UNITED STATES OF AMERICA
FEDERAL COMMUNICATIONS COMMISSION

RADIO STATION AUTHORIZATION

Name: L3harris Technologies
Call Sign: E100099
Authorization Type: Modification of License
File Number: SES-MOD-20201202-01283
Non Common Carrier **Grant date:** 01/25/2021 **Expiration Date:** 08/11/2026

Nature of Service: Fixed Satellite Service

Class of Station: Other

A) Site Location(s)

#	Site ID	Address	Latitude	Longitude	Elevation (Meters)	NAD	Special Provisions (Refer to Section H)
1)	L3 Linkabit	9890 TOWNE CENTRE DRIVE Mobile-2, .46M. SAN DIEGO, SAN DIEGO, CA 92121 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.				NA	
2)	L3 Titan/Linkabi	3033 SCIENCE PARK ROAD Mobile-1, .36M. SAN DIEGO, SAN DIEGO, CA 92121 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.				NA	
3)	L3HARRIS	9890 TOWNE CENTRE DRIVE Mobile-3, .46M. SAN DIEGO, SAN DIEGO, CA 92121				UNK	

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 11, 2011 (3 AM Eastern Standard Time) and ending August 11, 2026 (3 AM Eastern Standard Time) . The required date of completion of construction and commencement of operation is January 25, 2022 (3 AM Eastern Standard Time) . Grantee must file with the Commission a certification upon completion of construction and commencement of operation.

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	11M5G7D	Tx	45.70	11.10	Mobile-1	316 317	Digital Data (type 5T)

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2)	14000.0000-14500.0000	H,V	1M43G7D	Tx	36.60	11.10	Mobile-1	316 317	Digital Data (type 3T)
3)	14000.0000-14500.0000	H,V	45K0G7D	Tx	21.60	11.10	Mobile-1	316 317	Digital Data (type 1T)
4)	14000.0000-14500.0000	H,V	717KG7D	Tx	33.60	11.10	Mobile-1	316 317	Digital Data (type 2T)
5)	11700.0000-12200.0000	H,V	11M5G7D	Rx			Mobile-1		Digital Data (type 5R)
6)	11700.0000-12200.0000	H,V	1M43G7D	Rx			Mobile-1		Digital Data (type 3R)
7)	11700.0000-12200.0000	H,V	45K0G7D	Rx			Mobile-1		Digital Data (type 1R)
8)	11700.0000-12200.0000	H,V	717KG7D	Rx			Mobile-1		Digital Data (type 2R)
9)	14000.0000-14500.0000	H,V	11M5G7D	Tx	45.00	11.00	Mobile-2		Digital Data (type 5T)
10)	14000.0000-14500.0000	H,V	1M43G7D	Tx	36.60	11.00	Mobile-2		Digital Data (type 3T)
11)	14000.0000-14500.0000	H,V	45K0G7D	Tx	21.60	11.00	Mobile-2		Digital Data (type 1T)
12)	14000.0000-14500.0000	H,V	717KG7D	Tx	33.60	11.00	Mobile-2		Digital Data (type 2T)
13)	11700.0000-12200.0000	H,V	11M5G7D	Rx			Mobile-2		Digital Data (type 5R)
14)	11700.0000-12200.0000	H,V	1M43G7D	Rx			Mobile-2		Digital Data (type 3T)
15)	11700.0000-12200.0000	H,V	45K0G7D	Rx			Mobile-2		Digital Data (type 1R)
16)	11700.0000-12200.0000	H,V	717K0G7D	Rx			Mobile-2		Digital Data (type 2R)
17)	14000.0000-14500.0000	H,V	11M5G7D	Tx	44.50	11.00	Mobile-3		Digital Data (type 5T)
18)	14000.0000-14500.0000	H,V	1M43G7D	Tx	36.60	11.00	Mobile-3		Digital Data (type 3T)
19)	14000.0000-14500.0000	H,V	45K0G7D	Tx	21.60	11.00	Mobile-3		Digital Data (type 1T)
20)	14000.0000-14500.0000	H,V	717KG7D	Tx	33.60	11.00	Mobile-3		Digital Data (type 2T)
21)	11700.0000-12200.0000	H,V	11M5G7D	Rx			Mobile-3		Digital Data (type 5R)
22)	11700.0000-12200.0000	H,V	1M43G7D	Rx			Mobile-3		Digital Data (type 3R)
23)	11700.0000-12200.0000	H,V	45K0G7D	Rx			Mobile-3		Digital Data (type 1R)
24)	11700.0000-12200.0000	H,V	717KG7D	Rx			Mobile-3		Digital Data (type 2R)

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C) Frequency Coordination Limits

#	Frequency Limits (MHz)	Satellite Arc (Deg. Long.) East Limit	Satellite Arc (Deg. Long.) West Limit	Elevation (Degrees) East Limit	Elevation (Degrees) West Limit	Azimuth (Degrees) East Limit	Azimuth (Degrees) West Limit	Max EIRP Density toward Horizon (dBW/4kHz)	Associated Antenna(s)
1)	14000.0000-14500.0000	47.5W-139.0W		10.0-10.0		120.0-250.0		-23.5	Mobile-3
2)	11700.0000-12200.0000	47.5W-139.0W		10.0-10.0		120.0-250.0			Mobile-3
3)	14000.0000-14500.0000	79.0W-129.0W		21.0-10.0		124.0-250.0		-20.8	Mobile-1
4)	11700.0000-12200.0000	79.0W-129.0W		21.0-10.0		124.0-250.0			Mobile-1
5)	14000.0000-14500.0000	79.0W-129.0W		21.0-10.0		124.0-250.0		-20.8	Mobile-2
6)	11700.0000-12200.0000	79.0W-129.0W		21.0-10.0		124.0-250.0			Mobile-2

D) Points of Communications

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

1) L3HARRIS to HORIZONS 1 (S2475) @ 127 degrees W.L. (Japan-licensed)
2) L3HARRIS to GALAXY 19 (S2647) @ 97 W.L. (U.S.-licensed)
3) L3HARRIS to INTELSAT 5 (S2704) @ 156.9 degrees E.L. (U.S.-licensed)
4) L3HARRIS to AMC-15 (S2180) @ 105.05 degrees W.L.(U.S.-licensed)
5) L3HARRIS to GALAXY 11 satellite (S2253) @ 93.1degrees W.L. (U.S.-licensed)
6) L3HARRIS to GALAXY 3C (S2381) @ 95.05 W.L. (U.S.-licensed)
7) L3HARRIS to SES-15 (S2951) @ 129.15 degrees W.L. (United Kingdom-licensed)
8) L3HARRIS to GALAXY 16 (S2687) @ 99 degrees W.L. (U.S.-licensed)
9) L3HARRIS to INTELSAT 23 (S2831) @ 53 degrees W.L. (U.S.-licensed)
10) L3HARRIS to SES-14 (S2974)@47.5 degrees W.L. (Brazil & Netherlands - licensed)
11) L3HARRIS to SES-1 (S2807) @ 101 degrees W.L. (U.S.-licensed)
12) L3HARRIS to GALAXY 17 (S2715) @ 91 degrees W.L. (U.S.-licensed)
13) L3HARRIS to AMC-4 (S2135)@ 134.9 degrees W.L. (U.S.-licensed)
14) L3HARRIS to SES-2 @ 87 ° W.L. (U.S.-licensed satellite)
15) L3HARRIS to GALAXY 18 satellite (S2733) @ 123 W.L.(U.S.-licensed satellite)
16) L3HARRIS to GALAXY 28 (S2160) @ 89 degrees W.L. (U.S.-licensed)
17) L3HARRIS to AMC-6 (S2347) @ 139.0 degrees W.L. (U.S.-licensed)
18) L3 Titan/Linkabit to GALAXY 28 (S2160) @ 89 degrees W.L. (U.S.-licensed)
19) L3 Titan/Linkabit to HORIZONS 2 (S2423) satellite @ 73.8 degrees W.L. (U.S.-licensed)
20) L3 Titan/Linkabit to HORIZONS 1 (S2475) @ 127 degrees W.L. (Japan-licensed)
21) L3 Titan/Linkabit to GALAXY 16 (S2687) @ 99 degrees W.L. (U.S.-licensed)
22) L3 Titan/Linkabit to Temporary Entry for Internet Applications
23) L3 Titan/Linkabit to AMC 2 satellite @ 105 degrees W.L.(U.S.-Licensed)
24) L3 Titan/Linkabit to AMC-9 (S2434) @ 83 degrees W.L. (U.S.-licensed)

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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:

25) L3 Titan/Linkabit to AMC 1 (S2445) @ 103 degrees W.L. (U.S.-licensed)
26) L3 Titan/Linkabit to ESTRELA DO SUL 1 (S2474) @ 63 degrees W.L. (End of life 1-17-2011)
27) L3 Titan/Linkabit to SES-1 (S2807) @ 101 degrees W.L. (U.S.-licensed)
28) L3 Titan/Linkabit to GALAXY 26 satellite @ 93 degrees W.L. (U.S.-licensed)
29) L3 Titan/Linkabit to GALAXY 17 (S2715) @ 91 degrees W.L. (U.S.-licensed)
30) L3 Linkabit to GALAXY 28 (S2160) @ 89 degrees W.L. (U.S.-licensed)
31) L3 Linkabit to SES-1 (S2807) @ 101 degrees W.L. (U.S.-licensed)
32) L3 Linkabit to Permitted Space Station List
33) L3 Linkabit to GALAXY 26 satellite @ 93 degrees W.L. (U.S.-licensed)
34) L3 Linkabit to HORIZONS 1 (S2475) @ 127 degrees W.L. (Japan-licensed)

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)
L3 Titan/Linkabit	Mobile-1	1	0.36	L3 DATRON	FSS-4180-LP		3 AGL	
Max Gains(s): 31.9 dBi @ 14.5000 GHz 31.4 dBi @ 13.7500 GHz 31.5 dBi @ 14.1250 GHz 30.9 dBi @ 10.9500 GHz 32.3 dBi @ 11.8500 GHz 32.6 dBi @ 12.7500 GHz								
Maximum total input power at antenna flange (Watts) = 20.00								
Maximum aggregate output EIRP for all carriers (dBW) = 44.80								
L3 Linkabit	Mobile-2	200	0.46	L3 DATRON	FSS-4180-LC		3 AGL	
Max Gains(s): 35.6 dBi @ 14.5000 GHz 35.4 dBi @ 13.5000 GHz 34.0 dBi @ 11.3100 GHz 33.7 dBi @ 10.9500 GHz 34.3 dBi @ 12.7500 GHz 34.0 dBi @ 11.6700 GHz 34.6 dBi @ 12.0300 GHz 34.3 dBi @ 12.3900 GHz 3								
Maximum total input power at antenna flange (Watts) = 12.60								
Maximum aggregate output EIRP for all carriers (dBW) = 44.50								
L3HARRIS	Mobile-3	200	46	LEHARRIS TECHNOLOGIES	FSS-4180-IP		3 AGL/ 5000 AMSL	
Max Gains(s): 35.6 dBi @ 14.5000 GHz								
Maximum total input power at antenna flange (Watts) = 12.00								
Maximum aggregate output EIRP for all carriers (dBW) = 44.50								

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F) Remote Control Point:

L3 Linkabit 9890 TOWNE CENTRE DRIVE, Mobile-2, .46M. **Call Sign:** E000002
SAN DIEGO, SAN DIEGO, CA 92121
858-552-9587

L3 Titan/Linkabit 3033 SCIENCE PARK ROAD, Mobile-1, .36M. **Call Sign:** E000002
SAN DIEGO, SAN DIEGO, CA 92121
1-800-331-9401

L3HARRIS 9890 TOWNE CENTRE DRIVE, Mobile-3, .46M. **Call Sign:** E000002
SAN DIEGO, SAN DIEGO, CA 92121
858-552-9587

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 (MyIBFS) using the "Pleadings and Comments" link on the MyIBFS homepage within 10 days of the change.

6 --- Licensee must comply with the license modification and notification requirements of 47 CFR § 25.118 to change the coordinates of its authorized earth station.

8 --- Licensee must notify the Commission when all earth stations operating under this authorization are no longer operational or when they have not been used to provide any service during any 6-month operation.

316 --- L-3 Communications Titan Corporation 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) and 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); and, once it commences TDRSS operations, within 125 km of the new earth station in Blossom Point, Maryland unless and until L-3 Communications Titan Corporation enters into an agreement with NASA that NTIA has approved. L-3 Communications Titan Corporation must conform its operations to the terms of any coordination agreement with the NASA 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:

317 --- L-3 Communications Titan Corporation shall not operate in the band 14.47-14.5 GHz within the coordination zones listed in § 25.226 (d)(2) Table 1 unless and until L-3 Communications Titan Corporation enters into an agreement with the National Science Foundation that has been approved by NTIA. L-3 Communications Titan Corporation 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.

90015 --- 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) and 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) unless and until the licensee enters into an agreement with NASA that NTIA has approved. The licensee must conform its operations to the terms of any coordination agreement with the NASA and must file a copy of the agreement with the Commission within 30 days of execution.

90016 --- The licensee shall cease authorized VMES operations in the 14.0-14.2 GHz band within 125 km of any new NASA TDRSS facilities that have been identified placed public notice by the Commission's International Bureau unless and until the licensee completes agreement for new TDRSS site with NASA that NTIA has approved. The licensee must conform its operations to the terms of any coordination agreement with the NASA and must file a copy of the agreement with the Commission within 30 days of execution.

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).

90018 --- The licensee shall cease authorized VMES operations in the 14.47-14.50 GHz band within the relevant geographic zone (160 km for single-dish radio observatories and Very Large Array antenna systems and 50 km for Very Long Baseline Array antenna systems) of any new RAS sites that have been identified placed public notice by the Commission's International Bureau unless and until the licensee completes coordination agreement for the new RAS facility that NTIA/IRAC has approved. The licensee must conform its operations to the terms of any coordination agreement with NSF and must file a copy of the agreement with the Commission within 30 days of execution.

90019 --- The licensee shall use Global Positioning Satellite-related of other similar position location technology to ensure compliance with paragraphs (c) and (d) of this section.

90052 --- When the aircraft earth station network is put into operation, the licensee must file with the Commission a certification including the following information: name of the licensee, file number of the application, call sign of the antenna, date of the license and certification that the network was put into operation and will remain operational during the license period unless the license is submitted for cancellation.

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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:

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.

900616 --- When earth station network is put into operation, the licensee must file with the Commission a certification including the following information: name of the licensee, file number of the application, call sign of the antenna, date of the license and certification that the network was put into operation and will remain operational during the license period unless the license is submitted for cancellation.

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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.

FCC Form 488