

Douglas Young

From: Douglas Young
Sent: Thursday, December 13, 2007 3:40 PM
To: 'Tim Royce'
Subject: Request for Info - File #'s 0111-, 0175-, 0207-, 0258- and 0359-EX-PL-2007

Mr. Royce:

NTIA has requested further information on your applications before processing can go any further. I need more information on the antennas you are using to transmit. The first is polarization. From the NTIA Manual, could you respond with one of the choices in Section 9.8.2, paragraph 26(e):?

26. XAP--Transmitter Antenna Polarization (3 Characters--1 Occurrence)

a. Transmitter antenna polarization is required on applications:

- (1) for assignments above 1000 MHz that must be coordinated by the IRAC with the Canadian Department of Communications pursuant to Section 3.4.6, Appendices 3 and 4 of Arrangement D; or
- (2) for transmitting Earth or Terrestrial stations (including experimental stations) employing Earth station techniques; or
- (3) for transmitting Space or Terrestrial stations (including experimental stations) using Space station techniques;
- (4) for assignments to TERRESTRIAL STATIONS at 420 MHz and above.

b. Transmitter Antenna Polarization is not required on applications for:

- (1) Experimental stations except as indicated in 26.a.(2) and (3);
- (2) Mobile stations;
- (3) Portable stations;
- (4) Radiolocation mobile stations;
- (5) Radionavigation mobile stations;
- (6) Transportable stations;
- (7) Group assignments;
- (8) A period of six months or less;
- (9) Meteorological Aids in the 1660-1700 MHz band;
- (10) TACAN/DME stations in the 960-1215 MHz band;
- (11) Aeronautical Telemetry stations in the 1435-1535, 2200-2290 and 2310-2390 MHz bands.

c. This field may be completed on other applications at the option of the applicant.

d. If more than one antenna is to be used, insert the polarization of the antenna to be used most frequently; however, for a space station, antenna polarization may be listed for up to three antennas, provided they are entered in the same sequence as the antenna data entered in the TRANSMITTER ANTENNA DIMENSIONS (XAD) field.

e. Insert one of the following letters or combination of letters to indicate the antenna(s) polarization:

A--Elliptic, Left
B--Elliptic, Right
D--Rotating
E--Elliptical
F--45 degrees
H--Horizontal
J--Linear
L--Left Hand Circular
M--Oblique Angled, Left
N--Oblique Angled, Right
O--Oblique Angled, Crossed

R--Right Hand Circular
S--Horizontal and Vertical
T--Right and Left Hand Circular
V--Vertical
X--Other

Examples: XAP01 V (Vertically polarized transmissions)

XAP01 FJL (45 degrees, Linear, and Left Hand Circular polarized transmissions for three space station antennas)

The second thing I need goes in a field called "Transmitter Antenna Dimensions," as defined in Section 9.8.2, paragraph 29. Please see Section 9.8.2, paragraph 29(b)(4) for the necessary data fields and their definitions:

29. XAD--Transmitter Antenna Dimensions (24 Characters--1 Occurrence)

This field shall be completed in accordance with the following procedures. Each Entry is dependent upon frequency range and type of station, i.e., TERRESTRIAL, EARTH or SPACE. Antenna gain must be entered in decibels with reference to an isotropic (dBi) source. Where gain is derived from a source in reference to a dipole (dBd), the dBi gain can be determined by adding 2.15 to the dBd gain ($\text{dBd} + 2.15 = \text{dBi}$) (ref: ITT Reference Data for Radio Engineers). Enter data according to the following:

a. TERRESTRIAL Stations BELOW 29890 kHz:

(1) This field may be left blank if the ANTENNA LOCATION (XAL) is an area representing multiple transmitting stations, e.g., Chicago District, or if the application bears either of the Notes S362 or S189.

(2) Gain is required on applications for assignments to fixed (FX) and aeronautical fixed (AX) stations in the band 3000 to 29890 kHz. Only the gain shall be entered in characters 1-3 of this field.

Characters 4-24 shall be blank. The following formatting instructions apply: Insert in characters one and two, an appropriate two digit number which represents the gain; use a leading zero if the gain is less than ten. Insert the letter G in the third character (e.g., 04G, 20G). If the gain is zero it shall be entered as 00G.

(3) On all other applications for assignments below 29890 kHz, this field may be completed at the option of the applicant. However, if completed it must be in accordance with (2) above.

b. TERRESTRIAL Stations at 29890 kHz and ABOVE:

(1) This field may be left blank on applications for:

(a) Experimental stations;

(b) Mobile stations;

(c) Portable stations;

(d) Radiolocation mobile stations;

(e) Radionavigation mobile stations;

(f) Transportable stations;

(g) Group assignments;

(h) A period of six months or less;

(i) Marker Beacons in the 74.8-75.2 MHz band;

(j) VOR/ILS in the 108-117.975 MHz band;

(k) Stations in the Aeronautical Mobile service in the 117.975-136 MHz band;

(l) Stations in the Aeronautical and Maritime Mobile service in the 138-144, 148-150.8, 157.0375-157.1875, 225-328.6, 335.4-399.9 MHz bands, or on the frequencies 156.6, 156.7, 161.6 MHz;

(m) Glideslopes in the 328.6-335.4 MHz band;

(n) Meteorological Aids in the 400.05-406, and 1660-1700 MHz bands;

(o) TACAN/DME in the 960-1215 MHz band;

(p) Aeronautical Telemetry stations in the 1435-1535, 2200-2290, and 2310-2390 MHz bands.

(2) On all applications for assignments above 29890 kHz that are listed in 29b.(1)(a)-(p) as exceptions, this field may be completed at the option of the applicant.

(3) If more than one antenna is to be used, insert the data for the antenna to be used most frequently.

(4) The following formatting instructions apply:

(a) GAIN--Insert in the first two characters a two-digit number representing the nominal gain of the antenna in decibels. Insert a zero in the first space if the gain is less than ten. Enter the letter G in the third space. If the gain is zero, enter 00G.

(b) NAME--Starting with the fourth character, insert the generic name of the antenna, using no more than ten spaces. If the name requires more than ten spaces, abbreviate, but use all ten spaces.

(c) ELEVATION--Starting with the 14th character, enter a five-digit number representing the site (terrain) elevation in meters above mean sea level (MSL). Use all five spaces, inserting leading zeros as applicable. For a site below MSL, enter a dash in the 14th space and a four digit number. Insert the letter H in the 19th space. Leave blank for assignments to transportable transmitter stations (S362).

(d) HEIGHT--Starting with the 20th character, insert a four-digit number representing the antenna height in meters above terrain. Use all four spaces, inserting leading zeros as applicable. Insert the letter T in the 24th space.

Example: XAD01 10GCRNRRFLCTR06550H0175T

As you may have read in the above cut-and-pasted parts of the NTIA Manual, these fields are optional for experimental applications. However, due to the directionality and high gain of your antennas, this info can be beneficial to the coordination analysis. So, in summary, I need polarization from the choices in 9.8.2, paragraph 26(e) and gain, name, elevation and height from the definitions in 9.8.2, paragraph 29(b)(4). I realize that it might be possible for me to get most of this information from the data and exhibits in the applications, but I think it would be best for you to summarize them so that there are no mistakes. You may either upload these parameters to each individual application or you may respond directly to this email, with your answers for all the subject applications in one table.

The items indicated above must be submitted before processing can continue on the above referenced applications. Failure to provide the requested information within 30 days of December 13, 2007 may result in application dismissal pursuant to Section 5.67 and forfeiture of the filing fee pursuant to Section 1.1108.

Doug Young
Electronics Engineer
Federal Communications Commission
Experimental Licensing Branch
Phone: (202) 418-2440
Fax: (202) 418-1918
Email: Douglas.Young@fcc.gov