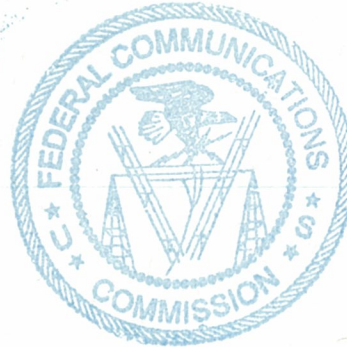
Expiration Date: 08/24/2032

Nature of Service: Earth Stations on-board Vessels

Nature of Service: Fixed Satellite Service

Nature of Service: Vehicle Mounted Earth Station

Class of Station: Earth Stations on-board Vessels/VSAT



A) Site Location(s)

#	Site ID	Address	Latitude	Longitude	Elevation (Meters)	Special Provisions NAD (Refer to Section H)
1)	ESV	US territorial and international waters			0	NA
		Licensee certifies antenna(s) do not comply with Section 25.209. Please refer to Section E for special conditions placed upon antennas at this site.				
2)	VMES	United States, its territories and international waters			0	NA
		Licensee certifies antenna(s) do not comply with Section 25.209. Please refer to Section E for special conditions placed upon antennas at this site.				
3)	VSAT	United States, its territories and international waters			0	NA
		Licensee certifies antenna(s) do not comply with Section 25.209. Please refer to Section E for special conditions placed upon antennas at this site.				

Subject to the provisions of the Communications Act of 1934, The Communications Satellite Act of 1962, subsequent acts and treaties, and all present and future regulations made by this Commission, and further subject to the conditions and requirements set forth in this license, the grantee is authorized to construct, use and operate the radio facilities described below for radio communications for the term beginning August 24, 2017 (3 AM Eastern Standard Time) and ending August 24, 2032 (3 AM Eastern Standard Time). The required date of completion of construction and commencement of operation is May 8, 2019 (3 AM Eastern Standard Time). Grantee must file with the Commission a certification upon completion of construction and commencement of operation.



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B) Particulars of Operations

The General Provision 1010 applies to all receiving frequency bands.

The General Provision 1900 applies to all transmitting frequency bands.

For the text of these provisions, refer to Section H.

#	Frequency (MHz)	Polarization Code	Emission	Tx/Rx Mode	Max EIRP /Carrier (dBW)	Max EIRP Density /Carrier (dBW/4kHz)	Associated Antenna	Special Provisions (Refer to Section H)	Modulation/ Services
1)	14000.0000-14500.0000	H, V, L, R	1M50G1D	Tx	44.74	19.00	KyWay 1		Data
2)	14000.0000-14500.0000	H, V, L, R	2M00G1D	Tx	45.04	18.05	KyWay 1		Data
3)	14000.0000-14500.0000	H, V, L, R	3M00G1D	Tx	45.04	16.29	KyWay 1		Data
4)	14000.0000-14500.0000	H, V, L, R	3M48G1D	Tx	45.04	15.64	KyWay 1		Data
5)	14000.0000-14500.0000	H, V, L, R	5M00G1D	Tx	45.04	14.07	KyWay 1		Data
6)	14000.0000-14500.0000	H, V, L, R	611KG1D	Tx	40.84	19.00	KyWay 1		Data
7)	14000.0000-14500.0000	H, V, L, R	6M96G1D	Tx	45.04	12.63	KyWay 1		Data
8)	11700.0000-12200.0000	H, V, L, R	1M50G1D	Rx			KyWay 1		Data
9)	11700.0000-12200.0000	H, V, L, R	36M0G1D	Rx			KyWay 1		Data
10)	11450.0000-11700.0000	H, V, L, R	1M50G1D	Rx			KyWay 1		Data
11)	11450.0000-11700.0000	H, V, L, R	36M0G1D	Rx			KyWay 1		Data
12)	10950.0000-11200.0000	L, R	1M50G1D	Rx			KyWay 1		Data
13)	10950.0000-11200.0000	H, V, L, R	36M0G1D	Rx			KyWay 1		Data

C) Frequency Coordination Limits

#	Frequency Limits (MHz)	Satellite Arc (Deg. Long.)		Elevation (Degrees)		Azimuth (Degrees)		Max EIRP Density toward Horizon (dBW/4kHz)	Associated Antenna(s)
		East Limit	West Limit	East Limit	West Limit	East Limit	West Limit		
1)	14000.0000-14500.0000								KyWay 1
2)	11700.0000-12200.0000								KyWay 1
3)	11450.0000-11700.0000								KyWay 1
4)	10950.0000-11200.0000								KyWay 1



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D) Points of Communications

The following stations located in the Satellite orbits consistent with Sections B and C of this Entry:

- 1) VMES to Permitted Space Station List
- 2) ESV to Permitted Space Station List
- 3) VSAT to Permitted Space Station List

E) Antenna Facilities

Site ID	Antenna ID	Units	Diameter (meters)	Manufacturer	Model number	Site Elevation (Meters)	Max Antenna Height (Meters)	Special Provisions (Refer to Section H)
ESV	KyWay 1	5000	0.7	Kymeta Corporation	Type 1	0	0 AGL/ 0 AMSL	
Max Gains(s):								
Maximum total input power at antenna flange (Watts) =					16.00			
Maximum aggregate output EIRP for all carriers (dBW) =					45.04			
VSAT	KyWay 1	5000	0.7	Kymeta Corporation	Type 1	0	0 AGL/ 0 AMSL	
Max Gains(s):								
Maximum total input power at antenna flange (Watts) =					16.00			
Maximum aggregate output EIRP for all carriers (dBW) =					45.04			
VMES	KyWay 1	1000	0.7	Kymeta Corporation	Type 1	0	0 AGL/ 0 AMSL	
Max Gains(s):								
		33.0 dBi @	14.5000 GHz	32.9 dBi @	14.0000 GHz	32.8 dBi @		
		12.2000 GHz	31.9 dBi @	11.2000 GHz	32.3 dBi @	11.4500 GHz	26.5	
		dBi @	10.9500 GHz					
Maximum total input power at antenna flange (Watts) =					16.00			
Maximum aggregate output EIRP for all carriers (dBW) =					45.04			

F) Remote Control Point:

ESV	12277 134th Court NE, Suite 100 Redmond, King, WA 98052 (206) 902-6888	Call Sign: N/A
VMES	12277 134th Court NE, Suite 100 Redmond, King, WA 98052 (206) 902-6888	Call Sign: N/A



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F) Remote Control Point:

VSAT 12277 134th Court NE, Suite 100 Call Sign: N/A
 Redmond, King, WA 98052
 (206) 902-6888

G) Antenna Structure marking and lighting requirements:

None unless otherwise specified under Special and General Provisions

H) Special and General Provisions

A) This RADIO STATION AUTHORIZATION is granted subject to the following special provisions and general conditions:

4 --- Licensee must ensure that a current listing of the name, title, mailing address, email address, and telephone number of the responsible point of contact are on file at the FCC. Any changes must be filed electronically in the International Bureau Filing System (IBFS) in the "Other Filings" tab within 10 days of the change.

6604 --- Antenna elevation for all operations must be at least 5 degrees above the geographic horizon.

6609 --- The licensee must comply with any pertinent limits and provisions established by the International Telecommunication Union to protect other services allocated internationally.

90003 --- The licensee shall not operate in the band 14.0-14.2 GHz within 125 km of the NASA TDRSS facilities on: Guam (latitude 13°36'55" N, longitude 144°51'22" E); White Sands, New Mexico (latitude 32°20'59" N, longitude 106°36'31" W and latitude 32°32'40" N, longitude 106°36'48" W); Blossom Point, Maryland (latitude 38° 25' 44" N.L., longitude 77° 05' 02" W.L.) unless and until it enters into an agreement with NASA that NTIA has approved. The licensee must conform its operations to the terms of any coordination agreement with NASA and must file a copy of the agreement with the Commission within 30 days of execution. Upon receipt of such notification from a licensee, the International Bureau will issue a public notice stating that the licensee may commence operations within the coordination zone in 30 days if no party has opposed the operations.

90014 --- The licensee shall not operate in the band 14.47-14.50 GHz within (a) 45 km of the radio observatory on St. Croix, Virgin Islands (located at latitude 17°46' N, longitude 64°35' W); (b) 125 km of the radio observatory on Mauna Kea, Hawaii (located at latitude 19°48' N, longitude 155°28' W); and (c) 90 km of the Arecibo Observatory on Puerto Rico (located at latitude 18°20'46" W, longitude 66°45'11" N) unless and until the licensee enters into an agreement with the National Science Foundation that has been approved by NTIA. The licensee must conform its operations to the terms of any coordination agreement with the National Science Foundation and must file a copy of the agreement with the Commission within 30 days of execution.



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H) Special and General Provisions

A) This RADIO STATION AUTHORIZATION is granted subject to the following special provisions and general conditions:

- 90017 --- The licensee shall not operate in the vicinity of radio observatories of Radio Astronomy Service (RAS) in the band 14.47-14.50 GHz unless and until the licensee enters into an agreement with the National Science Foundation that has been approved by NTIA. The licensee must conform its operations to the terms of any coordination agreement with the National Science Foundation and must file a copy of the agreement with the Commission within 30 days of execution. The appropriate NSF contact point to initiate coordination is Electromagnetic Spectrum Manager, NSF, 4201 Wilson Blvd., Suite 1045, Arlington, VA 22203, fax 703-292-9034, e-mail esm@nsf.gov. See also a list of each applicable RAS site, its location, and the applicable coordination zone on Table-1: Applicable RAS Facilities and Associated Coordination Distances, 47 C.F.R. 25.226(d)(2).
- 90094 --- The licensee must maintain a U.S. point of contact available 24 hours per day, seven days per week, with the authority and ability to terminate operations authorized herein.
- 90285 --- Operations in international waters and in territorial waters of other countries must be in compliance with the applicable laws, regulations, and licensing procedures of other countries, as well as with the conditions of this authorization.
- 90398 --- Changes to previously authorized transmitting facilities, operations and devices regulated by the Commission that may have significant environmental impact, and are not excluded by §1.1306, require the preparation of an Environmental Assessment (EA) by the licensee. (See 47 C.F.R. §§1.1307, 1.1308 and 1.1311)
- 90399 --- The licensee shall, at all times, take all necessary measures to ensure that operation of this (these) authorized earth station(s) does not create potential exposure of humans to radiofrequency radiation in excess of the FCC exposure limits defined in 47 CFR §§ 1.1307(b) and 1.1310. Physical measures must be taken to ensure compliance with limits for both occupational/controlled exposure and for general population/uncontrolled exposure, as defined in these rule sections. Compliance can be accomplished in most cases by appropriate restrictions, such as fencing. Requirements for restrictions can be determined by predictions based on calculations, modeling, or by field measurements. The FCC's OET Bulletin 65 (available on-line at www.fcc.gov/oet/rfsafety) provides information on predicting exposure levels and on methods for ensuring compliance, including the use of warning and alerting signs and protective equipment for workers.



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H) Special and General Provisions

A) This RADIO STATION AUTHORIZATION is granted subject to the following special provisions and general conditions:

900407 --- The Permitted Space Station List (Permitted List) is a list of all geostationary space stations providing fixed-satellite service pursuant to a Commission license or grant of U.S. market access. The Permitted List currently includes the following frequency bands per §25.103 and §25.115(k)(1):

- 3600-4200 MHz (space-to-Earth)
- 5850-6725 MHz (Earth-to-space)
- 10.95-11.2 GHz (space-to-Earth)
- 11.45-12.2 GHz (space-to-Earth)
- 13.75-14.5 GHz (Earth-to-space)
- 18.3-18.8 GHz (space-to-Earth)
- 19.7-20.2 GHz (space-to-Earth)
- 24.75-25.25 GHz (Earth-to-space)
- 28.35-28.6 GHz (Earth-to-space)
- 29.25-30.0 GHz (Earth-to-space).

Earth stations with "Permitted List" designated as a point of communication may access any space station on the Permitted List, provided the operations comply with the applicable "routine" uplink and downlink limits, are within the specific frequency bands authorized in the earth station license, have completed coordination with terrestrial stations pursuant to §25.203, and otherwise comply with all terms and conditions of both the earth station license and the space station grant.



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B) This RADIO STATION AUTHORIZATION is granted subject to the additional conditions specified below:

This authorization is issued on the grantee's representation that the statements contained in the application are true and that the undertakings described will be carried out in good faith.

This authorization shall not be construed in any manner as a finding by the Commission on the question of marking or lighting of the antenna system should future conditions require. The grantee expressly agrees to install such marking or lighting as the Commission may require under the provisions of Section 303(q) of the Communications Act. 47 U.S.C. § 303(q).

Neither this authorization nor the right granted by this authorization shall be assigned or otherwise transferred to any person, firm, company or corporation without the written consent of the Commission. This authorization is subject to the right of use or control by the government of the United States conferred by Section 706 of the Communications Act. 47 U.S.C. § 706. Operation of this station is governed by Part 25 of the Commission's Rules. 47 C.F.R. Part 25.

This authorization shall not vest in the licensee any right to operate this station nor any right in the use of the designated frequencies beyond the term of this license, nor in any other manner than authorized herein.

This authorization is issued on the grantee's representation that the station is in compliance with environmental requirements set forth in Section 1.1307 of the Commission's Rules. 47 C.F.R. § 1.1307.

This authorization is issued on the grantee's representation that the station is in compliance with the Federal Aviation Administration (FAA) requirements as set forth in Section 17.4 of the Commission's Rules. 47 C.F.R. § 17.4.

The following condition applies when this authorization permits construction of or modifies the construction permit of a radio station.

This authorization shall be automatically forfeited if the station is not ready for operation by the required date of completion of construction unless an application for modification of authorization to request additional time to complete construction is filed by that date, together with a showing that failure to complete construction by the required date was due to factors not under control of the grantee.

Licensees are required to pay annual regulatory fees related to this authorization. The requirement to collect annual regulatory fees from regulatees is contained in Public Law 103-66, "The Omnibus Budget Reconciliation Act of 1993." These regulatory fees, which are likely to change each fiscal year, are used to offset costs associated with the Commission's enforcement, public service, international and policy and rulemaking activities. The Commission issues a Report and Order each year, setting the new regulatory fee rates. Receive only earth stations are exempt from payment of regulatory fees.