

**United States of America
FEDERAL COMMUNICATIONS COMMISSION
EXPERIMENTAL
SPECIAL TEMPORARY AUTHORIZATION**

EXPERIMENTAL

(Nature of Service)

XT FX

(Class of Station)

WO9XWG

(Call Sign)

1129-EX-ST-2019

(File Number)

NAME Kepler Communications Inc.

This Special Temporary Authorization is granted upon the express condition that it may be terminated by the Commission at any time without advance notice or hearing if in its discretion the need for such action arises. Nothing contained herein shall be construed as a finding by the Commission that the authority herein granted is or will be in the public interest beyond the express terms hereof.

This Special Temporary Authorization shall not vest in the grantee any right to operate the station nor any right in the use of the frequencies designated in the authorization beyond the term hereof, nor in any other manner than authorized herein. Neither the authorization nor the right granted hereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934. This authorization is subject to the right of use of control the Government of the United States conferred by Section 706 of the Communications Act of 1934.

Special Temporary Authority is hereby granted to operate the apparatus described below:

Purpose Of Operation:

Testing and verification of antenna systems for compatibility with Keplers satellite network.

Station Locations

(1) Concord (CONTRA COSTA), CA - NL 38-00-25; WL 122-02-39

Frequency Information

Concord (CONTRA COSTA), CA - NL 38-00-25; WL 122-02-39

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
14.1875-14.3125 GHz	FX	125MG1W	640 W (ERP)	0.001 %

Special Conditions:

- (1) In lieu of frequency tolerance, the occupied bandwidth of the emission shall not extend beyond the band limits set forth above.
- (2) Licensee should be aware that other stations may be licensed on these frequencies and if any interference occurs, the licensee of this authorization will be subject to immediate shut down.
- (3) Stop Buzzer POC is Nick Spina at (437) 637-0017; Email: nspina@keplercommunications.com

This authorization effective July 12, 2019 and
will expire 3:00 A.M. EST September 25, 2019

**FEDERAL
COMMUNICATIONS
COMMISSION**



Special Conditions:

- (4) **POINT OF COMMUNICATION:** Kepler Communications Inc. (Kepler)'s non-geostationary-satellite orbit (NGSO) Ku-band satellites.

Special Conditions:

- (5) Licensee is authorized to conduct tests on a 2.4-meter Sea Tel 9711 Ku-band fixed antenna using the 14.1875-14.3125 GHz frequency band. The operations are subject to the following conditions:
- a) The authorized station's antenna performance specifications do not comply with Section 25.209 of the FCC Rules. The operation of these antennas will not be protected from harmful interference caused by other geostationary satellite networks to the extent that harmful interference would not be expected to be caused to an antenna that is compliant with the antenna performance standards of Section 25.209.
 - b) Operations in the 14.1875-14.3125 GHz frequency band must be in compliance with the equivalent power flux-density limit of 47 CFR § 25.208(k) and Article 22.5D of the ITU Radio Regulations.
 - c) Operations must maintain a 5° exclusion zone around the GSO arc at all times. As the earth station is tracking Kepler's NGSO satellites, it will automatically cease transmissions at $\theta \leq 5^\circ$.
 - d) Prior to commencement of operations with each satellite pursuant to this experimental license, Kepler shall obtain a certification regarding the notification of all satellite operators with co-frequency operations within 6 degrees longitude of each satellite, generally describing the experimental operations authorized herein, including the term thereof, and providing a point of contact for the purpose of resolving any complaints of interference. Kepler shall obtain a similar certification if, during the term of this experimental license, any of the satellites move orbit locations, or if a satellite operator commences co-frequency operations within 6 degrees longitude of each of the satellites. If the point of contact receives a complaint of harmful interference, the party receiving the complaint (if not Kepler) will notify Kepler, and Kepler shall immediately cease such operations or adjust such operations to avoid harmful interference. Kepler will submit a copy of these certification(s) to the Commission for incorporation into the record of this file.
 - e) The stations are authorized, on a non-protected and non-harmful interference basis, to transmit to the non-geostationary-orbit space stations using the 14.1875-14.3125 GHz frequency band that are authorized by the Commissions. The stations authorized herein must immediately terminate operations upon notification that such operation is causing harmful interference to any other radio system lawfully operating in the 14.0-14.5 GHz frequency band. The stations authorized herein cannot claim protection from harmful interference from any radio system lawfully operating in the 14.0-14.5 GHz frequency band.
 - f) Operation pursuant to this authorization must be in compliance with the terms of coordination agreements between Kepler NGSO Ku-band satellite operator operating in the 14.0-14.5 GHz frequency band and operators of other Ku-band geostationary space stations within six angular degrees of those space stations. In the event that another GSO FSS space station commences operation in the Ku-band at a location within six degrees of any of these space stations, earth stations operating pursuant to this temporary authority shall cease transmitting to that space station unless and until such operation has been coordinated with the new space station's operator or Licensee demonstrates that such operation will not cause harmful interference to the new co-frequency space station.
 - g) Communications between U.S.-licensed earth stations and Kepler space stations must be in compliance with all existing and future space station coordination agreements reached between the Canada and other administrations, including all coordination agreements reached between the Canada and the United States.. In the absence of a coordination agreement, such communications must comport with applicable provisions of the ITU Radio Regulations.
 - h) Communications between authorized station(s) and the Kepler NGSO space

Special stations must be in compliance with all existing and future space station coordination agreements reached between Kepler and other Ku-band NGSO satellite operators.

i) 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.

j) In addition to the conditions above, when the 2.4-meter antenna onboard ships, the operations must be in compliance with the applicable ESV's requirements set forth in Section 25.222 of the Commission's rules.

k) Licensee's ESVs must employ a tracking algorithm that is resistant to capturing and tracking adjacent satellite signals, and each station must be capable of inhibiting its own transmission in the event it detects unintended satellite tracking.

l) Licensee's ESVs must be monitored and controlled by a ground-based network control and monitoring center. Such stations must be able to receive "enable transmission" and "disable transmission" commands from the network control center and must cease transmission immediately after receiving a "parameter change" command until receiving an "enable transmission" command from the network control center. The network control center must monitor operation of each earth station to determine if it is malfunctioning, and each earth station must self-monitor and automatically cease transmission on detecting an operational fault that could cause harmful interference to a fixed satellite service network.

m) Licensee must maintain a point of contact available 24 hours per day, seven days per week, with the authority and ability to terminate operations authorized herein, for discussing interference concerns with other licensees, and must submit a letter to be included in its license file with the name and telephone number of the point of contact prior to commencing operation.