FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

APPROVED BY OMB
3060-0065
Expires 9/30/98

APPLICATION FOR NEW OR MODIFIED RADIO STATION AUTHORIZATION UNDER PART 5 OF FCC RULES - EXPERIMENTAL RADIO SERVICE (OTHER THAN BROADCAST)

1. Applicant's Name and Post Office address (Street address, city, state, and ZIP Code. See instruction No. 4)

Northrop Grumman Corporation
c/o Verner, Liipfert, Bernhard
901 15th Street, N.W.
Suite 700
Washington, D.C. 20005
Attn: Thomas J. Keller

DO NOT WRITE IN THIS BLOCK

File No.

5651-EX-PL-97

2(a). Application for (check only one box)

☒ New station ☐ Modification of existing authorization

2(b). For Modification indicate below:

File No.: Call Sign: WA2XIJ

3. Application for Modification: Check the box beside all particulars to be modified. Check either addition or replacement to indicate whether the change is an addition or a replacement of parameters in the current authorization.

☐ FREQUENCY - ☐ addition or ☐ replacement?

☐ EMISSION - ☐ addition or ☐ replacement?

☐ POWER - ☐ addition or ☐ replacement?

☐ LOCATION - ☐ addition or ☐ replacement?

☐ OTHER PARTICULARS - addition or replacement? (Describe below or in attached EXHIBIT No. _____)

4. Particulars of Operation (see instruction below)

Frequency (state whether kHz or MHz)	POWER			EMISSION	MODULATING SIGNAL	NECESSARY BANDWIDTH (KHz)
(A)	(B)	(C)	(D)	(E)	(F)	(G)
16-17GHz	14KW	24.1MW	Peak	1G2895 QXN	.2-33uS pulse 10nS rise time 600 MHz linear FM	1.289 Ghz
15.5-17.5						
16500.5 (CHIRP)						

(A) List each frequency or frequency band separately. (If more space is required, attach as EXHIBIT No. _____)

(B) Insert maximum R.F. output power at the transmitter terminals. Specify units.

(C) Insert maximum effective radiated power from the antenna (If pulsed emission, specify peak power). Specify units.

(D) Insert "MEAN" or "PEAK" (See definitions in Part 5).

(E) List each type of emission separately for each frequency. (See Section 2.201 of FCC Rules.)

(F) Insert as appropriate for the type of modulation:
(1) the maximum speed of keying in bauds;
(2) maximum audio modulating frequency;
(3) frequency deviation of carrier;
(4) pulse duration and repetition rate.
For complex emissions, describe in detail in the space provided below.

(G) Describe how the necessary bandwidth was determined in space provided below.

Using $Bn = \frac{1.79}{\sqrt{trt}} + 2Bd = \frac{1.79}{\sqrt{.01 \times .2}} + 1200 = 1.289Ghz$

5(a). Proposed location of transmitter and transmitting antenna (check only one box to indicate type of operation):

☐ FIXED/BASE ☐ MOBILE ☒ BASE AND MOBILE

5(b). If permanently located at a FIXED location, give below:

State	County	City or Town
CT	Fairfield	Norwalk

Number and street (or other indication of location)

10 Norden Place

ground spot

5(c). If mobile, describe the exact area of operation

Airborne, 1000KM radius of BWI Airport, 10,000m max altitude.

5(b)(1). Enter geographical coordiantes exact to the nearest second (see instruction 10)

North Latitude (DD-MM-SS)			West Longitude (DD-MM-SS)		
41°	6'	40"	73°	23'	28"

5(c)(1) Enter geographical coordinates of the approximate center of mobile operation (see instruction 10.)

North Latitude			West Longitude		
39°	10'	26"	76°	40'	12"

5(d). Datum (see instruction 10): ..... ☒ NAD 27 ☐ NAD 83

6. Is a directional antenna (other than radar) used? ☐ YES ☒ NO

If "YES", give the following information:

(a) Width of beam in degrees at the half-power point _____

(b) Orientation in horizontal plane _____ (c) Orientation in vertical plane _____

7. Is this authorization to be used for fulfilling the requirement of a government contract with an agency of the United States Government? ☐ YES ☒ NO

If "YES", attach as EXHIBIT No. _____ a narrative statement describing the government project, agency and contact number.

8. Is this authorization to be used for the exclusive purpose of developing radio equipment for export to be employed by stations under the jurisdiction of a foreign government?

☒ YES ☐ NO

If "YES", attach as EXHIBIT No. 1 the following information: Provide the contract number and the name of the foreign government concerned.

9. Is this authorization to be used for providing communications essential to a research project? (The radio communication is not the objective of the research project).

☐ YES ☒ NO

If "YES", attach as EXHIBIT No. _____ a narrative statement provding the following information:

(a) A description of the nature of the research project being conducted.

(b) A showing that the communications facilities requested are necessary for the research project involved.

(c) A showing that existing communications facilities are inadequate.

10. If all the answers to Items 7, 8, and 9, are "NO", attach as EXHIBIT No. _____ a narrative statement describing in detail the following:

(a) The complete program of research and experimentation proposed including description of equipment and theory of operation.

(b) The specific objectives sought to be accomplished.

(c) How the program of experimentation has a reasonable promise of contribution to the development, extension, expansion, or utilization of the radio art, or is along line not already investigated.

11(a). Give an estimate of the length of time that will be required to complete the program of experimentation proposed in this application: 4 years

(b) If less than 2 years, give the length of time in months that the authorization requested in this application will be required: _____

12. Would a Commission grant of this application come within Section 1.1307 of the FCC Rules, such that it may have a significant environmental impact (see instruction 11)? ☐ YES ☒ NO

If "YES", attach as EXHIBIT No. _____ an Environmental Assessment as required by Section 1.1311.

13. List below transmitting equipment to be installed (if experimental, so state):

MANUFACTURER	MODEL NUMBER	NO. OF UNITS
Northrop Grumman	2277-19000-102	1

14. Is the equipment listed in Item 13 capable of station identification pursuant to Section 5.152? ☐ YES ☒ NO

15. Will the antenna extend more than 6 meters above the ground, or if mounted on an existing building, will it extend more than 6 meters above the building, or will the proposed antenna be mounted on an existing structure other than a building? ☐ YES ☒ NO

If "YES", give the following (see instruction 9):

(a) Overall height above ground to tip of antenna is _____ meters.

(b) Elevation of ground at antenna site above mean sea level is _____ meters.

(c) Distance to nearest aircraft landing area is _____ kilometers.

(d) List any natural formations of existing man-made structures (hills, trees, water tanks, towers, etc.) which, in the opinion of the applicant, would tend to shield the antenna from aircraft and thereby minimize the aeronautical hazard of the antenna.

(e) Submit as EXHIBIT No. _____, a vertical profile sketch of total structure including supporting building, if any, giving heights in meters above ground for all significant features. Clearly indicate existing portion, noting particulars of aviation obstruction lighting already available.

16. Applicant is: *(Check only one box)*

☐ INDIVIDUAL ☐ ASSOCIATION ☐ PARTNERSHIP ☒ CORPORATION

☐ OTHER (describe in space provided below)

17. Is applicant a foreign government or a representative of a foreign government? ☐ YES ☒ NO

18. Has applicant or any party to this application had any FCC station license or permit revoked or had any application for permit, license or renewal denied by this Commission? ☐ YES ☒ NO

If "YES", attach as EXHIBIT No. _____, a statement giving call sign of license or permit revoked and relate circumstances.

19. Will applicant be owner and operator of the station? ☒ YES ☐ NO

20. Give name, title, and telephone number (include area code), and Internet e-mail address (if applicable) of person who can best handle inquiries pertaining to this application.

Steve Balaz, Spectrum Licensing Specialist 410-765-5626

21. **APPLICANT ANTI-DRUG ABUSE CERTIFICATION:**

By checking "YES", the individual applicant certifies that he or she is eligible for this license. This requires that he or she is not subject to a denial of federal benefits, including FCC benefits, as a result of a drug offense conviction pursuant to Section 5301 of the Anti- Drug Abuse Act of 1988, 21 U.S.C. 862. A non- individual applicant, e.g., corporation, partnership or other unincorporated association, certifies that no party to the application is subject to a denial of federal benefits, pursuant to that section. For definition of a "party" for these purposes, see 47 CFR 1.2002(b). ☒ YES ☐ NO

22. List below all exhibits in numerical sequence and the item number of form requiring the exhibit identified.

EXHIBIT NUMBER	ITEM NO. OF FORM	EXHIBIT NUMBER	ITEM NO. OF FORM	EXHIBIT NUMBER	ITEM NO. OF FORM
1	*8*				

23. CERTIFICATION:

Attention: Read this certification carefully before signing this application.

THE APPLICANT CERTIFIES THAT:

(a) Copies of FCC Rule Parts 2 and 5 are on hand; and
(b) Adequate financial appropriations have been made to carry on the program of experimentation which will be conducted by qualified personnel; and
(c) All operations will be on an experimental basis in accordance with Part 5 and other applicable rules, and will be conducted in such a manner and at such a time as to preclude harmful interference to any authorized station; and
(d) Grant of the authorization requested herein will not be construed as a finding on the part of the Commission:
  (1) that the frequencies and other technical parameters specified in the authorization are the best suited for the proposed program of experimentation, and
  (2) that the applicant will be authorized to operate on any basis other than experimental, and
  (3) that the Commission is obligated by the results of the experimental program to make provision in its rules including its table of frequency allocations for applicant's type of operation on a regularly licensed basis.

APPLICANT CERTIFIES FURTHER THAT:

(e) All the statements in the application and attached exhibits are true, complete and correct to the best of the applicant's knowledge; and
(f) The applicant is willing to finance and conduct the experimental program with full knowledge and understanding of the above limitations; and
(g) The applicant waives any claim to the use of any particular frequency or of the electromagnetic spectrum as against the regulatory power of the USA.

Signed and dated this 20th day of December, 19 96

Name of Applicant Northrop Grumman Corporation
(must correspond with name given on page 1)

By James C. Johnson
(print) *(signature)*

Title Vice President and Corporate Secretary

Check appropriate classification:

☐ Individual applicant ☐ Member of applicant partnership

☐ Authorized employee ☒ Office of applicant corporation or association

WILLFUL FALSE STATEMENTS MADE ON THIS FORM ARE PUNISHABLE BY FINE AND/OR IMPRISONMENT (U.S. Code, Title 18 Section 1001), AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION PERMIT (U.S. Code, Title 47, Section 312(a)(1), AND/OR FORFEITURE (U.S. Code, Title 47, Section 503).

NOTIFICATION TO INDIVIDUALS UNDER PRIVACY ACT OF 1974
AND THE PAPERWORK REDUCTION ACT OF 1980

Information requested through this form is authorized by the Communications Act of 1934, as amended, and specified by Section 308 therein. The information will be used by Federal Communications Commission staff to determine eligibility for issuing authorizations in the use of the frequency spectrum and to effect the provisions of regulatory responsibilities rendered by the Commission by the Act. Information requested by this form will be available to the public unless otherwise requested pursuant to 47 CFR 0.459 of the FCC Rules and Regulations. Your response is required to obtain this authorization.

Public reporting burden for this collection of information is estimated to average four (4) hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden to the Federal Communications Commission, Records Management Branch, Paperwork Reduction Project (3060-0065), Washington, DC 20554. **DO NOT send completed applications to this address.** Individuals are not required to respond to this collection unless it displays a currently valid OMB control number.

THE FOREGOING NOTICE IS REQUIRED BY THE PRIVACY ACT OF 1974, P.L. 93-579, DECEMBER 31, 1974, 5 U.S.C. 552a(e)(3), AND THE PAPERWORK REDUCTION ACT OF 1980, P.L. 96-511, DECEMBER 11, 1980, 44 U.S.C. 3507.