

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

EXPERIMENTAL

(Nature of Service)

WH2XVF

(Call Sign)

XD FX

(Class of Station)

0331-EX-CM-2019

(File Number)

NAME Northrop Grumman Innovation Systems, Inc.

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.

Operation: In accordance with Sec. 5.3(i) of the Commission's Rules

Station Locations

(1) Chandler (MARICOPA), AZ - NL 33-15-23; WL 111-53-11

Frequency Information

Chandler (MARICOPA), AZ - NL 33-15-23; WL 111-53-11

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
1575.42 MHz	FX	20M4W7D	138 pW (ERP)	0.6 %

Special Conditions:

- (1) The occupied bandwidth of the emission shall not extend beyond the band limits set forth above.
- (2) GPS re-radiators are limited to a maximum ERP value that will result in power levels not to exceed a power spectral density of -140 dBm/24 MHz measured at a distance of 100 ft outside the building of operation. Any malfunction, misalignment, or tampering of the equipment or its location which results in an increased power spectral density outside the building could cause harmful radio frequency interference to GPS receivers, including those in aircraft and/or ground based facilities.
- (3) 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.

This authorization effective December 30, 2019 and
will expire 3:00 A.M. EST June 01, 2021

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Special Conditions:

- (4) GPS users in the area of potential interference to GPS reception must be notified that GPS information may be impacted for periods of time.
- (5) Operation is limited to activity for the purpose of testing radionavigation satellite service (RNSS) equipment and systems.
- (6) The test equipment shall only be used indoors and shall be under the control of Orbital ATK, Inc..
- (7) Orbital ATK, Inc. shall post signs on doors to the test area notifying that, "GPS re-radiator is in use and the GPS information you receive may be in error."
- (8) GPS re-radiators must operate in accordance with Section 8.3.28 of the NTIA Manual. Power spectral density of the signal should be very well controlled beyond the building.
- (9) The designated point-of-contact to terminate transmissions if interference occurs is WILLIAM ROTHENBACH 480 814-6009