

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

1. Applicant's Name and Post Office address (Give street, city, state, and ZIP Code, see Instruction No. 1) Radiation Systems, Inc. Technical Products Division 1501 Moran Road Sterling, VA 20166 Attention: J. H. Arnold, Jr. President				DO NOT WRITE IN THIS BLOCK File No. 3339-EX-PL 92																																																																											
2.(a) Class of station applied for Fixed				2.(b) Nature of Service Experimental - Research-Product Testing																																																																											
3.(a) Application for (check only one box) ☐ New Station ☒ Modification of existing authorization				3.(b) For Modification indicate below File No. _____ Call Sign _____																																																																											
4. Application for modification indicate change in (check all that apply) ☐ Frequency ☐ Emission ☐ Power ☐ Location ☐ Other particulars (describe below or in attached Exhibit No. _____)																																																																															
5. Particulars of Operation see instructions below) <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Frequency (State Whether kHz or MHz) (A)</th> <th colspan="3">POWER</th> <th rowspan="2">EMISSION (E)</th> <th rowspan="2">MODULATING SIGNAL (F)</th> <th rowspan="2">NECESSARY BANDWIDTH (kHz) (G)</th> </tr> <tr> <th>(B)</th> <th>(C)</th> <th>(D)</th> </tr> </thead> <tbody> <tr><td>50-250</td><td>300 mW</td><td>6 dbw</td><td>MEAN</td><td>AO/A3</td><td>1000 Hz</td><td>2</td></tr> <tr><td>250-500</td><td>300 mW</td><td>6 dbw</td><td>MEAN</td><td>AO/A3</td><td>1000 Hz</td><td>2</td></tr> <tr><td>500-1000</td><td>300 mW</td><td>6 dbw</td><td>MEAN</td><td>AO/A3</td><td>1000 Hz</td><td>2</td></tr> <tr><td>1000-2000</td><td>500 mW</td><td>18 dbw</td><td>MEAN</td><td>AO/A3</td><td>1000 Hz</td><td>2</td></tr> <tr><td>2000-4000</td><td>20 watts</td><td>20 dbw</td><td>MEAN</td><td>AO/A3</td><td>1000 Hz</td><td>2</td></tr> <tr><td>4000-8000</td><td>20 watts</td><td>20 dbw</td><td>MEAN</td><td>AO/A3</td><td>1000 Hz</td><td>2</td></tr> <tr><td>8000-12400</td><td>5 watts</td><td>22 dbw</td><td>MEAN</td><td>AO/A3</td><td>1000 Hz</td><td>2</td></tr> <tr><td>12400-18000</td><td>5 watts</td><td>22 dbw</td><td>MEAN</td><td>AO/A3</td><td>1000 Hz</td><td>2</td></tr> <tr><td>20000-45500</td><td>300 mW</td><td>6 dbw</td><td>MEAN</td><td>AO/A3</td><td>1000 Hz</td><td>2</td></tr> </tbody> </table>							Frequency (State Whether kHz or MHz) (A)	POWER			EMISSION (E)	MODULATING SIGNAL (F)	NECESSARY BANDWIDTH (kHz) (G)	(B)	(C)	(D)	50-250	300 mW	6 dbw	MEAN	AO/A3	1000 Hz	2	250-500	300 mW	6 dbw	MEAN	AO/A3	1000 Hz	2	500-1000	300 mW	6 dbw	MEAN	AO/A3	1000 Hz	2	1000-2000	500 mW	18 dbw	MEAN	AO/A3	1000 Hz	2	2000-4000	20 watts	20 dbw	MEAN	AO/A3	1000 Hz	2	4000-8000	20 watts	20 dbw	MEAN	AO/A3	1000 Hz	2	8000-12400	5 watts	22 dbw	MEAN	AO/A3	1000 Hz	2	12400-18000	5 watts	22 dbw	MEAN	AO/A3	1000 Hz	2	20000-45500	300 mW	6 dbw	MEAN	AO/A3	1000 Hz	2
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(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). (D) Insert "MEAN" or "PEAK" (See definitions in Part 5). (E) List each type of emission separately for each frequency. (See Section 2.201 FCC Rules.) (F) Insert the following information for each type of emission: for A1, insert maximum speed of keying in bauds for A2, insert maximum audio modulating frequency and maximum speed of keying in bauds for A3, insert maximum audio modulating frequency for F1, insert mark and space frequencies, maximum speed of keying in bauds for F2, insert maximum audio modulating frequency, frequency deviation of carrier, maximum speed of keying in bauds for F3, insert maximum audio modulating frequency and frequency deviation of carrier for P0, insert pulse duration and repetition rate for other emissions describe in detail in space provided below. (G) Describe how the necessary bandwidth was determined in space provided below. Bandwidth - @M; M = Max. Modulating Frequency * Emission is upkeyed 1000 Hz amplitude modulated.																																																																															

6(a). Proposed location of transmitter and transmitting antenna (Check only one box)

☒ FIXED/BASE☐ MOBILE☐ BASE & MOBILE

(b) If permanently located at a fixed location, give below

State	County	City or Town
Virginia	Loudoun	Arcola

Number and street (or other indication of location)

Route 772

Geographical coordinates exact to the nearest second

North Latitude	West Longitude
38° 59' 40"	77° 31' 0"

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

Geographical coordinates of the approximate center of proposed area of operation (mobile applications)

North Latitude	West Longitude
° ' "	° ' "

Place an "X" in the appropriate column

YES NO

7. Is a directional antenna (other than radar) used?

XX

If "YES", give the following information:

(a) Width of beam in degrees at the half-power point. See Exhibit No. A

(b) Orientation in horizontal plane _____

(c) Orientation in vertical plane _____

8. Is this authorization to be used for fulfilling the requirements of a government contract with an agency of the United States Government?

XX

If "Yes", attach FCC Form 440-A, Supplemental Information for Applications in the Experimental Radio Service Involving Government Contract, in triplicate to this application.

9. 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?

XX

If "Yes", attach as EXHIBIT No. _____, the following information:

(a) The contract number and the name of the foreign government concerned.

(b) The daily hours of operation and the estimated date of the beginning and end of the specific time period for which the authorization is required.

10. 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).

XX

If "Yes", attach as EXHIBIT No. _____, a narrative statement providing 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.

11. If all the answers to Items 8, 9, and 10 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 lines not already investigated.

12. (a) Give an estimate of the length of time that will be required to complete the program of experimentation proposed in this application 25 years

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

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

MANUFACTURER

TYPE

NO. OF UNITS

See Exhibit No. B

14. State provisions that will be made for measurement and periodic checking of the station's technical characteristics (power, frequency, bandwidths) to insure compliance with terms of license.

Radiation Systems, Inc. maintains a calibration system in accordance with MIL-C-45662 Rev. A. All equipment is maintained on a 6-month calibration cycle.

Place an "X" in the appropriate column

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?

XX

If "Yes", give the following (See Instruction 9):

(a) Overall height above ground to tip of antenna is 24.4 meters. (80 ft.)(b) Elevation of ground at antenna site above mean sea level is 91.5 meters. (300 ft.)(c) Distance to nearest aircraft landing area is 6.6 (4 mi.) kilometers.

(d) List any natural formations or 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.

Trees on and around range site which exceed the height of any anticipated structure.

(e) Submit as EXHIBIT No. C, 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. Does this application propose a developmental program of experimentation which requires the submission of a petition? (See Instructions 10 and 11)

XX

If "Yes", attach the petition as EXHIBIT No. _____.

17. Applicant is (check only one box)

☐ Individual☐ Association☐ Partnership☒ Corporation☐ Other (describe below)

18. Is applicant a foreign government or a representative of a foreign government?

XX

19. 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?

XX

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

Place "X" in the appropriate column.

YES NO

20. Will applicant be owner and operator of station?

XX

If "No", explain applicant's relation to station.

21. Will applicant have absolute control of station, both as to physical operation and service conducted?

XX

If "No", explain circumstances and give name of person who will have control of station.

22. Will the transmitter be operated with licensed operator on duty at a remote control point?

XX

If "Yes", the following information must be provided. (If there is to be a licensed operator on duty at the transmitter, data required by this item may be omitted.)

(a) Location of remote control point. (If more than one remote control point is involved, attach as EXHIBIT No. _____, a statement giving location of each remote control point, plan of operation, etc.)

State

County

City or Town

Street & No.

(b) By what means will the transmitter be rendered inaccessible?

(c) Can transmitter be placed in an inoperative condition from the remote control point?

(d) Describe below the equipment to be used to enable the operator at the control point to determine when there is a deviation from the terms of the station license or when operation is not in accordance with the Commission's Rules governing the class of station involved.

23. Give name, title, and telephone number (include area code) of person who can best handle inquiries pertaining to this application.

Gil Ramos, Range Manager, (703) 450-5680

Don Matz, Vice President of Feed Development, (703) 450-5680

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

EXHIBITS AND ITEM NO. OF FORM

Exhibit Number	Item No. of Form	Exhibit Number	Item No. of Form	Exhibit Number	Item No. of Form
A	7				
B	13				
C	1				

25. CERTIFICATION

ATTENTION: Read this certification carefully before signing this application.

THE APPLICANT CERTIFIES THAT:

- (a) Copies of the FCC Rules 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 ether as against the regulatory power of the USA.

Signed and dated this 13 day of August, 19 92.

Name of Applicant Radiation Systems, Inc., Technical Products Division

correspond with name given on page 1)

By J. H. Arnold, Jr.

(print)

(signature)

Title President

WILLFUL FALSE STATEMENTS MADE ON THIS FORM ARE PUNISHABLE BY FINE AND IMPRISONMENT. U. S. CODE, TITLE 18, SECTION 1001.

Check Appropriate Classification

- ☐ Individual Applicant
- ☐ Member of Applicant Partnership
- ☒ Officer of Applicant Corporation or Association
- ☐ Authorized Employee

NOTIFICATION TO INDIVIDUALS UNDER PRIVACY ACT OF 1974

Information requested through this form are authorized by the Communications Act of 1934, as amended, and specifically 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 the Commission by the Act. Information requested by this form will be available to the public unless otherwise requested pursuant to Section 0.459 of FCC Rules and Regulations.

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).