

**United States of America
FEDERAL COMMUNICATIONS COMMISSION
EXPERIMENTAL
RADIO STATION CONSTRUCTION PERMIT
AND LICENSE**

EXPERIMENTAL

(Nature of Service)

WH9XVR

(Call Sign)

XT MO

(Class of Station)

0019-EX-TC-2015

(File Number)

NAME Orbital Sciences Corporation

Subject to the provisions of the Communications Act of 1934, subsequent acts, and treaties, and all regulations heretofore or hereafter made by this Commission, and further subject to the conditions and requirements set forth in this license, the licensee hereof is hereby authorized to use and operate the radio transmitting facilities hereinafter described for radio communications in accordance with the program of experimentation described by the licensee in its application for license.

Station Locations

- (1) MOBILE: From WFF, VA launch into low earth orbit., centered around NL 37-49-52; WL 75-29-28
- (2) MOBILE: From WFF, VA launch into low earth orbit., centered around NL 37-49-52; WL 75-29-28
- (3) MOBILE: From WFF, VA launch into low earth orbit., centered around NL 37-49-52; WL 75-29-28

Frequency Information

MOBILE: From WFF, VA launch into low earth orbit., centered around NL 37-49-52; WL 75-29-28

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
2239.76-2243.24 MHz	MO	3M48F1D	3.3 W (ERP)	0.002 %
2267.76-2271.24 MHz	MO	3M48F1D	4.1 W (ERP)	0.002 %

This authorization effective February 03, 2015 and
will expire 3:00 A.M. EST March 15, 2015

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COMMUNICATIONS
COMMISSION**



Frequency Information

MOBILE: From WFF, VA launch into low earth orbit., centered around NL 37-49-52; WL 75-29-28

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
2286.76-2290.24 MHz	MO	3M48F1D	3.4 W (ERP)	0.002 %

MOBILE: From WFF, VA launch into low earth orbit., centered around NL 37-49-52; WL 75-29-28

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
5758-5772 MHz	MO	14M0P0N	302 W (ERP)	2 %

Special Conditions:

- (1) All Orbital Sciences operations granted on an experimental basis shall be on an unprotected, non-interference basis to authorized federal stations.
- (2) All operations shall be limited to telemetry and tracking. This STA is limited to the single Antares launch scheduled for no earlier than 14 September, 2014, to support the delivery of the Cygnus Spacecraft to Low Earth Orbit as part of the NASA Commercial Orbital Services (COTS) program. This STA will expire as soon as the launch has been completed or by 14 March 2015, whichever occurs first. Any future launches will need to submit applications to the FCC to be re-coordinated with NTIA.
- (3) Orbital Sciences 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 Orbital Sciences shall have no expectations that future launches will be approved.
- (4) 2286.76-2290.24 MHz transmission shall be terminated prior to the LV (Antares) coming into view of the NASA Madrid deep space communications complex to prevent interference. Link termination time for this link and planned vehicle trajectory shall be provided no later than seven days prior to the planned launch to Farzin Manshadi (Farzin.manshadi@jpl.nasa.gov, 818-354-0068).
- (5) As soon as possible, but no later than seven days prior to the planned launch, Orbital Sciences is required to provide Mr. Jimmy Nguyen (jimmy.nguyen@us.af.mil, (301-225- 3729), Air Force Spectrum Management Office (AFSMO), Rich Rood (richard.l.rood@nasa.gov, 661-276-2138, NASA Dryden SMO), Farzin Manshadi (farzin.manshadi@jpl.nasa.gov, 818-354-0068, NASA JPL/DSN SMO), Scott Galbraith (vincent.s.galbraith@nasa.gov, 301-286-5089, NASA GSFC SMO), Vip Vipavetz (kevin.g.vipavetz@nasa.gov, 757-864-3817, NASA LARC SMO), the NOAA Satellite Operations Control Center (SOCC) Shift Supervisor (301) 817-4198 with the planned launch date/time/window/duration. In the event of last minute changes, 48 hour notice is requested.

Special Conditions:

- (6) Prior to transmitting at Wallops Flight Facility, Wallops Island, VA, Orbital Sciences shall coordinate and schedule their operations through NASA POC's as specified in NASA/OSC service Agreements and copy WFF Spectrum Manager, Felipe Arroyo, (felipe.arroyo-1@nasa.gov, 757-824-1623) , and Scott Galbraith (vincent.s.galbraith@nasa.gov, 301-286-5089, NASA GSFC SMO).
- (7) The STOP BUZZER POC information, for launch operations shall be provided to NTIA (bmitchell@ntia.doc.gov). This phone shall be manned 24/7.
- (8) All transmissions in the band 2200-2290 MHz will comply with national and international power flux-density limits.
- (9) Orbital Sciences shall keep a log of all transmissions in the band 2200-2290 MHz that would be provided to NTIA after the mission. This log should include at least date, time, frequency, eirp density, and pointing direction of the antenna. The log should be provided to the following people at NTIA: bmitchell@ntia.doc.gov and edrocella@ntia.doc.gov.
- (10) Orbital Sciences must coordinate with the Naval Surface Warfare Center, Dahlgren Division (NSWCDD), Mr. James Moneyhon (540) 653-3477, or james.moneyhon@navy.mil a minimum of 30-days prior to any operations to mitigate harmful interference to Navy and Marine Corps operations. Orbital Sciences must also comply with any and all restrictions that may be levied by the Naval Surface Warfare Center, Dahlgren Division (NSWCDD).