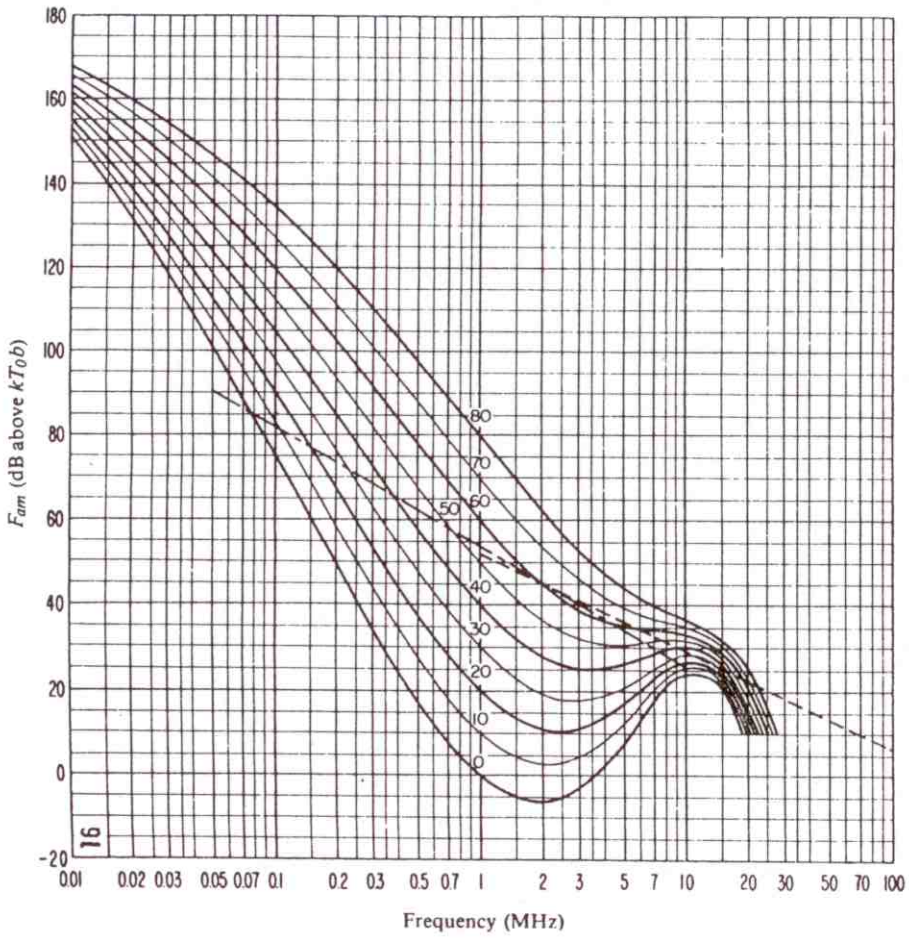


FIGURE 16b – *Variation of radio noise with frequency (Summer; 0800-1200 h)*

——— Expected values of atmospheric noise

– · – · – · Expected values of man-made noise at a quiet receiving location

– – – – – Expected values of galactic noise

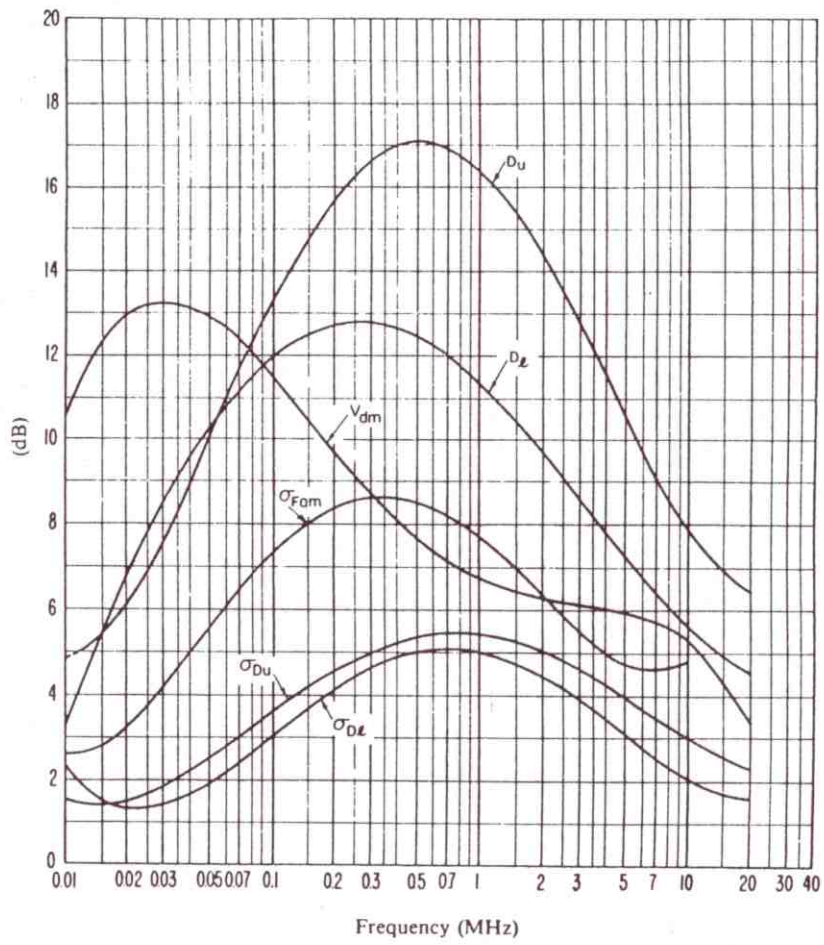


FIGURE 16c – *Data on noise variability and character (Summer; 0800-1200 h)*

$\sigma_{Fam}$ : Standard deviation of values of $F_{am}$
$D_u$ : Ratio of upper decile to median value, $F_{am}$
$\sigma_{Du}$ : Standard deviation of values of $D_u$
$D_l$ : Ratio of median value, $F_{am}$, to lower decile
$\sigma_{Dl}$ : Standard deviation of value of $D_l$
$V_{dm}$ : Expected value of median deviation of average voltage. The values shown are for a bandwidth of 200 Hz.

Figure 72. Figures 16b and 16c from CCIR Report 322.

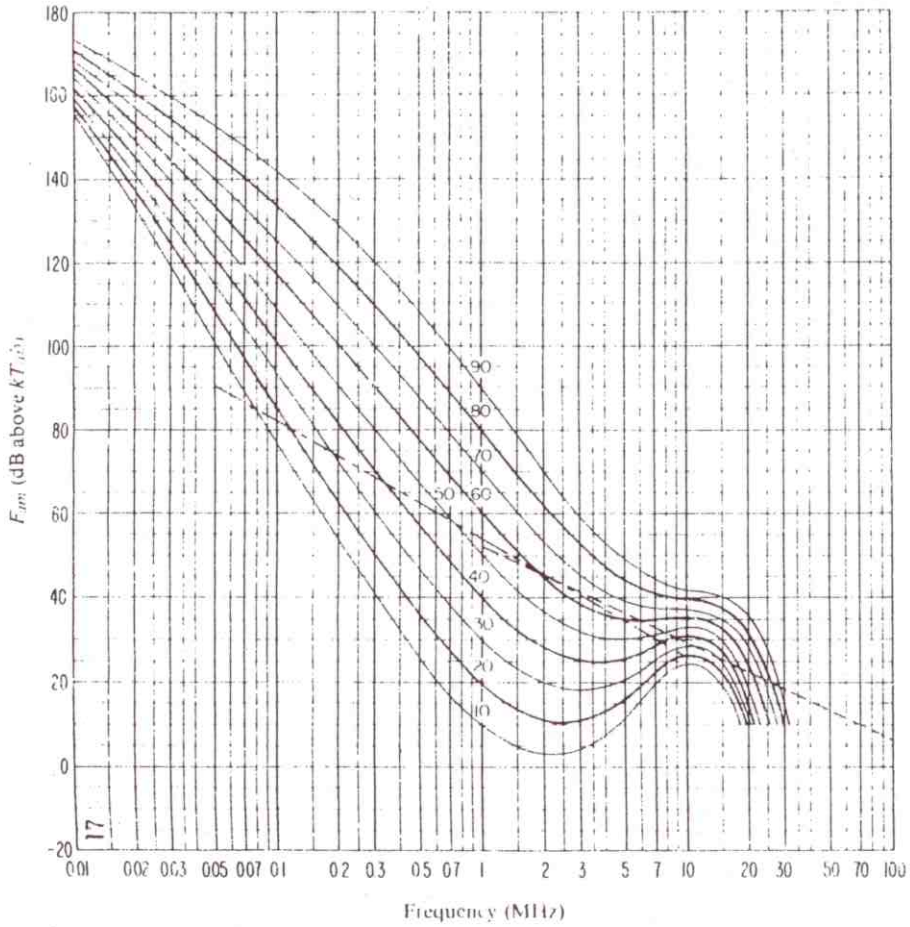


FIGURE 17b *Variation of radio noise with frequency (Summer; 1200-1600 h)*

——— Expected values of atmospheric noise

– – – – – Expected values of man-made noise at a quiet receiving location

– – – – – – Expected values of galactic noise

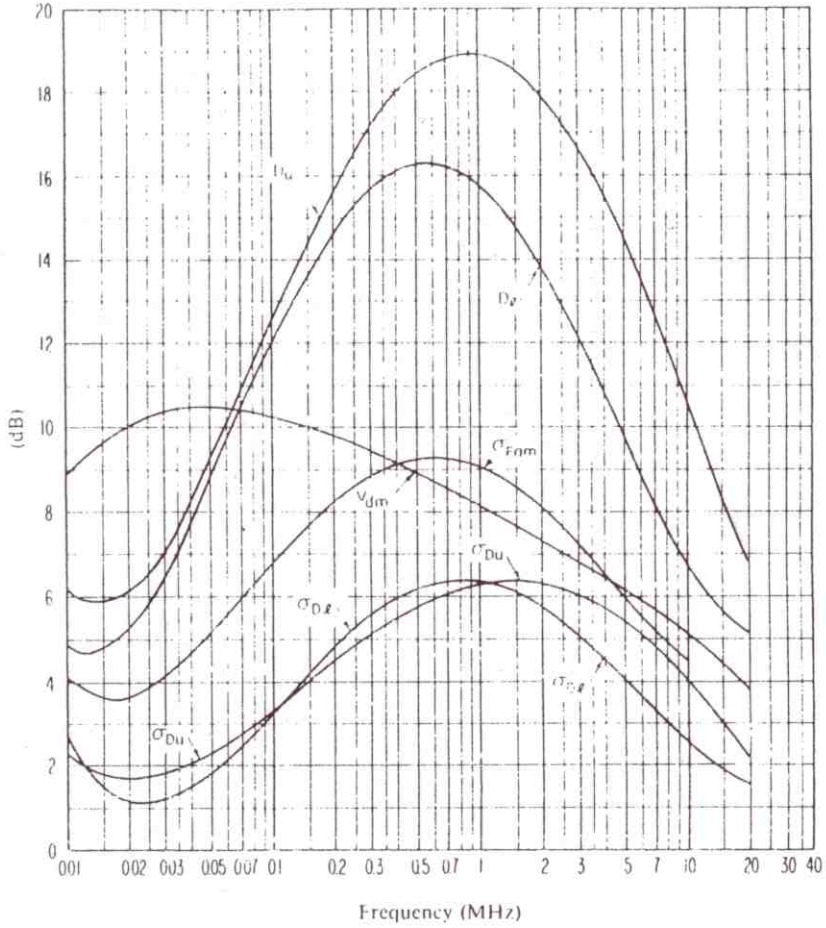


FIGURE 17c *Data on noise variability and character (Summer; 1200-1600 h)*

$\sigma_{Fam}$ : Standard deviation of values of $F_{am}$
$D_u$ : Ratio of upper decile to median value, $F_{am}$
$\sigma_{Du}$ : Standard deviation of values of $D_u$
$D_l$ : Ratio of median value, $F_{am}$, to lower decile
$\sigma_{Dl}$ : Standard deviation of value of $D_l$
$V_{dm}$ : Expected value of median deviation of average voltage. The values shown are for a bandwidth of 200 Hz.

Figure 73. Figures 17b and 17c from CCIR Report 322.

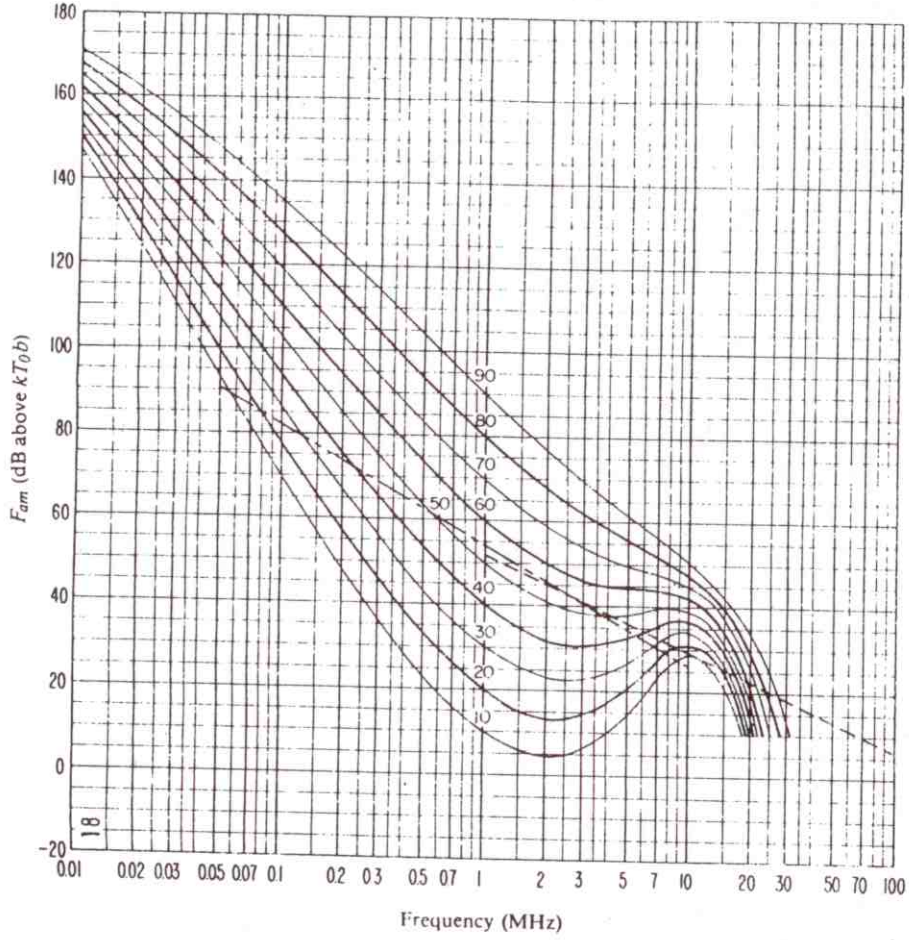


FIGURE 18b – *Variation of radio noise with frequency (Summer; 1600-2000 h)*

———— Expected values of atmospheric noise

– · – · – · Expected values of man-made noise at a quiet receiving location

– – – – – Expected values of galactic noise

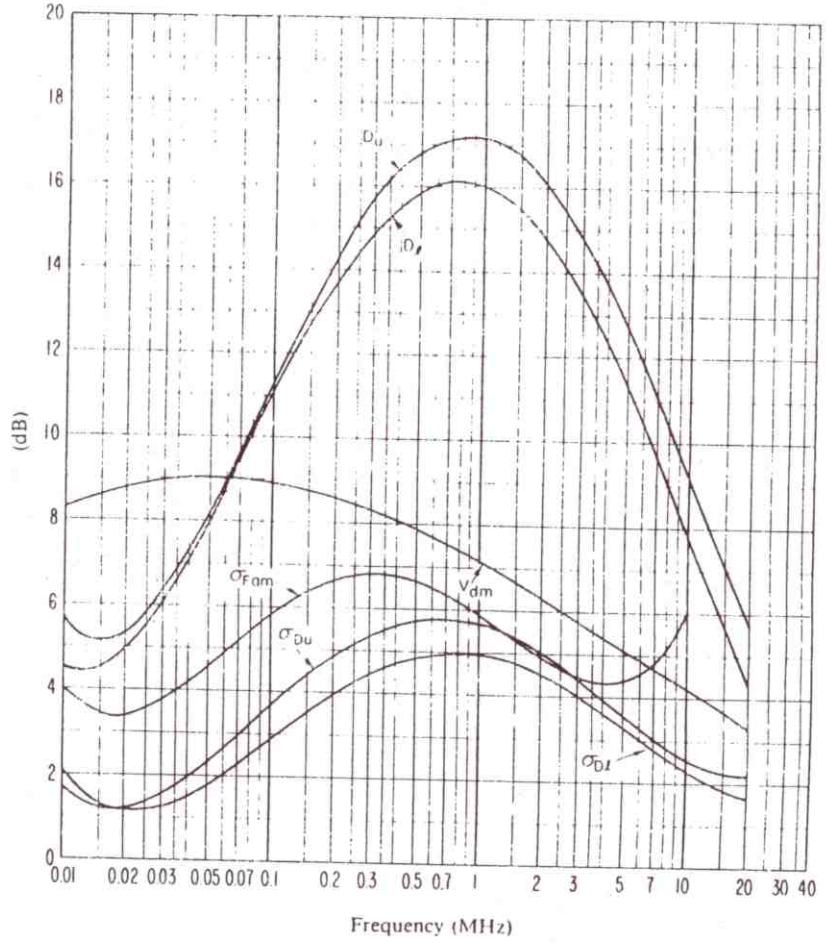


FIGURE 18c – *Data on noise variability and character (Summer; 1600-2000 h)*

$\sigma_{Fam}$ : Standard deviation of values of $F_{am}$
$D_u$ : Ratio of upper decile to median value, $F_{am}$
$\sigma_{Du}$ : Standard deviation of values of $D_u$
$D_l$ : Ratio of median value, $F_{am}$, to lower decile
$\sigma_{Dl}$ : Standard deviation of value of $D_l$
$V_{dm}$ : Expected value of median deviation of average voltage. The values shown are for a bandwidth of 200 Hz.

Figure 74. Figures 18b and 18c from CCIR Report 322.

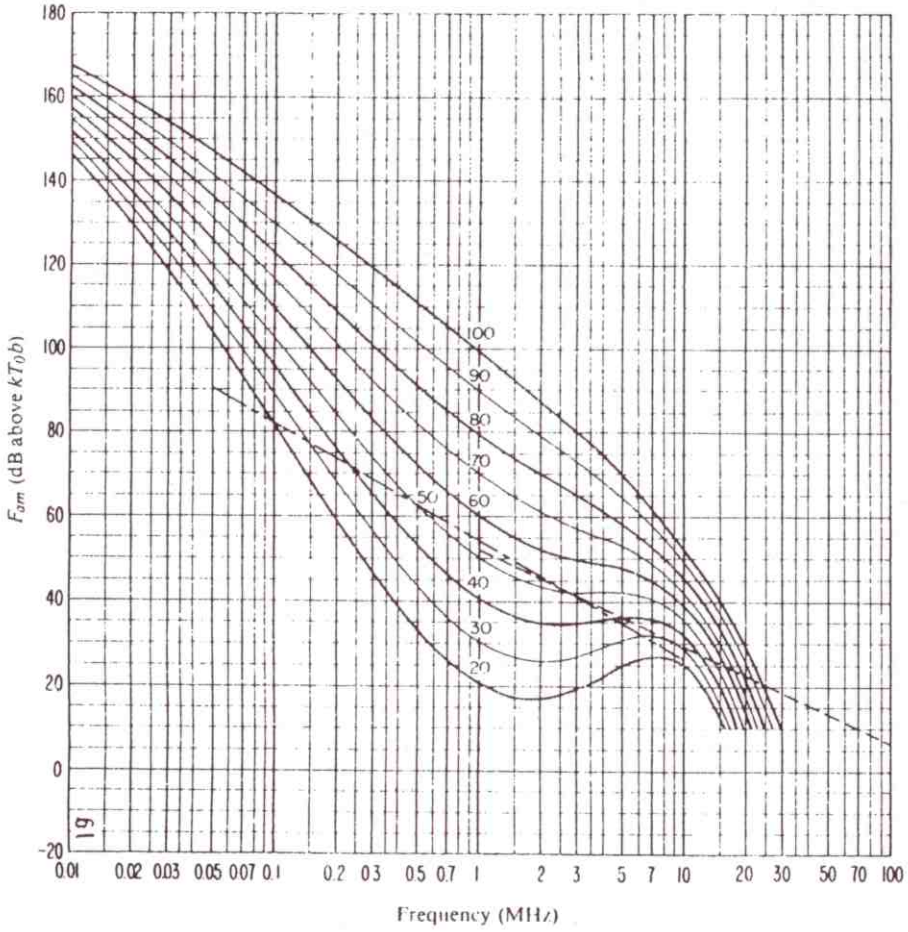


FIGURE 19b – *Variation of radio noise with frequency (Summer; 2000-2400 h)*

——— Expected values of atmospheric noise

– · – · – · – Expected values of man-made noise at a quiet receiving location

– – – – – Expected values of galactic noise

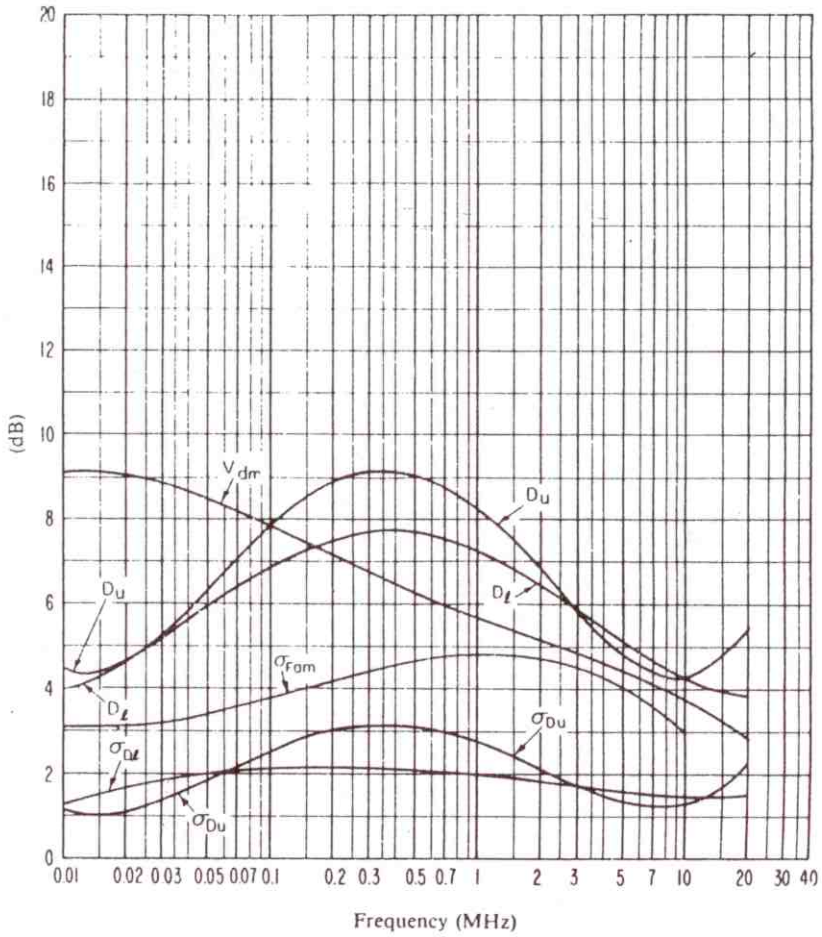


FIGURE 19c – *Data on noise variability and character (Summer; 2000-2400 h)*

$\sigma_{Fam}$ : Standard deviation of values of $F_{am}$
$D_u$ : Ratio of upper decile to median value, $F_{am}$
$\sigma_{Du}$ : Standard deviation of values of $D_u$
$D_l$ : Ratio of median value, $F_{am}$, to lower decile
$\sigma_{Dl}$ : Standard deviation of value of $D_l$
$V_{dm}$ : Expected value of median deviation of average voltage. The values shown are for a bandwidth of 200 Hz.

Figure 75. Figures 19b and 19c from CCIR Report 322.

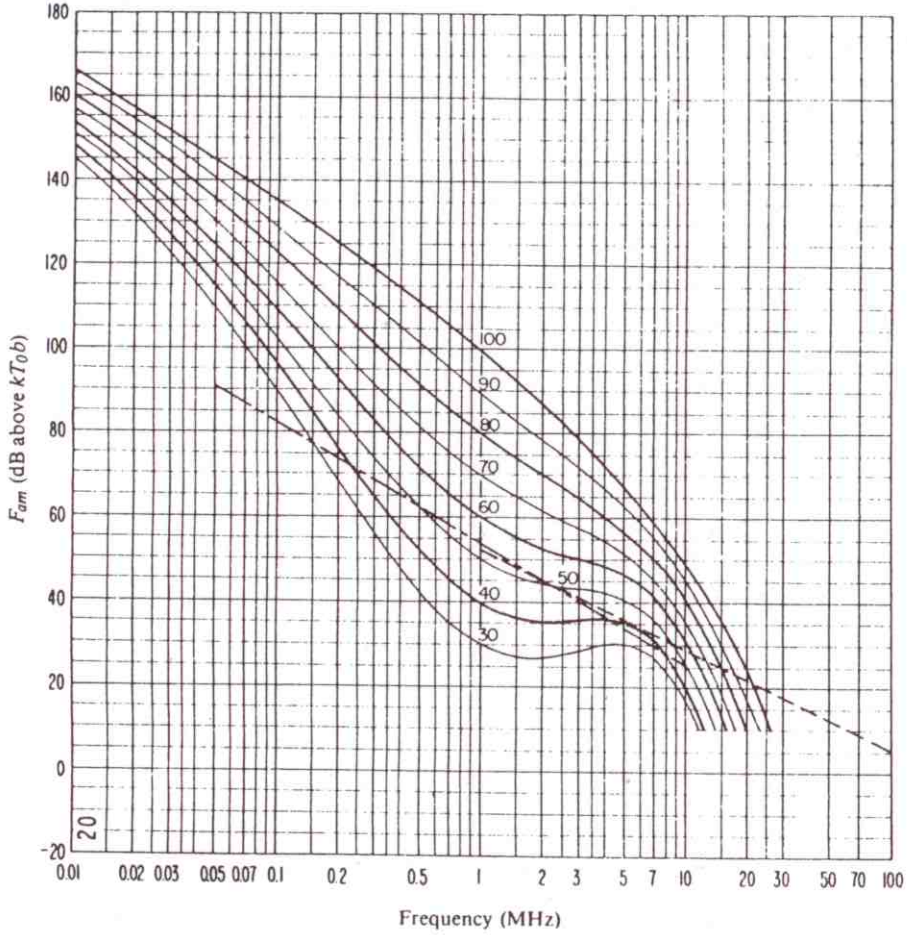


FIGURE 20b – *Variation of radio noise with frequency (Autumn; 0000-0400 h)*

——— Expected values of atmospheric noise

– · – · – · – Expected values of man-made noise at a quiet receiving location

– – – – – Expected values of galactic noise

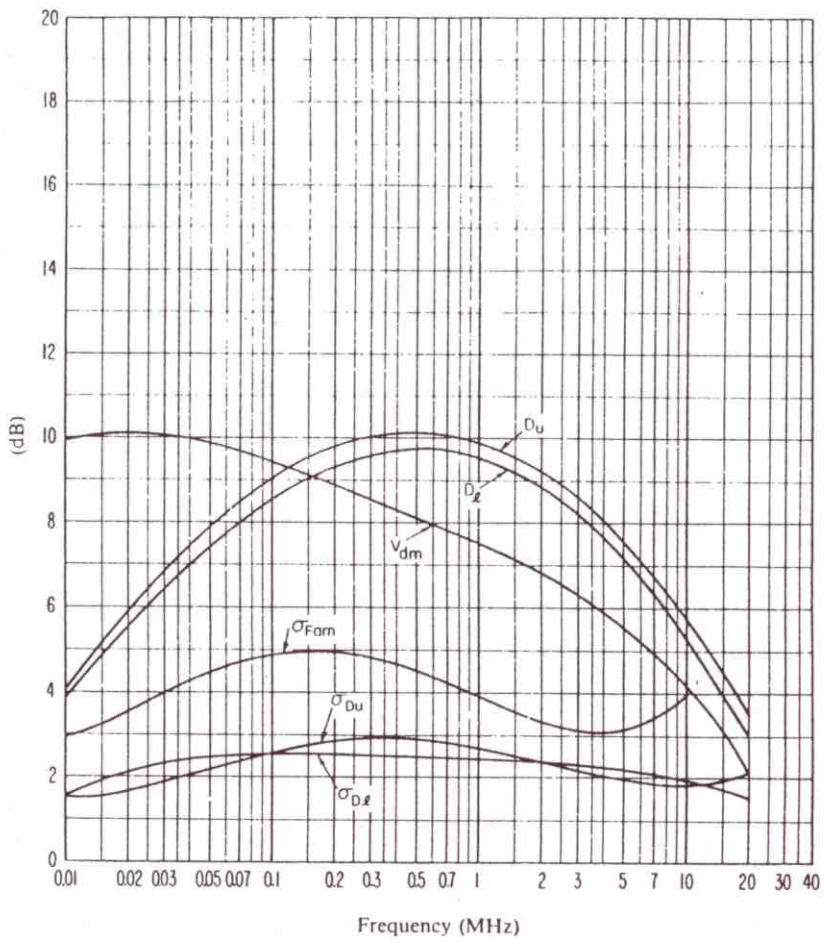


FIGURE 20c – *Data on noise variability and character (Autumn; 0000-0400 h)*

$\sigma_{Fam}$ : Standard deviation of values of $F_{am}$
$D_u$ : Ratio of upper decile to median value, $F_{am}$
$\sigma_{Du}$ : Standard deviation of values of $D_u$
$D_l$ : Ratio of median value, $F_{am}$, to lower decile
$\sigma_{Dl}$ : Standard deviation of value of $D_l$
$V_{dm}$ : Expected value of median deviation of average voltage. The values shown are for a bandwidth of 200 Hz.

Figure 76. Figures 20b and 20c from CCIR Report 322.

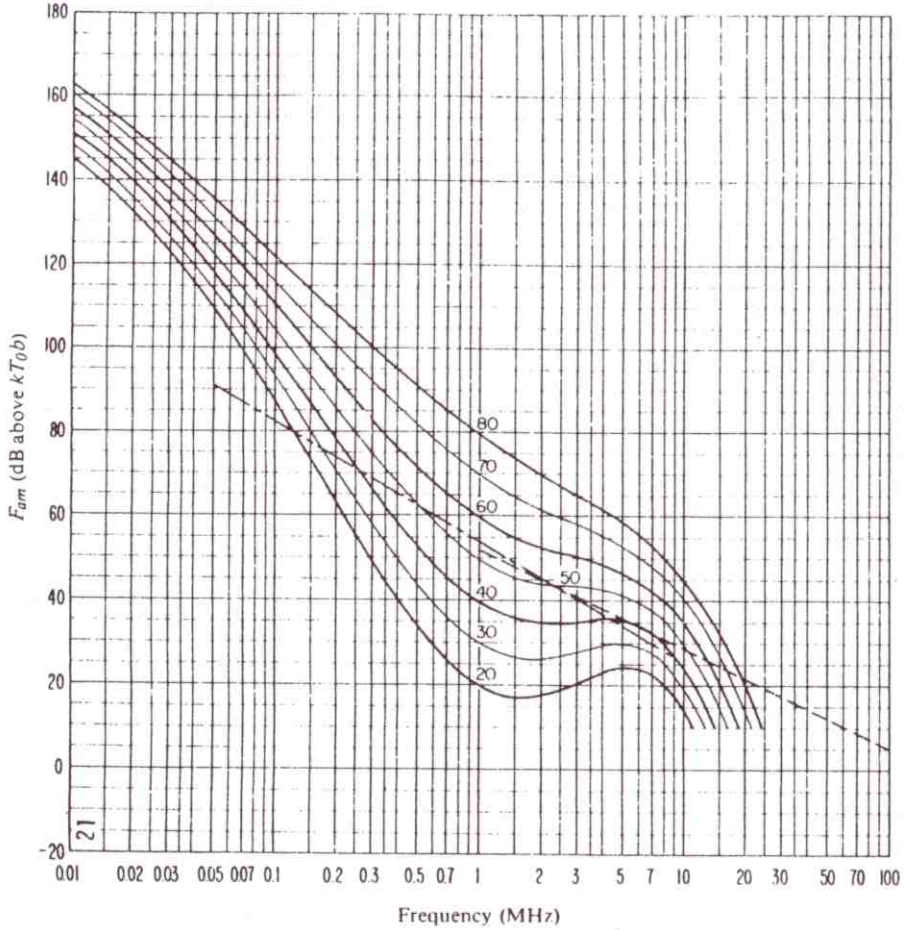


FIGURE 21b – *Variation of radio noise with frequency (Autumn; 0400-0800 h)*

———— Expected values of atmospheric noise

– · – · – · Expected values of man-made noise at a quiet receiving location

– – – – – Expected values of galactic noise

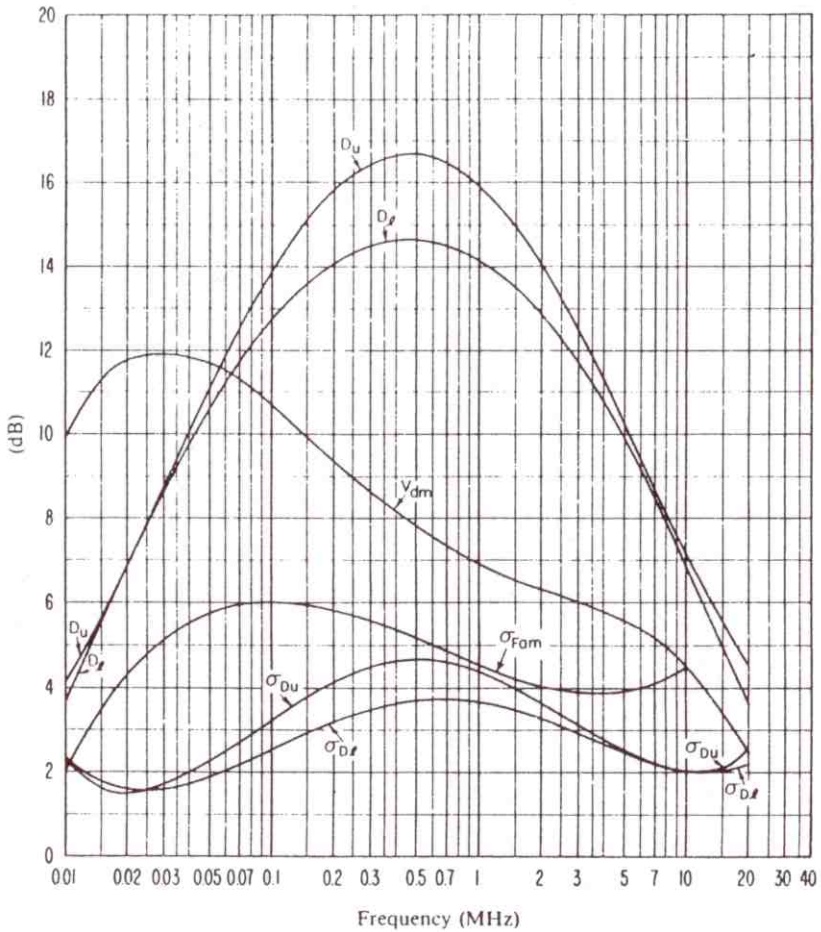


FIGURE 21c – *Data on noise variability and character (Autumn; 0400-0800 h)*

$\sigma_{Fam}$ : Standard deviation of values of $F_{am}$
$D_u$ : Ratio of upper decile to median value, $F_{am}$
$\sigma_{Du}$ : Standard deviation of values of $D_u$
$D_l$ : Ratio of median value, $F_{am}$, to lower decile
$\sigma_{Dl}$ : Standard deviation of value of $D_l$
$V_{dm}$ : Expected value of median deviation of average voltage. The values shown are for a bandwidth of 200 Hz.

Figure 77. Figures 21b and 21c from CCIR Report 322.

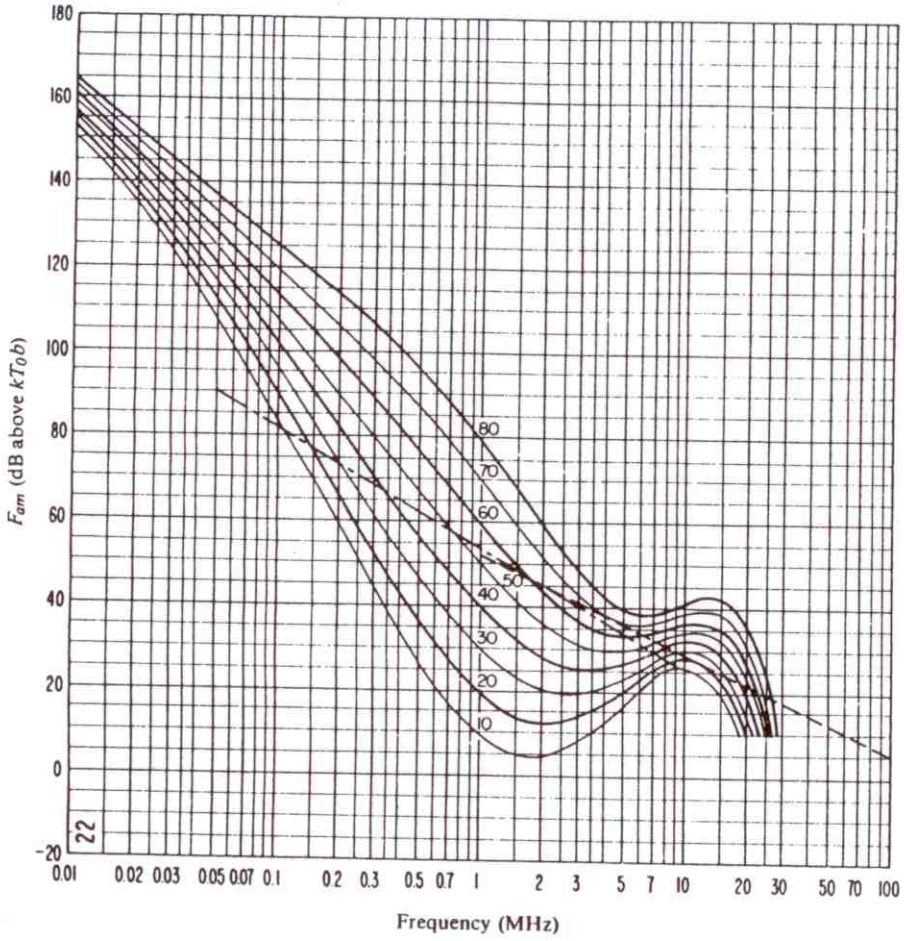


FIGURE 22b – *Variation of radio noise with frequency (Autumn; 0800-1200 h)*

——— Expected values of atmospheric noise

– · – · – · Expected values of man-made noise at a quiet receiving location

– – – – – Expected values of galactic noise

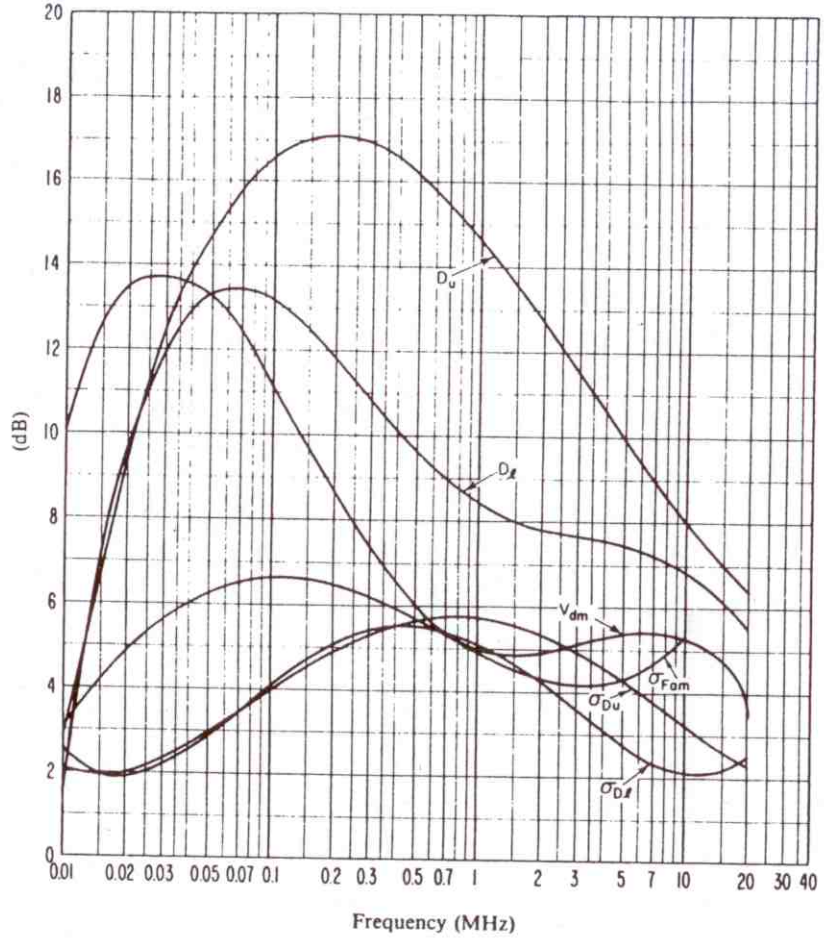


FIGURE 22c – *Data on noise variability and character (Autumn; 0800-1200 h)*

$\sigma_{Fam}$ : Standard deviation of values of $F_{am}$
$D_u$ : Ratio of upper decile to median value, $F_{am}$
$\sigma_{Du}$ : Standard deviation of values of $D_u$
$D_l$ : Ratio of median value, $F_{am}$, to lower decile
$\sigma_{Dl}$ : Standard deviation of value of $D_l$
$V_{dm}$ : Expected value of median deviation of average voltage. The values shown are for a bandwidth of 200 Hz.

Figure 78. Figures 22b and 22c from CCIR Report 322.

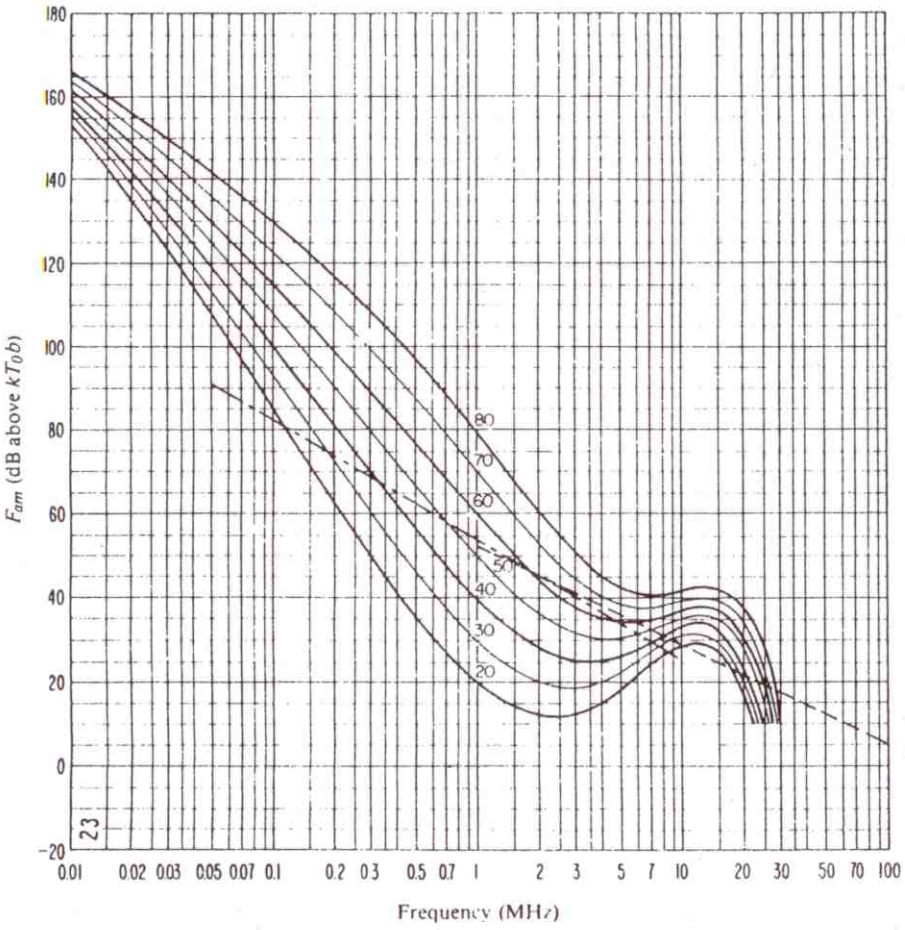


FIGURE 23b – *Variation of radio noise with frequency (Autumn; 1200-1600 h)*

——— Expected values of atmospheric noise

– · – · – · – Expected values of man-made noise at a quiet receiving location

— — — — — Expected values of galactic noise

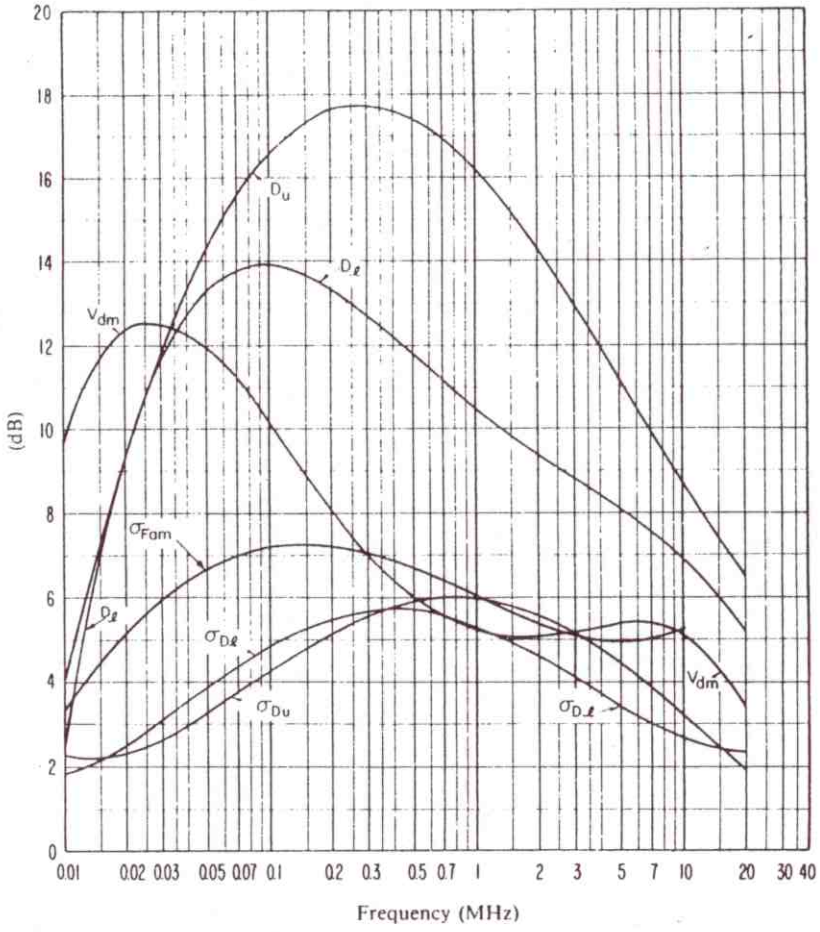


FIGURE 23c – *Data on noise variability and character (Autumn; 1200-1600 h)*

$\sigma_{Fam}$ : Standard deviation of values of $F_{am}$
$D_u$ : Ratio of upper decile to median value, $F_{am}$
$\sigma_{Du}$ : Standard deviation of values of $D_u$
$D_l$ : Ratio of median value, $F_{am}$, to lower decile
$\sigma_{Dl}$ : Standard deviation of value of $D_l$
$V_{dm}$ : Expected value of median deviation of average voltage. The values shown are for a bandwidth of 200 Hz.

Figure 79. Figures 23b and 23c from CCIR Report 322.

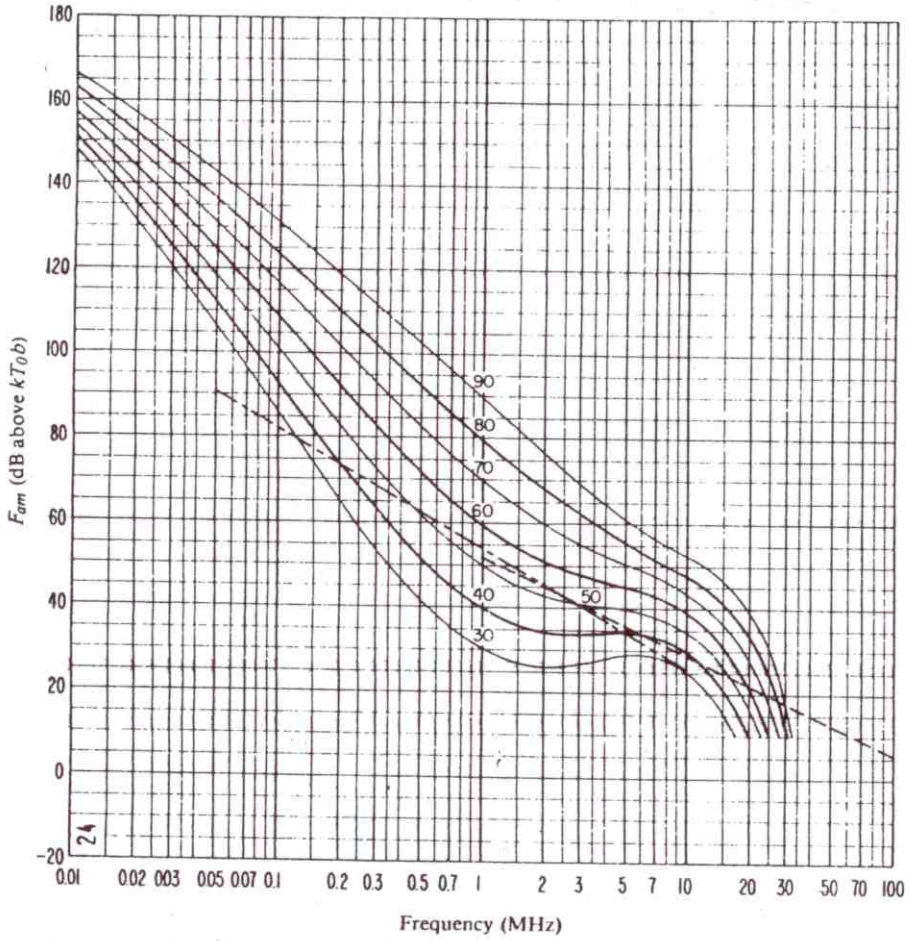


FIGURE 24b – *Variation of radio noise with frequency*
*(Autumn; 1600-2000 h)*

——— Expected values of atmospheric noise

– · – · – · Expected values of man-made noise at a quiet receiving location

– – – – – Expected values of galactic noise

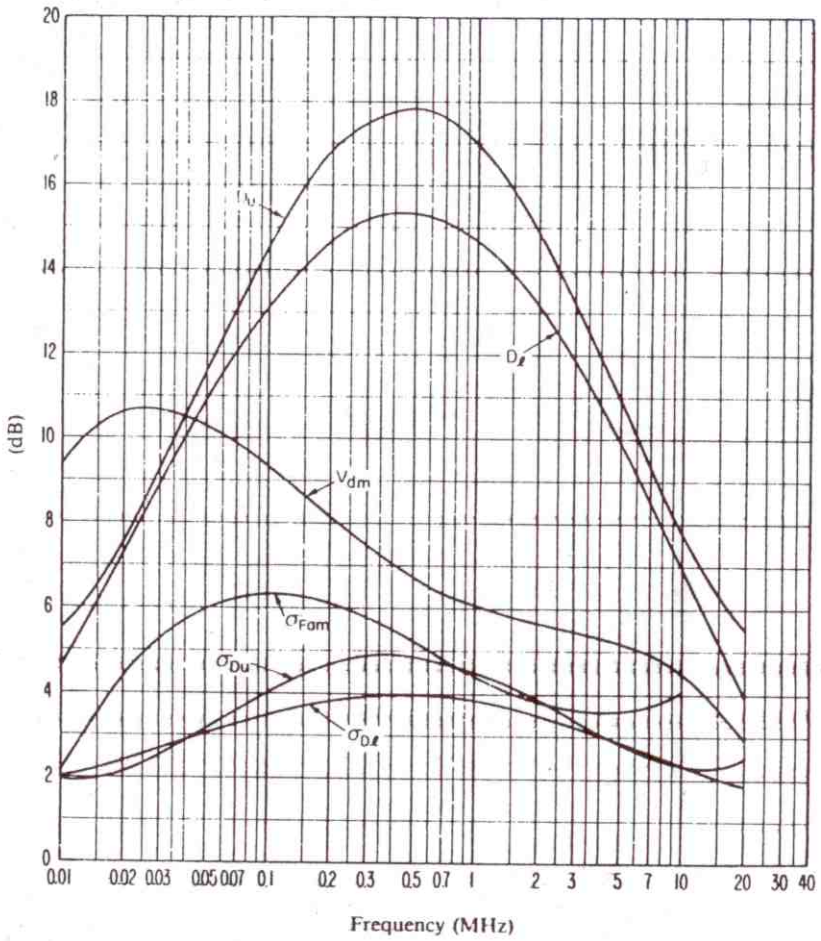


FIGURE 24c – *Data on noise variability and character*
*(Autumn; 1600-2000 h)*

$\sigma_{Fam}$ : Standard deviation of values of $F_{am}$
$D_u$ : Ratio of upper decile to median value, $F_{am}$
$\sigma_{Du}$ : Standard deviation of values of $D_u$
$D_l$ : Ratio of median value, $F_{am}$, to lower decile
$\sigma_{Dl}$ : Standard deviation of value of $D_l$
$V_{dm}$ : Expected value of median deviation of average voltage. The values shown are for a bandwidth of 200 Hz.

Figure 80. Figures 24b and 24c from CCIR Report 322.

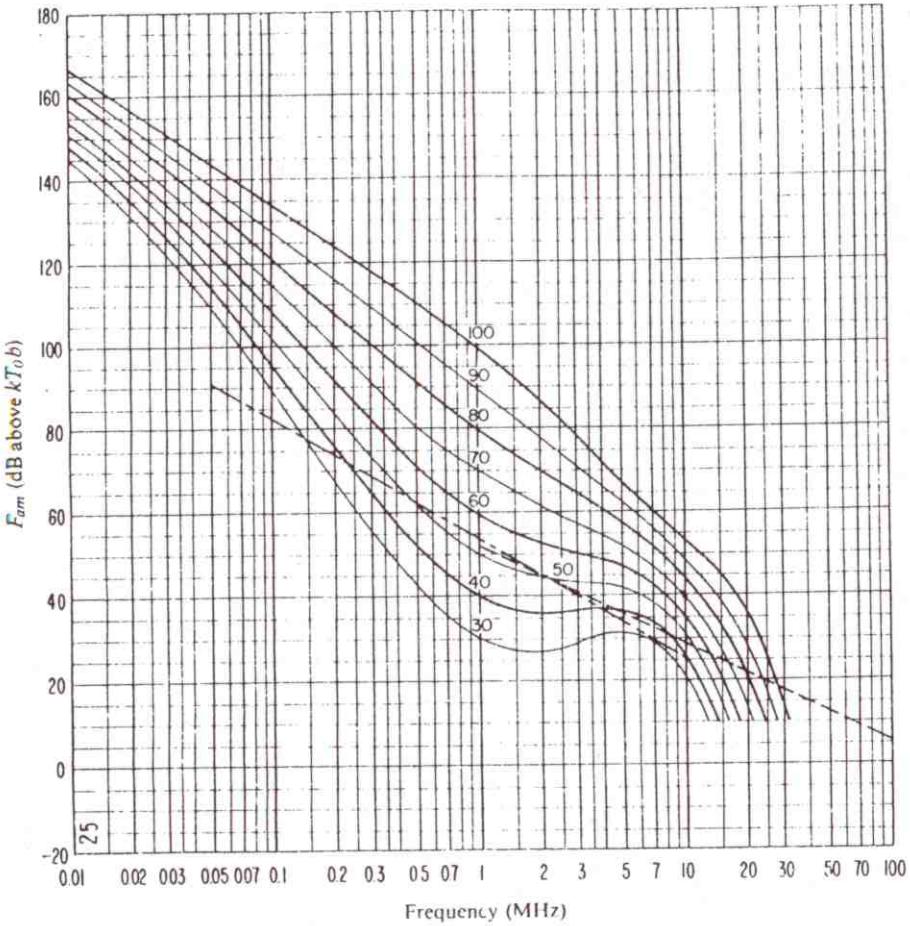


FIGURE 25b – *Variation of radio noise with frequency (Autumn; 2000-2400 h)*

——— Expected values of atmospheric noise

— · — · — · — Expected values of man-made noise at a quiet receiving location

— — — — — Expected values of galactic noise

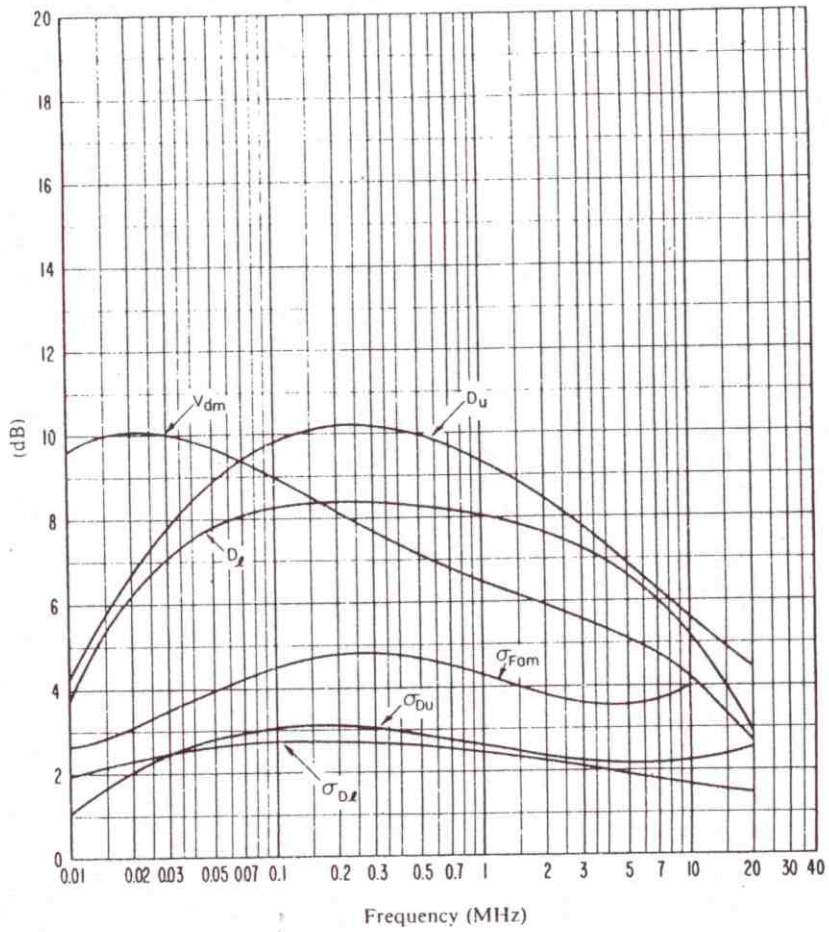


FIGURE 25c – *Data on noise variability and character (Autumn; 2000-2400 h)*

$\sigma_{Fam}$ : Standard deviation of values of $F_{am}$
$D_u$ : Ratio of upper decile to median value, $F_{am}$
$\sigma_{Du}$ : Standard deviation of values of $D_u$
$D_l$ : Ratio of median value, $F_{am}$, to lower decile
$\sigma_{Dl}$ : Standard deviation of value of $D_l$
$V_{dm}$ : Expected value of median deviation of average voltage. The values shown are for a bandwidth of 200 Hz.

Figure 81. Figures 25b and 25c from CCIR Report 322.

Table 31. Coefficients for Frequency Variation of $F_{am}$ for Winter Season

| Time Block | | | | | |
|---|---|---|---|---|---|
| 00-04 | 04-08 | 08-12 | 12-16 | 16-20 | 20-24 |
| 5.1464396E-03 | 7.5598661E-03 | 6.4431812E-04 | -7.7356835E-04 | 4.7935808E-03 | 7.5132148E-03 |
| -2.1874073E-02 | -3.1284123E-02 | -2.1885861E-03 | -1.2374851E-03 | -2.0086448E-02 | -3.1190486E-02 |
| -5.3265774E-02 | -5.7129856E-02 | -3.8541876E-02 | -1.0759584E-02 | -5.2335115E-02 | -7.0445139E-02 |
| 2.3485862E-01 | 2.6515074E-01 | 1.3823060E-01 | 1.1765277E-01 | 2.1836369E-01 | 2.9776482E-01 |
| 9.3090396E-02 | 3.4857854E-02 | 1.4159342E-01 | 3.0344274E-02 | 1.1949617E-01 | 1.4221385E-01 |
| -5.2714667E-01 | -4.8079920E-01 | -6.3263597E-01 | -5.4932964E-01 | -5.2892510E-01 | -5.9214756E-01 |
| 7.2661293E-01 | 8.1514313E-01 | 5.3708674E-01 | 6.1035067E-01 | 7.0258744E-01 | 6.9095528E-01 |
| -4.0462420E-01 | -4.8874490E-01 | 1.3336874E-01 | 2.5867958E-01 | -2.4503308E-01 | -5.1815356E-01 |
| 1.7321095E+00 | 2.0165651E+00 | -1.5656420E-01 | -5.6593070E-01 | 9.7256898E-01 | 2.1326680E+00 |
| 4.6754704E+00 | 4.5076702E+00 | -4.5337248E-01 | -1.7218062E+00 | 3.4270667E+00 | 5.4322478E+00 |
| -2.1917779E+01 | -2.1965428E+01 | -9.0273744E+00 | -5.8219453E+00 | -1.5965903E+01 | -2.4450892E+01 |
| -6.2582144E+00 | -9.8616028E-01 | 1.2710892E+01 | 1.6671449E+01 | -1.8885631E+00 | -7.4510769E+00 |
| 2.4616179E+01 | 2.1699456E+01 | 1.8181485E+01 | 1.3845789E+01 | 2.2249658E+01 | 2.9032140E+01 |
| 7.3174758E+00 | 2.1794727E+00 | 4.5146703E+00 | 2.2940871E+00 | 7.0567941E+00 | 9.7249165E+00 |



Table 32. Coefficients for Frequency Variation of $F_{am}$ for Spring Season.

| Time-Block | | | | | |
|---|---|---|---|---|---|
| 00-04 | 04-08 | 08-12 | 12-16 | 16-20 | 20-24 |
| 2.6227150E-03 | -3.0928853E-03 | 9.2504994E-04 | -1.8928761E-03 | -4.0659133E-03 | 3.2872957E-03 |
| -1.5435276E-02 | 3.3566042E-03 | -8.1007290E-03 | 1.1748273E-04 | 6.6289030E-03 | -1.8200176E-02 |
| -2.6706372E-02 | 2.5763444E-02 | -2.1237181E-02 | 3.1218262E-03 | 2.8338014E-02 | -3.0299053E-02 |
| 1.9057717E-01 | 6.2825124E-02 | 1.6661943E-01 | 1.1442644E-01 | 5.4493614E-02 | 2.0779780E-01 |
| 1.8883627E-02 | -1.2774835E-01 | 3.3203508E-02 | -1.3008267E-02 | -9.9406906E-02 | 2.8095663E-02 |
| -4.5043527E-01 | -3.4887758E-01 | -5.9817472E-01 | -5.2247759E-01 | -3.8805703E-01 | -4.7896571E-01 |
| 7.9810921E-01 | 7.8960690E-01 | 6.2563424E-01 | 6.4463009E-01 | 7.3731906E-01 | 7.8167334E-01 |
| -2.5529960E-01 | 1.5706237E-01 | 9.7660960E-02 | 2.4834855E-01 | 3.2389405E-01 | -2.7009737E-01 |
| 1.3464320E+00 | 2.0586997E-02 | 1.5103476E-01 | -3.4669304E-01 | -5.7892625E-01 | 1.3902068E+00 |
| 3.0176706E+00 | -1.0421569E+00 | -8.1605343E-01 | -2.0406075E+00 | -2.2557144E+00 | 2.9772045E+00 |
| -1.9309806E+01 | -1.0353239E+01 | -1.0792174E+01 | -7.4774508E+00 | -6.6829098E+00 | -1.9347779E+01 |
| -7.3266268E-01 | 1.2813055E+01 | 1.5728586E+01 | 1.8250356E+01 | 1.5031157E+01 | 1.4394426E-01 |
| 2.1423349E+01 | 1.5530053E+01 | 1.7272884E+01 | 1.3019752E+01 | 1.4323193E+01 | 2.2882956E+01 |
| 3.1892639E+00 | 2.7632983E+00 | 1.5702502E+00 | -3.1375289E-02 | 3.5976484E+00 | 3.9221281E+00 |

Table 33. Coefficients for Frequency Variation of $F_{am}$ for Summer Season

| Time Block | | | | | |
|---|---|---|---|---|---|
| 00-04 | 04-08 | 08-12 | 12-16 | 16-20 | 20-24 |
| 3.0143955E-03 | -2.2845696E-03 | -7.5274411E-04 | -1.3997095E-03 | -3.6364795E-03 | 3.3167374E-04 |
| -1.3958785E-02 | -1.1765908E-03 | -3.7619833E-03 | -2.5487763E-03 | 4.5869794E-03 | -8.3206859E-03 |
| -2.7567580E-02 | 2.4051259E-02 | 5.2770951E-03 | 4.8204224E-03 | 3.2040968E-02 | -4.5952060E-04 |
| 1.6856721E-01 | 1.0463027E-01 | 1.2206943E-01 | 1.1480539E-01 | 6.0028845E-02 | 1.4311093E-01 |
| -3.6890309E-02 | -1.5088457E-01 | -1.0070603E-01 | -5.9997109E-02 | -1.4929356E-01 | -9.4815058E-02 |
| -4.7263805E-01 | -4.5339737E-01 | -5.0750125E-01 | -4.9003121E-01 | -3.8420528E-01 | -4.6252675E-01 |
| 8.2445444E-01 | 7.5110295E-01 | 7.0779588E-01 | 6.9604462E-01 | 7.7892180E-01 | 8.4676390E-01 |
| -3.0476368E-01 | 5.2502189E-02 | 7.8407382E-02 | 1.9581196E-01 | 3.0842602E-01 | -5.7306319E-02 |
| 1.3392726E+00 | 5.0137264E-01 | 2.8305843E-01 | -1.5927426E-01 | -4.4212906E-01 | 7.2664566E-01 |
| 3.1315548E+00 | -6.8688268E-01 | -1.2244095E+00 | -1.6802038E+00 | -2.6451535E+00 | 6.7443838E-01 |
| -1.8412520E+01 | -1.3906543E+01 | -1.0959831E+01 | -8.6921585E+00 | -7.2818758E+00 | -1.5076057E+01 |
| 3.8431763E+00 | 1.4617926E+01 | 1.9799508E+01 | 1.8380329E+01 | 1.8911183E+01 | 1.0063312E+01 |
| 2.4079279E+01 | 2.1927978E+01 | 1.4974221E+01 | 1.2803221E+01 | 1.4034052E+01 | 2.2037366E+01 |
| 1.0766247E+00 | 4.1730763E+00 | -1.9565070E+00 | -1.3030351E+00 | 2.0163780E-01 | -1.5549285E+00 |



Table 34. Coefficients for Frequency Variation of $F_{am}$ for Fall Season.

| Time-Block | | | | | |
|---|---|---|---|---|---|
| 00-04 | 04-08 | 08-13 | 12-16 | 16-20 | 20-24 |
| 2.6060968E-03 | 4.7218759E-03 | 5.7919370E-03 | 1.2819985E-03 | 1.9544206E-03 | 3.7517258E-03 |
| -1.6966518E-02 | -2.2817850E-02 | -2.5804536E-02 | -9.2396140E-03 | -9.6202585E-03 | -2.0696537E-02 |
| -2.2286011E-02 | -3.6320554E-02 | -5.1842800E-02 | -2.0020832E-02 | -2.9889922E-02 | -3.2482501E-02 |
| 2.0199396E-01 | 2.2382304E-01 | 2.7412141E-01 | 1.6583351E-01 | 1.4879695E-01 | 2.2678871E-01 |
| 3.9072967E-03 | 4.5731775E-03 | 5.2010863E-02 | -3.8523823E-03 | 4.5721579E-02 | 3.4854501E-02 |
| -4.7280531E-01 | -4.5875562E-01 | -6.7573414E-01 | -5.6597695E-01 | -4.3862613E-01 | -5.0311006E-01 |
| 7.9619034E-01 | 8.2435732E-01 | 6.3235173E-01 | 6.6906922E-01 | 7.5903333E-01 | 7.6697643E-01 |
| -2.5430293E-01 | -3.8882837E-01 | -1.3797437E-01 | 6.0975115E-02 | -1.3779156E-01 | -3.0288481E-01 |
| 1.5137575E+00 | 1.7861163E+00 | 9.7379231E-01 | 1.8205184E-01 | 6.0554971E-01 | 1.5897481E+00 |
| 2.6202258E+00 | 3.5648251E+00 | 7.6400372E-01 | -5.3942311E-01 | 2.3795970E+00 | 3.0684651E+00 |
| -2.0458629E+01 | -2.1037028E+01 | -1.5721352E+01 | -1.0469860E+01 | -1.3357272E+01 | -2.0733835E+01 |
| 1.6717672E-01 | 1.3975506E+00 | 1.4068001E+01 | 1.6559177E+01 | 2.7394866E+00 | -2.3981661E-01 |
| 2.1683289E+01 | 2.1358209E+01 | 2.1297837E+01 | 1.6481370E+01 | 1.7625039E+01 | 2.3773712E+01 |
| 2.1682355E+00 | 9.6474147E-01 | 1.6616210E+00 | -1.8865955E-01 | 3.0657970E+00 | 4.2926189E+00 |

```
      PROGRAM FREQL(INPUT,OUTPUT)
      DIMENSION COF(14),Z(9),FREQ(27),X(27),CZ(9),P(9,27)
      DATA COF/5.1464396E-3,-2.1874073E-2,-5.3265774E-2,2.3485862E-1,
     19.3090396E-2,-5.2714667E-1,7.2661293E-1,-4.0462420E-1,1.7321095,
     24.6754704,-2.1917779E1,-6.2582144,2.4616179E1,7.3174758/
      DATA Z/20.,30.,40.,50.,60.,70.,80.,90.,100./
      DATA FREQ/.01,.015,.02,.03,.04,.05,.07,.1,.15,.2,.3,.4,.5,
     1.7,1.,1.5,2.,3.,4.,5.,7.,10.,15.,20.,30.,40.,50./
C     Z IS THE NOISE GRADE (INPUT 1MHZ FAM VALUE).
C     FREQ IS THE FREQUENCY IN MHZ FOR WHICH FAM IS DESIRED FOR
C     A GIVEN Z.
C     THE 14 COEFFICIENTS IN THIS EXAMPLE ARE FOR WINTER SEASON,
C     00-04 HOURS.
      PRINT 6
      PZ=-.75*COF(1)+COF(2)
      PX=-.75*COF(8)+COF(9)
      DO 10 I=3,7
      PZ=-.75*PZ+COF(I)
      PX=-.75*PX+COF(I+7)
   10 CONTINUE
      DO 20 J=1,9
      P1=Z(J)*PZ+PX
      CZ(J)=Z(J)-(P1-Z(J))
   20 CONTINUE
      DO 40 K=1,27
      X(K)=(8.*2.**(ALOG10(FREQ(K)))-11.)/4.
      PZ=COF(1)*X(K)+COF(2)
      PX=COF(8)*X(K)+COF(9)
      DO 30 I=3,7
      PZ=PZ*X(K)+COF(I)
      PX=PX*X(K)+COF(I+7)
   30 CONTINUE
      DO 40 J=1,9
      P(J,K)=CZ(J)*PZ+PX
   40 CONTINUE
      PRINT 7, (FREQ(K),(P(J,K),J=1,9),K=1,27)
    6 FORMAT(1H1)
    7 FORMAT(2X,F10.3,F10.1,8F8.1)
      END
```

Table 35. Output of Program FREQL, $F_{am}$ Values for Winter Season, 0000-0400 hours

| Frequency in MHz | 1 MHz $F_{am}$ Value | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 |
| .010 | 143.7 | 146.2 | 148.8 | 151.3 | 153.9 | 156.4 | 159.0 | 161.5 | 164.1 |
| .015 | 135.7 | 138.6 | 141.5 | 144.4 | 147.2 | 150.1 | 153.0 | 155.9 | 158.8 |
| .020 | 129.3 | 132.5 | 135.7 | 138.9 | 142.1 | 145.3 | 148.5 | 151.7 | 154.9 |
| .030 | 119.2 | 123.0 | 126.7 | 130.5 | 134.3 | 138.1 | 141.9 | 145.7 | 149.5 |
| .040 | 111.2 | 115.5 | 119.8 | 124.1 | 128.4 | 132.7 | 137.0 | 141.3 | 145.6 |
| .050 | 104.6 | 109.3 | 114.1 | 118.8 | 123.6 | 128.3 | 133.1 | 137.8 | 142.6 |
| .070 | 94.0 | 99.5 | 105.0 | 110.5 | 116.0 | 121.5 | 127.0 | 132.5 | 138.0 |
| .100 | 82.1 | 88.5 | 94.9 | 101.3 | 107.7 | 114.1 | 120.5 | 126.8 | 133.2 |
| .150 | 68.2 | 75.7 | 83.1 | 90.6 | 98.0 | 105.5 | 112.9 | 120.4 | 127.8 |
| .200 | 58.4 | 66.6 | 74.8 | 83.0 | 91.2 | 99.4 | 107.6 | 115.8 | 124.0 |
| .300 | 45.2 | 54.4 | 63.5 | 72.7 | 81.8 | 91.0 | 100.1 | 109.3 | 118.4 |
| .400 | 36.9 | 46.6 | 56.3 | 65.9 | 75.6 | 85.3 | 95.0 | 104.7 | 114.4 |
| .500 | 31.2 | 41.2 | 51.2 | 61.2 | 71.2 | 81.2 | 91.1 | 101.1 | 111.1 |
| .700 | 24.5 | 34.7 | 44.9 | 55.0 | 65.2 | 75.4 | 85.5 | 95.7 | 105.9 |
| 1.000 | 20.2 | 30.2 | 40.1 | 50.1 | 60.0 | 70.0 | 80.0 | 89.9 | 99.9 |
| 1.500 | 19.2 | 28.3 | 37.4 | 46.6 | 55.7 | 64.9 | 74.0 | 83.2 | 92.3 |
| 2.000 | 20.6 | 28.9 | 37.1 | 45.3 | 53.5 | 61.8 | 70.0 | 78.2 | 86.4 |
| 3.000 | 24.5 | 31.2 | 37.8 | 44.4 | 51.1 | 57.7 | 64.3 | 71.0 | 77.6 |
| 4.000 | 27.0 | 32.5 | 38.0 | 43.5 | 49.0 | 54.5 | 60.0 | 65.5 | 71.0 |
| 5.000 | 27.5 | 32.3 | 37.1 | 41.9 | 46.7 | 51.5 | 56.3 | 61.1 | 65.9 |
| 7.000 | 24.0 | 28.2 | 32.5 | 36.7 | 41.0 | 45.2 | 49.5 | 53.7 | 58.0 |
| 10.000 | 12.1 | 16.7 | 21.4 | 26.0 | 30.6 | 35.2 | 39.9 | 44.5 | 49.1 |
| 15.000 | -11.8 | -5.8 | .2 | 6.2 | 12.2 | 18.3 | 24.3 | 30.3 | 36.3 |
| 20.000 | -31.5 | -24.7 | -18.0 | -11.2 | -4.4 | 2.4 | 9.2 | 16.0 | 22.8 |
| 30.000 | -50.3 | -45.0 | -39.7 | -34.4 | -29.1 | -23.8 | -18.5 | -13.2 | -7.9 |
| 40.000 | -52.7 | -50.9 | -49.0 | -47.2 | -45.4 | -43.6 | -41.8 | -40.0 | -38.2 |
| 50.000 | -60.0 | -60.0 | -60.0 | -60.0 | -60.0 | -60.0 | -60.0 | -60.0 | -60.0 |

The other parameters, $D_u$, $D_\ell$, $\sigma_{D_u}$, $\sigma_{D_\ell}$, $\sigma_{F_{am}}$, and $V_{d_m}$ (CCIR Report 322, Figure 2c, for example) are all given by the function

$$P(x) = a_0 + a_1 x + a_2 x^2 + a_3 x^3 + a_4 x^4 \ , \qquad (25)$$

where $x = \log_{10}(f_{MHz})$ ,

and $f_{MHz}$ is the frequency in MHz.

The parameters $D_u$, $D_\ell$, $\sigma_{D_u}$, $\sigma_{D_\ell}$, and $V_{d_m}$ were defined previously.

CCIR Report 322 states that "The values of $\sigma_{F_{am}}$ have been derived by comparing actual observations with predictions for the same locations, and include such uncertainties as those due to the unpredictable variations from year to year and the errors introduced by the necessity of presenting a large volume of data in summarized and homogeneous form." As mentioned at the beginning of this section (23), the variation with frequency of $F_{am}$ is given by a least squares numerical mapping of the totality of data for all the measurement frequencies. The parameter $\sigma_{F_{am}}$ represents, as a function of frequency, the variation of the $F_{am}$ data about the "mapped" (or estimated) values (Figures 58-81). Also, the parameter $V_{d_m}$ and other parameters associated with the APD are covered in the next section. Tables 36-40 give the a (25) coefficients for $D_u$, $\sigma_{D_u}$, $D_\ell$, $\sigma_{D_\ell}$, and $\sigma_{F_{am}}$.

Table 36. Coefficients for the CCIR Report 322 $D_\mu$ Estimates, S = Season (1 = Winter, etc.), TB = Time block (1 = 0000-0400 Hours, etc.)

| S | TB | $a_4$ | $a_3$ | $a_2$ | $a_1$ | $a_0$ |
|---|---|---|---|---|---|---|
| 1 | 1 | 5.00892328E-01 | 6.56960918E-01 | -4.10245631E+00 | -2.51700673E+00 | 1.06003617E+01 |
| 1 | 2 | 2.13276390E-01 | 8.52802328E-01 | -4.06908294E+00 | -3.96891708E+00 | 1.37919489E+01 |
| 1 | 3 | -1.95472178E+00 | -2.09296871E-01 | 3.73129703E+00 | -2.62048611E+00 | 9.19466303E+00 |
| 1 | 4 | -1.66350158E+00 | 1.22944116E-01 | 3.26883880E+00 | -2.84347866E+00 | 9.34307460E+00 |
| 1 | 5 | -2.87120111E-01 | 4.45009607E-01 | -2.45814032E+00 | -3.29490920E+00 | 1.36788105E+01 |
| 1 | 6 | -1.87770920E-01 | -8.17502566E-02 | -2.03652073E+00 | -1.62093728E+00 | 1.03446264E+01 |
| 2 | 1 | 6.18674390E-01 | 8.20699906E-01 | -3.46732308E+00 | -2.38538553E+00 | 1.02728040E+01 |
| 2 | 2 | 3.34112625E-01 | 3.69580294E-01 | -5.05748159E+00 | -3.00054536E+00 | 1.55734402E+01 |
| 2 | 3 | -2.66208854E-01 | 1.30900712E+00 | -1.54087371E+00 | -4.87094024E+00 | 1.37265001E+01 |
| 2 | 4 | -5.29136231E-02 | 9.10697127E-01 | -3.50653422E+00 | -4.26338955E+00 | 1.71683940E+01 |
| 2 | 5 | 2.98848395E-01 | 4.48575341E-01 | -5.52759061E+00 | -3.54169831E+00 | 1.82207816E+01 |
| 2 | 6 | 3.78008073E-01 | 1.29007328E+00 | -1.97377542E+00 | -3.51621167E+00 | 9.48159604E+00 |
| 3 | 1 | 1.06232859E+00 | 1.15881737E+00 | -4.32820997E+00 | -2.56569951E+00 | 9.76968454E+00 |
| 3 | 2 | 1.39607390E+00 | 1.14981068E+00 | -7.87923925E+00 | -3.66903417E+00 | 1.61267736E+01 |
| 3 | 3 | 1.46563738E+00 | 1.92703384E+00 | -7.23805025E+00 | -4.69724192E+00 | 1.63707552E+01 |
| 3 | 4 | 1.20286856E+00 | -2.25543038E-02 | -8.49459349E+00 | -9.26168862E-01 | 1.89779414E+01 |
| 3 | 5 | 1.20579759E+00 | 1.13000763E-01 | -8.06379684E+00 | -1.17700782E+00 | 1.71655248E+01 |
| 3 | 6 | 1.13956525E+00 | 2.07384212E+00 | -3.26395658E+00 | -3.84406733E+00 | 8.20398344E+00 |
| 4 | 1 | 4.32754349E-02 | -7.80041037E-02 | -2.55179747E+00 | -1.55263045E+00 | 9.92781725E+00 |
| 4 | 2 | 8.59263171E-01 | 1.21394341E+00 | -6.27987340E+00 | -4.57176206E+00 | 1.59520737E+01 |
| 4 | 3 | -1.19096693E-01 | 1.60331698E+00 | -2.19368375E+00 | -5.91634192E+00 | 1.46092051E+01 |
| 4 | 4 | 1.86980239E-01 | 1.32862617E+00 | -3.74523357E+00 | -5.25667299E+00 | 1.62165396E+01 |
| 4 | 5 | 1.18747834E+00 | 1.56471486E+00 | -5.97775207E+00 | -4.97688658E+00 | 1.69966481E+01 |
| 4 | 6 | 5.41620521E-02 | 5.41617173E-01 | -1.70229138E+00 | -2.61085981E+00 | 9.36940160E+00 |

Table 37. Coefficients for the CCIR Report 322 $\sigma_{D_\mu}$ Estimates, S = Season (1 = Winter, etc.), TB = Time block (1 = 0000-0400 Hours, etc.)

| S | TB | $a_4$ | $a_3$ | $a_2$ | $a_1$ | $a_0$ |
|---|---|---|---|---|---|---|
| 1 | 1 | 5.84988902E-01 | 9.08411417E-01 | -1.44193636E+00 | -9.77948436E-01 | 3.20666477E+00 |
| 1 | 2 | 6.87790597E-01 | 1.49680586E+00 | -1.47127374E+00 | -2.17754495E+00 | 3.71580333E+00 |
| 1 | 3 | 6.68277267E-01 | 1.50024199E+00 | -1.88099825E+00 | -2.31393412E+00 | 5.18590172E+00 |
| 1 | 4 | 6.36256371E-01 | 1.54440718E+00 | -1.59233567E+00 | -2.16955237E+00 | 5.13319057E+00 |
| 1 | 5 | 2.72640576E-01 | 1.34449765E+00 | -2.34686954E-01 | -2.02360313E+00 | 3.72861058E+00 |
| 1 | 6 | 2.02102563E-01 | 7.11963677E-01 | -4.91857596E-01 | -9.67332776E-01 | 3.27446847E+00 |
| 2 | 1 | 2.93029947E-01 | 5.89826398E-01 | -3.99569479E-01 | -8.29667422E-01 | 2.61660898E+00 |
| 2 | 2 | 1.21679141E+00 | 1.55251333E+00 | -3.27879393E+00 | -2.27418994E+00 | 4.83328744E+00 |
| 2 | 3 | 8.89553504E-01 | 1.04473992E+00 | -3.34413791E+00 | -1.76264438E+00 | 6.27406813E+00 |
| 2 | 4 | 5.11150776E-01 | 1.66104307E-01 | -3.06957423E+00 | -6.46193770E-01 | 6.90657263E+00 |
| 2 | 5 | 7.85209211E-01 | 7.69996769E-01 | -2.90611683E+00 | -1.55795087E+00 | 5.53987865E+00 |
| 2 | 6 | 2.39790781E-01 | 6.81280716E-01 | -3.08606965E-01 | -1.22300530E+00 | 2.69737731E+00 |
| 3 | 1 | 3.98093243E-01 | 5.68995476E-01 | -1.16672068E+00 | -7.95759725E-01 | 2.78905289E+00 |
| 3 | 2 | 7.86136988E-01 | 1.07513083E+00 | -2.81168499E+00 | -1.92580089E+00 | 4.80514347E+00 |
| 3 | 3 | 4.76566531E-01 | 3.00696383E-01 | -2.57554704E+00 | -6.13671796E-01 | 5.41091278E+00 |
| 3 | 4 | 2.94452858E-01 | -6.09592300E-01 | -2.90712879E+00 | 9.83296891E-01 | 6.32001618E+00 |
| 3 | 5 | 7.87444045E-01 | 7.08388391E-01 | -3.33333857E+00 | -1.24265857E+00 | 5.63240400E+00 |
| 3 | 6 | 5.76908645E-01 | 1.10865643E+00 | -1.34561722E+00 | -1.71046200E+00 | 2.69892803E+00 |
| 4 | 1 | 2.48431128E-01 | 4.84654286E-01 | -7.44197615E-01 | -8.42676450E-01 | 2.71611807E+00 |
| 4 | 2 | 8.45612652E-01 | 1.08136951E+00 | -2.60406093E+00 | -1.70503895E+00 | 4.39208019E+00 |
| 4 | 3 | 4.26833386E-01 | 1.60727815E-01 | -2.55549142E+00 | -5.23502830E-01 | 5.76011429E+00 |
| 4 | 4 | 3.52316085E-01 | 5.08512351E-03 | -2.58666430E+00 | -5.33095218E-01 | 5.98158342E+00 |
| 4 | 5 | 5.36375551E-01 | 8.76975835E-01 | -1.89205000E+00 | -1.72566744E+00 | 4.52137141E+00 |
| 4 | 6 | 1.81982176E-02 | 4.39310400E-01 | -1.15919839E-02 | -8.59438382E-01 | 2.62724283E+00 |

Table 38. Coefficients for the CCIR Report 322 $D_\ell$ Estimates, S = Season (1 = Winter, etc.), TB = Time block (1 = 0000-0400 Hours, etc.)

| S | TB | $a_4$ | $a_3$ | $a_2$ | $a_1$ | $a_0$ |
|---|---|---|---|---|---|---|
| 1 | 1 | 3.75273933E-01 | 3.15764566E-01 | -3.00008669E+00 | -1.80534960E+00 | 8.27623751E+00 |
| 1 | 2 | 1.79274064E-01 | 3.22455577E-01 | -3.85280465E+00 | -2.96261376E+00 | 1.20024817E+01 |
| 1 | 3 | -1.81377559E+00 | -1.49409231E+00 | 3.33695571E+00 | 4.14694355E-01 | 6.24869231E+00 |
| 1 | 4 | -1.79134825E+00 | -1.61777787E+00 | 3.44133463E+00 | 9.03138793E-01 | 5.83517474E+00 |
| 1 | 5 | -7.14187544E-01 | -8.52356730E-01 | -1.43198294E+00 | -9.86330720E-01 | 1.11117595E+01 |
| 1 | 6 | -5.41074950E-01 | -7.36251929E-01 | -6.85219303E-01 | -3.18125204E-01 | 7.80435541E+00 |
| 2 | 1 | 1.45088070E-01 | 8.28309686E-02 | -2.62786539E+00 | -1.75942070E+00 | 9.57929487E+00 |
| 2 | 2 | -7.24822510E-01 | -1.05959881E+00 | -2.53112977E+00 | -1.16771156E+00 | 1.34940043E+01 |
| 2 | 3 | -8.12157738E-01 | 6.41436686E-01 | 5.82971474E-01 | -3.99424719E+00 | 9.90341876E+00 |
| 2 | 4 | -3.43341946E-01 | 1.17402871E+00 | -1.20298699E+00 | -5.01926677E+00 | 1.24540346E+01 |
| 2 | 5 | -5.48853477E-01 | -3.51728959E-01 | -2.93009098E+00 | -2.65133600E+00 | 1.51177933E+01 |
| 2 | 6 | -1.47178270E-01 | 2.59003605E-01 | -1.24027986E+00 | -2.22174482E+00 | 8.65136150E+00 |
| 3 | 1 | 5.67012363E-01 | 5.27723785E-01 | -3.65976131E+00 | -2.07890949E+00 | 9.46329785E+00 |
| 3 | 2 | -9.62458959E-02 | -3.18153397E-01 | -4.04548463E+00 | -2.11482996E+00 | 1.37553749E+01 |
| 3 | 3 | 3.35468408E-01 | 1.39596592E+00 | -2.85213740E+00 | -4.57599158E+00 | 1.13260090E+01 |
| 3 | 4 | 1.60995363E+00 | 1.69437206E+00 | -7.92087387E+00 | -4.27003295E+00 | 1.57883984E+01 |
| 3 | 5 | 1.04238368E+00 | 1.93220024E-01 | -7.54433886E+00 | -1.77457401E+00 | 1.60362094E+01 |
| 3 | 6 | 4.35403208E-01 | 7.50398873E-01 | -2.09431367E+00 | -2.05797551E+00 | 7.28345730E+00 |
| 4 | 1 | 6.17574527E-02 | -1.39219358E-01 | -2.65072397E+00 | -1.44924358E+00 | 9.54061679E+00 |
| 4 | 2 | 2.15062012E-01 | 2.39095546E-01 | -4.52844367E+00 | -3.08359545E+00 | 1.41353646E+01 |
| 4 | 3 | -1.73888002E+00 | -2.04298114E-01 | 3.32500962E+00 | -2.97805357E+00 | 8.42810564E+00 |
| 4 | 4 | -9.61300068E-01 | 5.29546307E-01 | 9.00353880E-01 | -4.03760336E+00 | 1.04980712E+01 |
| 4 | 5 | 4.89627123E-01 | 5.89646048E-01 | -5.14365459E+00 | -3.67487714E+00 | 1.47067935E+01 |
| 4 | 6 | -4.46081839E-01 | -5.27024032E-01 | -8.30183630E-01 | -9.77980736E-01 | 8.03757106E+00 |

Table 39. Coefficients for the CCIR Report 322 $\sigma_{D_\ell}$ Estimates, S = Season (1 = Winter, etc.), TB = Time block (1 = 0000-0400 Hours, $^{\ell}$etc.)

| S | TB | $a_4$ | $a_3$ | $a_2$ | $a_1$ | $a_0$ |
|---|---|---|---|---|---|---|
| 1 | 1 | 1.30437115E-01 | 2.92449732E-02 | -7.80967695E-01 | 1.91653721E-02 | 2.48965606E+00 |
| 1 | 2 | 6.12076040E-01 | 5.70926163E-01 | -2.34850915E+00 | -1.00282530E+00 | 4.03858606E+00 |
| 1 | 3 | -1.17973740E-01 | -1.19367503E-02 | -4.09223631E-01 | -4.43103234E-01 | 3.47297489E+00 |
| 1 | 4 | 2.47335195E-01 | 2.02799579E-01 | -1.49123436E+00 | -5.38877202E-01 | 3.79966225E+00 |
| 1 | 5 | 5.09629563E-01 | 3.44171822E-01 | -2.32419840E+00 | -6.28446395E-01 | 4.29254259E+00 |
| 1 | 6 | -3.43275521E-01 | -4.12285103E-01 | 3.42984172E-01 | 4.90663826E-01 | 2.41246483E+00 |
| 2 | 1 | -8.00980309E-02 | -4.29523925E-02 | -1.07398044E-01 | -4.49211944E-01 | 2.76012890E+00 |
| 2 | 2 | 4.00214933E-01 | 4.20341759E-01 | -1.56008779E+00 | -8.74790097E-01 | 3.69572528E+00 |
| 2 | 3 | 9.96197401E-01 | 1.12168790E+00 | -3.68444135E+00 | -2.20709540E+00 | 5.77351546E+00 |
| 2 | 4 | 7.97893647E-01 | 9.14078756E-01 | -3.88794046E+00 | -2.51824755E+00 | 7.19704818E+00 |
| 2 | 5 | 4.15565799E-01 | 8.20364930E-01 | -1.99851271E+00 | -2.23342901E+00 | 5.21231204E+00 |
| 2 | 6 | 1.36202347E-01 | 5.72826611E-01 | -3.42747637E-01 | -1.51238883E+00 | 2.84617486E+00 |
| 3 | 1 | 2.33195213E-01 | 1.84606216E-01 | -1.16619911E+00 | -5.50767566E-01 | 2.94686877E+00 |
| 3 | 2 | 5.86802519E-01 | 4.35718215E-01 | -2.90772675E+00 | -8.79148867E-01 | 4.55759217E+00 |
| 3 | 3 | 7.59343105E-01 | 4.92747509E-01 | -3.18687913E+00 | -9.66270653E-01 | 4.99102887E+00 |
| 3 | 4 | 9.57959045E-01 | 3.77518599E-01 | -4.36475076E+00 | -7.33028917E-01 | 6.36491880E+00 |
| 3 | 5 | 6.83113311E-01 | 3.31657433E-01 | -3.09066157E+00 | -6.09136476E-01 | 4.96627829E+00 |
| 3 | 6 | 3.02665169E-02 | 2.00262806E-01 | -1.65657869E-01 | -5.20579102E-01 | 1.97863649E+00 |
| 4 | 1 | -1.05498513E-01 | -8.17923262E-02 | -6.51691841E-02 | -2.17622267E-01 | 2.44715672E+00 |
| 4 | 2 | 5.47182359E-01 | 5.05282528E-01 | -1.87150899E+00 | -7.49003105E-01 | 3.65098321E+00 |
| 4 | 3 | 9.26979200E-01 | 1.23474152E+00 | -2.99706064E+00 | -2.21742218E+00 | 5.14279228E+00 |
| 4 | 4 | 4.04915676E-01 | 5.96150479E-01 | -1.98993323E+00 | -1.77919148E+00 | 5.32953282E+00 |
| 4 | 5 | 1.47807715E-01 | 1.69049614E-01 | -1.08214496E+00 | -7.45422601E-01 | 3.83718770E+00 |
| 4 | 6 | 1.92606974E-02 | 1.25315421E-01 | -2.87496093E-01 | -6.63707027E-01 | 2.44816012E+00 |

Table 40. Coefficients for the CCIR Report 322 $\sigma_{F_{am}}$ Estimates, S = Season (1 = Winter, etc.), TB = Time block (1 = 0000 = 0400 Hours, etc.)

| S | TB | $a_4$ | $a_3$ | $a_2$ | $a_1$ | $a_0$ |
|---|---|---|---|---|---|---|
| 1 | 1 | 7.17336617E-01 | 1.79245221E+00 | -8.88626588E-01 | -1.95974968E+00 | 4.53002186E+00 |
| 1 | 2 | -4.22887166E-01 | 3.25697605E-01 | 7.59928734E-01 | -1.62587013E+00 | 4.16430566E+00 |
| 1 | 3 | -3.20276980E-01 | 6.52254504E-01 | 1.79156164E+00 | -1.04669452E+00 | 4.42172693E+00 |
| 1 | 4 | -1.09756941E+00 | -4.06295072E-01 | 2.72023661E+00 | -1.90731382E-01 | 4.68145256E+00 |
| 1 | 5 | -2.07377666E-01 | 2.92324993E-01 | 1.88162988E-01 | -1.17932103E+00 | 4.69851568E+00 |
| 1 | 6 | 7.06038885E-01 | 1.37884395E+00 | -1.73106217E+00 | -1.83011388E+00 | 5.27880997E+00 |
| 2 | 1 | 1.94488047E-01 | 6.82539873E-01 | 6.74389258E-02 | -6.50437620E-01 | 3.68970619E+00 |
| 2 | 2 | 1.40830918E+00 | 2.65366393E+00 | -2.23928914E+00 | -3.01265005E+00 | 4.98043446E+00 |
| 2 | 3 | 1.28643085E+00 | 2.97997161E+00 | -1.79339834E+00 | -3.93238039E+00 | 6.07332343E+00 |
| 2 | 4 | 5.53030171E-01 | 1.71239269E+00 | -1.12558086E+00 | -2.85251039E+00 | 6.61554348E+00 |
| 2 | 5 | -6.44060031E-02 | 1.22138733E+00 | 8.22469283E-01 | -2.46490773E+00 | 4.49169945E+00 |
| 2 | 6 | -1.22838279E-01 | 2.16799883E-01 | 2.65464343E-01 | -5.44928241E-01 | 3.89097848E+00 |
| 3 | 1 | 4.40357155E-01 | 7.54016066E-01 | -1.49919021E+00 | -1.23007793E+00 | 5.53331406E+00 |
| 3 | 2 | 1.83572743E+00 | 2.89477337E+00 | -4.33304111E+00 | -4.23750422E+00 | 7.03859826E+00 |
| 3 | 3 | 1.24681707E+00 | 2.69054302E+00 | -2.86212335E+00 | -3.93897679E+00 | 7.65787395E+00 |
| 3 | 4 | 9.70717435E-01 | 9.70230627E-01 | -4.21771963E+00 | -2.12820968E+00 | 8.86990363E+00 |
| 3 | 5 | 1.47357413E+00 | 3.19778514E+00 | -1.53173895E+00 | -3.12032032E+00 | 5.88662991E+00 |
| 3 | 6 | 2.93959753E-02 | -4.94949663E-01 | -1.46844250E+00 | 9.39509890E-02 | 4.83292651E+00 |
| 4 | 1 | 4.87844676E-01 | 1.65333771E+00 | 6.26904318E-02 | -2.07342517E+00 | 3.86029719E+00 |
| 4 | 2 | 1.95492398E-03 | 1.14851414E+00 | 7.47208548E-01 | -1.90246027E+00 | 4.49712082E+00 |
| 4 | 3 | 2.55156131E-01 | 1.73723372E+00 | 7.83954782E-01 | -2.39545160E+00 | 4.92860187E+00 |
| 4 | 4 | 2.19842795E-01 | 1.31666900E+00 | -4.22021756E-02 | -2.25733980E+00 | 6.06891727E+00 |
| 4 | 5 | 8.09133835E-02 | 1.41602511E+00 | 6.62046021E-01 | -2.49567651E+00 | 4.43678475E+00 |
| 4 | 6 | 4.41095697E-01 | 1.22893160E+00 | -4.65968105E-01 | -1.47217426E+00 | 4.25615147E+00 |