Kristi Key, 1 Rocket Road, Hawthorne, CA 90250,

United States of America
FEDERAL COMMUNICATIONS COMMISSION
EXPERIMENTAL
SPECIAL TEMPORARY AUTHORIZATION

EXPERIMENTAL	WG9XHP
(Nature of Service)	(Call Sign)
XT MO	0817-EX-ST-2021
(Class of Station)	(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 Vandenberg Air Force Base.

Station Locations

(1) MOBILE: SLC 4E, VAFB: Launch vehicle stage 1, sub-orbital
(2) MOBILE: SLC 4E, VAFB: Launch vehicle 2nd stage, orbital
(3) MOBILE: Autonomous Drone Ship, within 40.5 nautical miles, within 75 km, centered around NL 29-22-32; WL 117-50-59
(4) MOBILE: Boat, within 40.5 nautical miles, within 75 km, centered around NL 29-22-32; WL 117-50-59

Frequency Information

MOBILE: SLC 4E, VAFB: Launch vehicle stage 1, sub-orbital

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
2247.5 MHz	MO	4M84F1D	11.8 W (ERP)	0.000225 %
2255.5 MHz	MO	4M84F1D	10.8 W (ERP)	0.000225 %

This authorization effective July 01, 2021 and
will expire 3:00 A.M. EST January 01, 2022

FEDERAL COMMUNICATIONS COMMISSION

Frequency Information

MOBILE: SLC 4E, VAFB: 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 %

MOBILE: Autonomous Drone Ship, within 40.5 nautical miles, within 75 km, centered around NL 29-22-32; WL 117-50-59

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

MOBILE: Boat, within 40.5 nautical miles, within 75 km, centered around NL 29-22-32; WL 117-50-59

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 Mission 1-5 from SLC-4E, Vandenberg Air Force Base, CA. This STA is limited to the single SpaceX Starlink Mission 1-5 launch from SLC-4E, Vandenberg Air Force Base, CA 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 recovery boat) following the launch of SpaceX Starlink Mission 1-5. This STA will expire as soon as the launch has been completed or 1 January 2022, whichever occurs first.

Special Conditions:

(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 Randall Shepherd (Randall.shepherd@spaceforce.mil, USSF SPOC 30 SCS/SCPS), Jimmy Nguyen (jimmy.nguyen@us.af.mil, AFSMO), Shaobei Xu (shaobei.xu.1@us.af.mil, AFSMO), Pedro Mendoza (pedro.mendoza.1@us.af.mil, AFSMO), Felipe Arroyo (felipe.arroyo-1@nasa.gov, NASA/WFF), NASA GSFC Spectrum Office (NASA-DL-GSFC-Spectrum-Management@mail.nasa.gov), Stephen Horan and Kenneth Dudley (stephen.j.horan@nasa.gov and kenneth.l.dudley@nasa.gov, NASA/LaRC), NOAA Satellite Operations Control Center (Matt.G.Sullivan@noaa.gov), Richard Ontiveros, (richard.ontiveros1@navy.mil, NMSC), Cathy Sham (catherine.c.sham@nasa.gov) and NASA JSC Spectrum Office (JSC-DL-Spectrum-Management@mail.nasa.gov). In the event of last-minute changes, 48-hour notice is required.

(5) 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.

(6) The STOP BUZZER POC information, for launch operations shall be provided to NTIA (ravery@ntia.doc.gov). This phone shall be manned 24/7.

(7) Prior to the planned operating at Vandenberg Space Force Base (VSFB), CA, SpaceX is required to coordinate and schedule their operations with 2 ROPS/DOS Range Scheduling (805) 606-8825, 2 ROPS/DOS Section (2ROPS.DOS@us.af.mil).

(8) The Department of the Navy has evaluated the subject STA and notes that these requirements have the potential to conflict with on-going naval and DoD test activities. NSWCDD/E3 requires operations and spaceflight trajectories to be submitted NLT 60 days prior to launch to the Naval Surface Warfare Center, Dahlgren Division (NSWCDD). One (1) or more of six (6) 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; and (4) 1500 nautical mile radius centered at 57.46N152.38W; (5) 1500 nautical mile radius centered at 32.37N106.47W. (6) 1500 nautical mile radius centered at 57.34N7.35W. The final launch schedule for this SpaceX mission will ultimately determine which, if any BOZ will be implemented. In addition, SpaceX MUST also comply with any and all restrictions that may be levied by NSWCDD. Please let us know if you have any changes, questions, comments, recommendations, etc. Group email box. W_DLGR_NSWC_FTMA_FM@navy.mil. 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.

(9) 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.doc.gov and edrocella@ntia.doc.gov.

Special Conditions:

(10) 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).

(11) SpaceX avoid launching at a time that would result in their launch vehicle being visible over Alaska when the following NOAA spacecraft are also visible over the NOAA ground station in Fairbanks, Alaska (64.9725 N, 147.5011 W), then there will be no impact to NOAA satellite networks. Commerce requests acknowledgement from SpaceX that they will abide by this operational condition.

NOAA Satellite	NORAD ID
NOAA-15	25338
NOAA-18	28654
NOAA-19	33591
Suomi-NPP	37849
NOAA-20	43013
DMSP-15	25991
DMSP-16	28054
DMSP-17	29522
DMSP-18	35951