

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

EXPERIMENTAL

(Nature of Service)

WG9XHP

(Call Sign)

XT    FX MO

(Class of Station)

1186-EX-ST-2021

(File Number)

NAME Space Exploration Technologies Corp. (SpaceX)

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:**

Launch vehicle communications for mission launching from Cape Canaveral.

Station Locations

- (1) MOBILE: Cape Canaveral; Launch vehicle 1st stage
- (2) MOBILE: Launch vehicle 2nd stage, orbital
- (3) Cape Canaveral AFS (BREVARD), FL - NL 28-29-11; WL 80-32-51
- (4) MOBILE: BOAT, within 40.5 nautical miles, within 75 km, centered around NL 32-34-42; WL 75-53-21
- (5) MOBILE: Autonomous Drone Ship, within 40.5 nautical miles, within 75 km, centered around NL 32-34-42; WL 75-53-21

**Frequency Information**

MOBILE: Cape Canaveral; Launch vehicle 1st stage

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
2247.5 MHz	MO	4M84F1D	11.8 W (ERP)	0.000225 %

This authorization effective August 26, 2021 and will expire 3:00 A.M. EST February 26, 2022

**FEDERAL  
COMMUNICATIONS  
COMMISSION**



## Frequency Information

MOBILE: Cape Canaveral; Launch vehicle 1st stage

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
2255.5 MHz	MO	4M84F1D	10.8 W (ERP)	0.000225 %

MOBILE: Launch vehicle 2nd stage, orbital

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
2232.5 MHz	MO	4M14F1D	9.4 W (ERP)	0.000225 %
2272.5 MHz	MO	4M14F1D	9.6 W (ERP)	0.000225 %

Cape Canaveral AFS (BREVARD), FL - NL 28-29-11; WL 80-32-51

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
2090 MHz	FX	800KG1D	3 W (ERP)	0.000225 %

MOBILE: BOAT, within 40.5 nautical miles, within 75 km, centered around NL 32-34-42; WL 75-53-21

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
2090 MHz	MO	800KG1D	3 W (ERP)	0.000225 %

## Frequency Information

MOBILE: Autonomous Drone Ship, within 40.5 nautical miles, within 75 km, centered around NL 32-34-42; WL 75-53-21

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
2090 MHz	MO	800KG1D	3 W (ERP)	0.000225 %

## Special Conditions:

- (1) Operation is subject to prior coordination with the local Society of Broadcast Engineers, Inc. (SBE) frequency coordinator. Consult the list at <http://sbe.org/wp-content/uploads/freqcoor.pdf> to find the appropriate coordinator.
- (2) All operations shall be limited to telemetry, tracking and launch vehicle communications for SpaceX Starlink RF Mission 2-9 from either LC-40, Cape Canaveral SFS, FL or LC-39a, Kennedy Space Center, FL. This STA is limited to the single SpaceX Starlink RF Mission 2-9 from LC-40, Cape Canaveral SFS, FL or LC-39a, Kennedy Space Center, FL to include pre-launch checkout test of the command uplink from an onshore station at launch site, the first and second Stages and experimental recovery operations (command of landed stage from an onshore station at the launch site) following the launch of SpaceX Starlink RF Mission 2-9. This STA will expire as soon as the launch has been completed or 26 February 2022, whichever occurs first.
- (3) SpaceX shall be aware that future non-federal launches will be considered on a case-by-case basis, especially for requests in the band 2200-2290 MHz, and SpaceX shall have no expectations that future launches will be approved.
- (4) As soon as possible, but no later than 60 business days prior to the planned launch, SpaceX is required to provide, as a minimum, launch date/time/window and planned first- and second-stage trajectory, transmission frequencies with associated duration/cut-off time to Jimmy Nguyen ([jimmy.nguyen@us.af.mil](mailto:jimmy.nguyen@us.af.mil), AFSMO), Shaobei Xu ([shaobei.xu.1@us.af.mil](mailto:shaobei.xu.1@us.af.mil), AFSMO), Pedro Mendoza ([pedro.mendoza.1@us.af.mil](mailto:pedro.mendoza.1@us.af.mil), AFSMO), Felipe Arroyo ([felipe.arroyo-1@nasa.gov](mailto:felipe.arroyo-1@nasa.gov), NASA WFF), NASA GSFC Spectrum Office ([NASA-DL-GSFC-Spectrum-Management@mail.nasa.gov](mailto:NASA-DL-GSFC-Spectrum-Management@mail.nasa.gov)), Stephen Horan ([stephen.j.horan@nasa.gov](mailto:stephen.j.horan@nasa.gov), NASA LaRC), NOAA Satellite Operations Control Center ([Matt.G.Sullivan@noaa.gov](mailto:Matt.G.Sullivan@noaa.gov)), and NASA JSC Spectrum Office ([JSC-DL-Spectrum-Management@mail.nasa.gov](mailto:JSC-DL-Spectrum-Management@mail.nasa.gov)). In the event of last-minute changes, 48-hour notice is required.
- (5) Sixty (60) days prior to transmitting at LC-40, Cape Canaveral SFS, FL or LC-39a, Kennedy Space Center, FL, SpaceX shall coordinate and schedule their operations with Range Scheduling ([1ropschd@us.af.mil](mailto:1ropschd@us.af.mil), 321-853-5941), Jamie Bjornbak ([James.P.Bjornbak@nasa.gov](mailto:James.P.Bjornbak@nasa.gov), 321-867-6905, NASA KSC SMO), and NASA GSFC Spectrum Office ([NASA-DL-GSFC-Spectrum-Management@mail.nasa.gov](mailto:NASA-DL-GSFC-Spectrum-Management@mail.nasa.gov)), and provide a copy of the FCC license to the 45th Space Wing Spectrum Management Office, 321-853-8408, email: [45sw.erfmo@us.af.mil](mailto:45sw.erfmo@us.af.mil) and DoD EAFC, 321-853-8426, email: [45sw.dodeafc@us.af.mil](mailto:45sw.dodeafc@us.af.mil).

**Special Conditions:**

- (6) All transmissions in the band 2200-2290 MHz shall comply with national and international power flux density limits, unless otherwise coordinated and agreed to. PFD analysis and exceedances shall be provided in the FCC application and provided to the NTIA for US Government review.
- (7) The STOP BUZZER POC information, for launch operations shall be provided to NTIA (ravery@ntia.gov). This phone shall be manned 24/7.
- (8) SpaceX shall keep a log of all transmissions in the band 2200-2290 MHz and provide to the NTIA after the mission. This log shall include, as a minimum, at least date, time, frequency, EIRP density, pointing direction of all antennas. The log shall be provided to the following NTIA personnel no later than three (3) weeks after completing the mission: ravery@ntia.gov and edrocella@ntia.gov.
- (9) As soon as possible, but no later than 60 business days prior to the planned launch, SpaceX is required to provide operations and spaceflight trajectories to the Naval Surface Warfare Center, Dahlgren Division (NSWCDD). One (1) or more of five (5) blackout zones (BOZs) MAY be imposed as follows: (1) 1500 nautical mile radius centered at 22N160W; (2) 1500 nautical mile radius centered at 33.25N119.57W; (3) 1500 nautical mile radius centered at 4.11N175.2W; (4) 1500 nautical mile radius centered at 57.46N152.38W; and (5) 1500 nautical mile radius centered at 32.37N106.47W. The final launch schedule for this SpaceX mission will ultimately determine which, if any BOZ will be implemented. The primary contacts for frequency coordination: Mr. James Moneyhon, (540) 653-3477 - james.moneyhon@navy.mil, Mr. A. Jason Verdugo, (540) 653-9590 - Anthony.J.Verdugo@navy.mil, and/or Mr. Phillip B. Scyphers, (540) 653-6071 - Phillip.scyphers@navy.mil. Group email box - W\_DLGR\_NSWC\_FTMA\_FM@navy.mil.
- (10) All SpaceX operations granted on an experimental basis shall be on an unprotected, non-interference basis to authorized federal stations.
- (11) Commercial launch service providers should be aware that a satellite integrated into a launch vehicle or deployment device without a current FCC authorization may need to be removed from that vehicle or deployment device if the satellite operator's application for an FCC authorization is not acted upon favorably, or for various reasons cannot be granted within a time frame consistent with the launch schedule. Commercial launch providers should exercise due diligence to verify satellite operator's regulatory approvals prior to launch (FCC Enforcement Advisory DA 18-368).
- (12) SpaceX must avoid launching at a time that would result in the launch vehicle being visible over Wallops when the following NOAA spacecraft are also visible over the NOAA ground station in Wallops, VA (37.9454 N, 75.4616 W). NESDIS requests acknowledgement/confirmation from SpaceX that they will abide by this condition.

NOAA Satellite	NORAD ID
NOAA-15	25338
NOAA-18	28654
NOAA-19	33591