

Monthly Collectible

BY FRANK DONOVAN, W3LPL
e-mail: donovan@sgate.com

Cable Attenuation Charts

I developed and have been using the following cable attenuation charts for some years. Contesters to whom I've given copies have found them most useful, as well. **Table 1** shows common cable attenuation per 100 feet, with specific values for each ham band. **Table 2** is in cable feet per dB, which can be very handy for tradeoff analysis. (For example, do I really need to use Andrew LDF5 for my 1000-foot run to my Beverages or is RG-8X good enough?)

Table 3 gives the results of just such a tradeoff analysis. Each entry in the table represents the cable length in feet before Andrew LDF5 offers a 1 dB advantage, versus the various cables listed. **Table 4** is identical to Table 3, except the trades in the fourth table are for Andrew LDF4.

Table 1. Cable attenuation (dB per 100 ft).

| | 1.8 | 3.5 | 7.0 | 14 | 21 | 28 | 50 | 144 | 440 | 1296 |
|--------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| 1 1/4" LDF7-50A | .03 | .04 | .06 | .08 | .10 | .12 | .16 | .27 | 0.5 | 0.9 |
| FHJ-7 | .03 | .05 | .07 | .10 | .12 | .15 | .20 | .37 | 0.8 | 1.7 |
| 7/8" LDF5-50A | .04 | .06 | .09 | .14 | .17 | .19 | .26 | .45 | 0.8 | 1.5 |
| FXA78-50J | .06 | .08 | .13 | .17 | .23 | .27 | .39 | .77 | 1.4 | 2.8 |
| 3/4" CATV | .06 | .08 | .13 | .17 | .23 | .26 | .38 | .62 | 1.7 | 3.0 |
| 1/2" LDF4-50A | .09 | .13 | .17 | .25 | .31 | .36 | .48 | .84 | 1.4 | 2.5 |
| RG-17 | .10 | .13 | .18 | .27 | .34 | .40 | .50 | 1.3 | 2.5 | 5.0 |
| SLA12-50J | .11 | .15 | .20 | .28 | .35 | .42 | .56 | 1.0 | 1.9 | 3.0 |
| FXA12-50J | .12 | .16 | .22 | .33 | .40 | .47 | .65 | 1.2 | 2.1 | 4.0 |
| EQVIV TO 1/2 CATV FXA38-50J | .16 | .23 | .31 | .45 | .53 | .64 | .85 | 1.5 | 2.7 | 4.9 |
| 9913 | .16 | .23 | .31 | .45 | .53 | .64 | .92 | 1.6 | 2.7 | 5.0 |
| RG-213 | .25 | .37 | .55 | .75 | 1.0 | 1.2 | 1.6 | 2.8 | 5.1 | 10.0 |
| RG-8X | .49 | .68 | 1.0 | 1.4 | 1.7 | 1.9 | 2.5 | 4.5 | 8.4 | — |

Table 2. Cable attenuation (Ft per dB).

| | 1.8 | 3.5 | 7.0 | 14.0 | 21.0 | 28.0 | 50.0 | 144 | 440 | 1296 |
|-----------|------|------|------|------|------|------|------|-----|-----|------|
| LDF7-50A | 3333 | 2500 | 1666 | 1250 | 1000 | 833 | 625 | 370 | 200 | 110 |
| FHJ-7 | 2775 | 2080 | 1390 | 1040 | 833 | 667 | 520 | 310 | 165 | 92 |
| LDF5-50A | 2500 | 1666 | 1111 | 714 | 588 | 526 | 385 | 222 | 125 | 67 |
| FXA78-50J | 1666 | 1250 | 769 | 588 | 435 | 370 | 256 | 130 | 71 | 36 |
| 3/4" CATV | 1666 | 1250 | 769 | 588 | 435 | 385 | 275 | 161 | 59 | 33 |
| LDF4-50A | 1111 | 769 | 588 | 400 | 323 | 266 | 208 | 119 | 71 | 40 |
| RG-17 | 1000 | 769 | 556 | 370 | 294 | 250 | 200 | 77 | 40 | 20 |
| SLA12-50J | 909 | 667 | 500 | 355 | 285 | 235 | 175 | 100 | 53 | 34 |
| FXA12-50J | 834 | 625 | 455 | 300 | 250 | 210 | 150 | 83 | 48 | 25 |
| FXA38-50J | 625 | 435 | 320 | 220 | 190 | 155 | 115 | 67 | 37 | 20 |
| 9913 | 625 | 435 | 320 | 220 | 190 | 155 | 110 | 62 | 37 | 20 |
| RG-213 | 400 | 270 | 180 | 130 | 100 | 83 | 62 | 36 | 20 | 10 |
| RG-8X | 204 | 147 | 100 | 71 | 59 | 53 | 40 | 22 | 12 | — |

Table 3. Feet required for 1 dB advantage LDF5-50A versus:

| | 1.8 | 3.5 | 7.0 | 14.0 | 21.0 | 28.0 | 50.0 | 144 | 440 | 1296 |
|-----------|------|------|------|------|------|------|------|-----|-----|------|
| LDF4-50A | 2000 | 1430 | 1250 | 910 | 715 | 625 | 435 | 250 | 165 | 100 |
| RG-17 | 1666 | 1430 | 1110 | 770 | 560 | 475 | 420 | 120 | 60 | 30 |
| FXA12-50J | 1250 | 1000 | 770 | 525 | 435 | 355 | 255 | 120 | 75 | 40 |
| 9913 | 835 | 590 | 455 | 320 | 280 | 220 | 150 | 85 | 53 | 29 |

Table 4. Feet required for 1 dB advantage LDF4-50A versus:

| | 1.8 | 3.5 | 7.0 | 14.0 | 21.0 | 28.0 | 50.0 | 144 | 440 | 1296 |
|-----------|------|------|------|------|------|------|------|-----|-----|------|
| RG-17 | — | — | — | — | — | — | — | 220 | 90 | 40 |
| FXA12-50J | — | — | 2000 | 1250 | 1100 | 835 | 625 | 250 | 145 | 65 |
| 9913 | 1430 | 1000 | 715 | 500 | 455 | 345 | 235 | 135 | 75 | 40 |
| RG-213 | 910 | 600 | 285 | 200 | 150 | 120 | 85 | 45 | 20 | 12 |