# NEGATIVE IMPEDANCE PROVIDED BY SERIES E TYPE REPEATERS

## GENERAL

This practice gives in tabular form the negative impedances provided by Series E type negative impedance repeaters for all of the strapping combinations given in Section A304.486. Information on the values of the various network elements is given in Section AB22.155.1.

A knowledge of the actual negative impedance required in the repeater to give a desired transmission gain is not required for many of the circuit design problems ordinarily encountered. For certain specific problems, however, such as the use of these repeaters to improve the impedance characteristics of a line, or to determine the effect of the repeater on return loss, and in certain of the more complex special service line applications, data of this kind are useful.

## SUMMARY OF DATA

Table 1 gives the negative impedance characteristic of the series element E-type repeater for the half section termination of the 17 types of loaded line facilities listed in the strapping charts of B.S.P. Section A304.486. A separate impedance-frequency characteristic is tabulated for each nominal gain step which covers a range of nominal gain from 1.5 db to 8.0 db in 0.5 db steps. The frequency range is from 200 cps to about 1.1 times the cutoff frequency of the facility involved.

Table 2 lists the negative impedance of the repeater at 1000 cps with its network adjusted for various end sections of loaded cable ranging from 0.3 to 1.2 section.

Table 3 lists similar data for certain sample conditions of facility and gain for various end sections and various frequencies.

Since these data represent values obtained from measurements on a single representative repeater, some variation is to be expected. It is not expected, however, that the values obtained with particular repeaters will vary more than $\pm$ 5% from the information given herein.

TABLE 1

NEGATIVE IMPEDANCE OF NETWORK 1X
19 CNB)
22 BSA)BSS
24 DSM)

| Gain | F | R | X |
|---|---|---|---|
| 1.5db | 200 | - 409 | - 133 |
| | 500 | - 429 | - 24 |
| | 1000 | - 441 | + 20 |
| | 1500 | - | |
| | 2000 | - 481 | 105 |
| | 2800 | - 545 | 185 |
| | 3000 | - 564 | 214 |
| | 3500 | - 638 | 335 |
| .8 fc → | 3900 | - 672 | 512 |
| | 4000 | - 641 | 609 |
| fc → | 4900 | - 154 | 889 |
| | 5000 | - 69 | 866 |
| | 5200 | - 8 | 803 |
| 1.1 fc → | 5400 | + 26 | 723 |
| 2.0db | 200 | - 544 | - 193 |
| | 500 | - 572 | - 44 |
| | 1000 | - 585 | + 33 |
| | 1500 | - | |
| | 2000 | - 626 | 136 |
| | 2800 | - 699 | 231 |
| | 3000 | - 723 | 263 |
| | 3500 | - 806 | 397 |
| .8 fc → | 3900 | - 874 | 590 |
| | 4000 | - 879 | 673 |
| fc → | 4900 | - 212 | 1146 |
| | 5000 | - 149 | 1112 |
| | 5200 | - 39 | 985 |
| 1.1 fc → | 5400 | + 19 | 906 |
| 2.5db | 200 | - 641 | - 232 |
| | 500 | - 679 | - 63 |
| | 1000 | - 690 | + 7 |
| | 1500 | - | |
| | 2000 | - 739 | 115 |
| | 2800 | - 819 | 205 |
| | 3000 | - 846 | 234 |
| | 3500 | - 947 | 329 |
| .8 fc → | 3900 | -1053 | 464 |
| | 4000 | -1081 | 514 |
| fc → | 4900 | - 884 | 1419 |
| | 5000 | - 709 | 1553 |
| | 5200 | - 351 | 1584 |
| 1.1 fc → | 5400 | - 103 | 1416 |
| 3.0db | 200 | - 788 | - 314 |
| | 500 | - 838 | - 83 |
| | 1000 | - 850 | + 25 |
| | 1500 | - | |
| | 2000 | - 894 | 148 |
| | 2800 | - 976 | 244 |
| | 3000 | -1011 | 273 |
| | 3500 | -1125 | 375 |
| .8 fc → | 3900 | -1260 | 526 |
| | 4000 | -1295 | 596 |
| fc → | 4900 | - 944 | 1817 |
| | 5000 | - 687 | 1915 |
| | 5200 | - 328 | 1862 |
| 1.1 fc → | 5400 | - 28 | 1635 |
| 3.5db | 200 | - 844 | - 339 |
| | 500 | - 898 | - 89 |
| | 1000 | - 911 | + 24 |
| | 1500 | - | |
| | 2000 | - 963 | 165 |
| | 2800 | -1068 | 277 |
| | 3000 | -1108 | 310 |
| | 3500 | -1243 | 457 |
| .8 fc → | 3900 | -1396 | 701 |
| | 4000 | -1425 | 822 |
| fc → | 4900 | -1727 | 614 |
| | 5000 | - 384 | 1787 |
| | 5200 | - 129 | 1606 |
| 1.1 fc → | 5400 | - 5 | 1423 |
| 4.0db | 200 | - 976 | - 407 |
| | 500 | -1035 | - 102 |
| | 1000 | -1036 | + 52 |
| | 2000 | -1048 | 213 |
| | 2800 | -1104 | 290 |
| | 3000 | -1135 | 303 |
| | 3500 | -1301 | 350 |
| .8 fc → | 3900 | -1599 | 446 |
| | 4000 | -1737 | 521 |
| fc → | 4900 | - 432 | 2558 |
| | 5000 | - 136 | 2222 |
| | 5200 | + 66 | 1860 |
| 1.1 fc → | 5400 | + 90 | 1547 |
| 4.5db | 200 | - 994 | - 440 |
| | 500 | -1082 | - 136 |
| | 1000 | -1110 | + 7 |
| | 1500 | - | |
| | 2000 | -1187 | 127 |
| | 2800 | -1342 | 239 |
| | 3000 | -1386 | 273 |
| | 3500 | -1572 | 428 |
| .8 fc → | 3900 | -1780 | 634 |
| | 4000 | -1838 | 739 |
| fc → | 4900 | -1176 | 2466 |
| | 5000 | - 855 | 2606 |
| | 5200 | - 309 | 2415 |
| 1.1 fc → | 5400 | - 7 | 2101 |
| 5.0db | 200 | -1040 | - 460 |
| | 500 | -1129 | - 150 |
| | 1000 | -1150 | - 9 |
| | 2000 | -1233 | + 113 |
| | 2400 | -1293 | 158 |
| | 2800 | -1361 | 214 |
| | 3000 | -1431 | 242 |
| | 3500 | -1646 | 367 |
| .8 fc → | 3900 | -1891 | 549 |
| | 4000 | -1976 | 630 |
| fc → | 4900 | -1835 | 2781 |
| | 5000 | -1236 | 2922 |
| | 5200 | - 486 | 2793 |
| 1.1 fc → | 5400 | - 49 | 2413 |

NEGATIVE IMPEDANCE OF NETWORK 1X (Cont'd)
19 CNB)
22 BSA)B88
24 DSM)

| Gain | F | R | X |
|---|---|---|---|
| 5.5db | 200 | -1200 | - 563 |
| | 500 | -1314 | - 145 |
| | 1000 | -1324 | + 56 |
| | 1500 | - | |
| | 2000 | -1360 | 258 |
| | 2800 | -1492 | 386 |
| | 3000 | -1560 | 440 |
| | 3500 | -1793 | 658 |
| .8 fc → | 3900 | -2065 | 1174 |
| | 4000 | -2087 | 1410 |
| fc → | 4900 | - 291 | 2230 |
| | 5000 | - 141 | 2063 |
| | 5200 | + 37 | 1812 |
| 1.1 fc → | 5400 | + 86 | 1646 |
| 6.0db | 200 | -1246 | - 598 |
| | 500 | -1357 | - 156 |
| | 1000 | -1378 | + 49 |
| | 2000 | -1450 | 277 |
| | 2400 | -1528 | 371 |
| | 2800 | -1634 | 484 |
| | 3000 | -1710 | 580 |
| | 3500 | -1939 | 1025 |
| .8 fc → | 3900 | -1911 | 1677 |
| | 4000 | -1747 | 1929 |
| fc → | 4900 | - 122 | 1956 |
| | 5000 | - 17 | 1792 |
| | 5200 | + 87 | 1607 |
| 1.1 fc → | 5400 | + 76 | 1448 |
| 6.5db | 200 | -1275 | - 630 |
| | 500 | -1425 | - 159 |
| | 1000 | -1439 | + 70 |
| | 1500 | - | |
| | 2000 | -1451 | 287 |
| | 2800 | -1606 | 426 |
| | 3000 | -1676 | 471 |
| | 3500 | -1984 | 693 |
| .8 fc → | 3900 | -2227 | 1286 |
| | 4000 | -2214 | 1597 |
| fc → | 4900 | - 202 | 2266 |
| | 5000 | - 88 | 2116 |
| | 5200 | + 63 | 1892 |
| 1.1 fc → | 5400 | + 152 | 1697 |
| 7.0db | 200 | -1415 | - 736 |
| | 500 | -1546 | - 232 |
| | 1000 | -1580 | - 19 |
| | 2000 | -1698 | + 200 |
| | 2400 | -1780 | 292 |
| | 2800 | -1902 | 393 |
| | 3000 | -1985 | 463 |
| | 3500 | -2209 | 775 |
| .8 fc → | 3900 | -2378 | 1261 |
| | 4000 | -2383 | 1403 |
| fc → | 4900 | -1145 | 2760 |
| | 5000 | - 904 | 2714 |
| | 5200 | - 538 | 2640 |
| 1.1 fc → | 5400 | - 238 | 2446 |

| Gain | F | R | X |
|---|---|---|---|
| 7.5db | 200 | -1358 | - 713 |
| | 300 | -1495 | - 451 |
| | 500 | -1569 | - 234 |
| | 1000 | -1613 | - 25 |
| | 1500 | -1659 | + 79 |
| | 2000 | -1732 | 171 |
| | 2400 | -1817 | 252 |
| | 2800 | -1949 | 344 |
| | 3000 | -2031 | 431 |
| | 3500 | -2334 | 719 |
| .8 fc → | 3900 | - | |
| | 4000 | -2534 | 1478 |
| fc → | 4900 | - 585 | 3037 |
| | 5000 | - 365 | 2875 |
| | 5200 | + 64 | 2571 |
| 1.1 fc → | 5400 | - | |
| 8.0db | 200 | -1490 | - 812 |
| | 500 | -1665 | - 245 |
| | 1000 | -1700 | - 7 |
| | 2000 | -1782 | + 223 |
| | 2400 | -1847 | 300 |
| | 2800 | -1955 | 381 |
| | 3000 | -2026 | 430 |
| | 3500 | -2311 | 607 |
| .8 fc → | 3900 | -2688 | 950 |
| | 4000 | -2799 | 1142 |
| fc → | 4900 | -1135 | 3741 |
| | 5000 | - 623 | 3523 |
| | 5200 | - 136 | 3072 |
| 1.1 fc → | 5400 | + 63 | 2588 |

TABLE 1

NEGATIVE IMPEDANCE OF NETWORK 2X
19 DNB)
24 CSM) B88

| Gain | | F | R | X |
|---|---|---|---|---|
| 1.5db | | 200 | - 453 | - 152 |
| | | 500 | - 473 | - 26 |
| | | 1000 | - 483 | + 36 |
| | | 1500 | - 489 | 79 |
| | | 2000 | - 502 | 117 |
| | | 2400 | - 523 | 148 |
| | | 2800 | - 548 | 184 |
| | | 3000 | - 570 | 201 |
| | | 4000 | - 733 | 424 |
| | .8 fc → | 4300 | - 775 | 586 |
| | | 5000 | - 347 | 1054 |
| | | 5400 | - 82 | 934 |
| | fc → | 5500 | - 30 | 880 |
| | | 5600 | - 11 | 844 |
| | 1.1 fc → | 6100 | + 69 | 721 |
| 2.0db | | 200 | - 598 | - 203 |
| | | 500 | - 629 | - 32 |
| | | 1000 | - 633 | + 45 |
| | | 1500 | - 637 | 111 |
| | | 2000 | - 646 | 164 |
| | | 2400 | - 659 | 197 |
| | | 2800 | - 688 | 242 |
| | | 3000 | - 706 | 264 |
| | | 4000 | - 926 | 544 |
| | .8 fc → | 4300 | - 950 | 786 |
| | | 5000 | - 156 | 1228 |
| | | 5400 | + 9 | 985 |
| | fc → | 5500 | + 31 | 962 |
| | | 5600 | + 72 | 900 |
| | 1.1 fc → | 6100 | + 78 | 727 |
| 2.5db | | 200 | - 724 | - 276 |
| | | 500 | - 769 | - 81 |
| | | 1000 | - 780 | 0 |
| | | 1500 | - 796 | + 52 |
| | | 2000 | - 821 | 93 |
| | | 2400 | - 842 | 123 |
| | | 2800 | - 877 | 150 |
| | | 3000 | - 907 | 167 |
| | | 4000 | -1118 | 285 |
| | .8 fc→ | 4300 | -1236 | 364 |
| | | 5000 | -1703 | 887 |
| | | 5400 | -1637 | 1865 |
| | fc → | 5500 | -1365 | 2075 |
| | | 5600 | -1078 | 2281 |
| | 1.1 fc → | 6100 | + 55 | 1734 |
| 3.0db | | 200 | - 883 | - 358 |
| | | 500 | - 934 | - 81 |
| | | 1000 | - 935 | + 55 |
| | | 1500 | - 933 | 134 |
| | | 2000 | - 935 | 196 |
| | | 2400 | - 947 | 242 |
| | | 2800 | - 973 | 280 |
| | | 3000 | - 992 | 299 |
| | | 3500 | -1084 | 359 |
| | | 4000 | -1264 | 486 |
| | .8 fc→ | 4300 | -1529 | 699 |
| | | 4500 | -1489 | 832 |
| | | 5000 | -1318 | 1682 |
| | | 5400 | - 591 | 1957 |
| | fc→ | 5500 | - 396 | 1897 |
| | | 5600 | - 245 | 1828 |
| | 1.1 fc→ | 6100 | + 65 | 1380 |

| Gain | | F | R | X |
|---|---|---|---|---|
| 3.5db | | 200 | - 965 | - 407 |
| | | 500 | -1035 | - 109 |
| | | 1000 | -1052 | + 23 |
| | | 1500 | -1062 | 101 |
| | | 2000 | -1083 | 170 |
| | | 2400 | -1116 | 220 |
| | | 2800 | -1166 | 271 |
| | | 3000 | -1196 | 295 |
| | | 4000 | -1481 | 599 |
| | .8 fc → | 4300 | -1598 | 810 |
| | | 5000 | -1421 | 1862 |
| | | 5400 | - 650 | 2163 |
| | fc → | 5500 | - 475 | 2120 |
| | | 5600 | - 282 | 2074 |
| | 1.1 fc → | 6100 | + 135 | 1567 |
| 4.0db | | 200 | -1051 | - 460 |
| | | 500 | -1137 | - 117 |
| | | 1000 | -1138 | + 38 |
| | | 1500 | -1145 | 136 |
| | | 2000 | -1162 | 214 |
| | | 2400 | -1188 | 272 |
| | | 2800 | -1219 | 326 |
| | | 3000 | -1243 | 357 |
| | | 4000 | -1583 | 613 |
| | .8 fc → | 4300 | -1782 | 819 |
| | | 5000 | -1438 | 2575 |
| | | 5400 | - 125 | 2306 |
| | fc → | 5500 | + 18 | 2129 |
| | | 5600 | + 109 | 1909 |
| | 1.1 fc → | 6100 | + 142 | 1411 |
| 4.5db | | 200 | -1124 | - 518 |
| | | 500 | -1218 | - 163 |
| | | 1000 | -1250 | + 15 |
| | | 1500 | -1289 | 69 |
| | | 2000 | -1346 | 144 |
| | | 2400 | -1400 | 215 |
| | | 2800 | -1489 | 298 |
| | | 3000 | -1532 | 352 |
| | | 4000 | -1764 | 833 |
| | .8 fc → | 4300 | -1822 | 1075 |
| | | 5000 | -1542 | 1921 |
| | | 5400 | -1001 | 2356 |
| | fc → | 5500 | - 832 | 2384 |
| | | 5600 | - 624 | 2380 |
| | 1.1 fc → | 6100 | + 114 | 1994 |
| 5.0db | | 200 | -1190 | - 571 |
| | | 500 | -1310 | - 177 |
| | | 1000 | -1330 | - 10 |
| | | 1500 | -1356 | + 83 |
| | | 2000 | -1396 | 159 |
| | | 2400 | -1438 | 215 |
| | | 2800 | -1505 | 282 |
| | | 3000 | -1542 | 317 |
| | | 4000 | -1859 | 619 |
| | .8 fc → | 4300 | -2002 | 796 |
| | | 5000 | -2288 | 1732 |
| | | 5400 | -1925 | 2707 |
| | fc → | 5500 | -1585 | 2866 |
| | | 5600 | -1258 | 3015 |
| | | 6000 | - 30 | 2662 |
| | 1.1 fc → | 6100 | + 56 | 2460 |

TABLE 1

NEGATIVE IMPEDANCE OF NETWORK 2X (Cont'd)
19 DNB)
24 CSM) B88

| Gain | | F | R | X |
|---|---|---|---|---|
| 5.5db | | 200 | -1317 | - 665 |
| | | 500 | -1454 | - 200 |
| | | 1000 | -1479 | + 8 |
| | | 1500 | -1509 | 110 |
| | | 2000 | -1551 | 201 |
| | | 2400 | -1600 | 275 |
| | | 2800 | -1672 | 362 |
| | | 3000 | -1720 | 412 |
| | | 4000 | -2106 | 892 |
| | .8 fc → | 4300 | -2155 | 1222 |
| | | 5000 | -1795 | 2481 |
| | | 5400 | - 849 | 2837 |
| | fc → | 5500 | - 608 | 2831 |
| | | 5600 | - 423 | 2737 |
| | 1.1 fc → | 6100 | + 167 | 2114 |
| 6.0db | | 200 | -1387 | - 717 |
| | | 500 | -1540 | - 212 |
| | | 1000 | -1559 | + 10 |
| | | 1500 | -1575 | 136 |
| | | 2000 | -1602 | 230 |
| | | 2400 | -1648 | 296 |
| | | 2800 | -1720 | 365 |
| | | 3000 | -1771 | 410 |
| | | 4000 | -2259 | 845 |
| | .8 fc → | 4300 | -2413 | 1204 |
| | | 5000 | -1854 | 2837 |
| | | 5400 | - 806 | 2829 |
| | fc → | 5500 | - 507 | 2868 |
| | | 5600 | - 360 | 2733 |
| | | 6000 | + 113 | 2180 |
| | 1.1 fc → | 6100 | + 163 | 2070 |
| 6.5db | | 200 | -1444 | - 765 |
| | | 500 | -1618 | - 212 |
| | | 1000 | -1628 | + 42 |
| | | 1500 | - | |
| | | 2000 | -1631 | 293 |
| | | 2400 | -1652 | 360 |
| | | 2800 | -1696 | 422 |
| | | 3000 | -1745 | 454 |
| | | 4000 | -2194 | 826 |
| | .8 fc → | 4300 | -2410 | 1158 |
| | | 5000 | -1906 | 2826 |
| | | 5400 | - 598 | 2968 |
| | fc → | 5500 | - 535 | 2949 |
| | | 5600 | - 286 | 2758 |
| | 1.1 fc → | 6100 | + 161 | 2119 |
| 7.0db | | 200 | -1527 | - 839 |
| | | 300 | -1650 | - 512 |
| | | 500 | -1711 | - 233 |
| | | 1000 | -1726 | + 35 |
| | | 1500 | -1732 | 188 |
| | | 2000 | -1753 | 302 |
| | | 2400 | -1789 | 369 |
| | | 2800 | -1856 | 451 |
| | | 3000 | -1908 | 494 |
| | | 3500 | -2589 | 670 |
| | | 4000 | -2400 | 1039* |
| | .8 fc → | 4300 | -2519 | 1526 |
| | | 5000 | -1510 | 3056 |
| | | 5400 | - 513 | 2912 |
| | fc → | 5500 | - 305 | 2791 |
| | | 5600 | - 148 | 2660 |
| | | 6000 | + 161 | 2108 |
| | 1.1 fc → | 6100 | + 223 | 2014 |

| Gain | | F | R | X |
|---|---|---|---|---|
| 7.5db | | 200 | -1569 | - 903 |
| | | 500 | -1799 | - 250 |
| | | 1000 | -1803 | + 35 |
| | | 1500 | -1803 | 200 |
| | | 2000 | -1794 | 307 |
| | | 2400 | -1811 | 366 |
| | | 2800 | -1858 | 417 |
| | | 3000 | -1896 | 442 |
| | | 4000 | -2458 | 746 |
| | .8 fc → | 4300 | -2771 | 1076 |
| | | 5000 | -2304 | 3277 |
| | | 5400 | - 858 | 3496 |
| | fc → | 5500 | - 555 | 3365 |
| | | 5600 | - 289 | 3208 |
| | 1.1 fc → | 6100 | + 236 | 2351 |
| 8.0db | | 200 | -1652 | - 998 |
| | | 500 | -1887 | - 302 |
| | | 1000 | -1910 | + 14 |
| | | 1500 | -1921 | 142 |
| | | 2000 | -1937 | 249 |
| | | 2400 | -1976 | 313 |
| | | 2800 | -2039 | 376 |
| | | 3000 | -2085 | 404 |
| | | 4000 | -2624 | 706 |
| | .8 fc → | 4300 | -2941 | 946 |
| | | 5000 | -3240 | 2799 |
| | | 5400 | -1944 | 3867 |
| | fc → | 5500 | -1502 | 3922 |
| | | 5600 | -1081 | 3873 |
| | | 6000 | - 75 | 3178 |
| | 1.1 fc → | 6100 | + 65 | 2997 |

TABLE 1

NEGATIVE IMPEDANCE OF NETWORK 3X
19 CNB)
22 BSA)D88
24 DSM)

| Gain | F | R | X | Gain | F | R | X |
|---|---|---|---|---|---|---|---|
| 1.5db | 200 | - 342 | - 116 | 3.5db | 200 | - 723 | - 278 |
| | 300 | - 354 | - 70 | | 300 | - 750 | - 168 |
| | 500 | - 360 | - 25 | | 500 | - 766 | - 68 |
| | 1000 | - 372 | + 24 | | 1000 | - 792 | + 35 |
| | 1500 | - 393 | 64 | | 1500 | - 819 | 108 |
| | 2000 | - 429 | 109 | | 2000 | - 871 | 182 |
| | 2500 | - 473 | 165 | | 2500 | - 961 | 277 |
| | 3000 | - 530 | 262 | | 3000 | -1099 | 441 |
| .8 fc → | 3200 | - 560 | 330 | .8 fc → | 3200 | -1180 | 563 |
| | 3500 | - 583 | 468 | | 3500 | -1284 | 945 |
| fc → | 4000 | - 382 | 788 | fc → | 4000 | - 502 | 1636 |
| 1.1 fc → | 4400 | - 83 | 735 | 1.1 fc → | 4400 | + 16 | 1228 |
| | 5000 | + 33 | 523 | | 5000 | + 57 | 848 |
| 2.0db | 200 | - 454 | - 154 | 4.0db | 200 | - 805 | - 312 |
| | 300 | - 470 | - 93 | | 300 | - 836 | - 182 |
| | 500 | - 475 | - 32 | | 500 | - 850 | - 73 |
| | 1000 | - 483 | + 36 | | 1000 | - 868 | + 46 |
| | 1500 | - 497 | 83 | | 1500 | - 891 | 122 |
| | 2000 | - 527 | 123 | | 2000 | - 932 | 190 |
| | 2500 | - 575 | 169 | | 2500 | -1021 | 266 |
| | 3000 | - 673 | 242 | | 3000 | -1204 | 407 |
| .8 fc → | 3200 | - 732 | 308 | .8 fc → | 3200 | -1318 | 529 |
| | 3500 | - 829 | 470 | | 3500 | -1498 | 945 |
| fc → | 4000 | - 597 | 1023 | fc → | 4000 | - 556 | 1816 |
| 1.1 fc → | 4400 | - 147 | 981 | 1.1 fc → | 4400 | + 13 | 1307 |
| | 5000 | + 36 | 699 | | 5000 | + 55 | 915 |
| 2.5db | 200 | - 547 | - 193 | 4.5db | 200 | - 895 | - 364 |
| | 300 | - 562 | - 112 | | 300 | - 924 | - 223 |
| | 500 | - 571 | - 37 | | 500 | - 939 | - 100 |
| | 1000 | - 590 | + 47 | | 1000 | - 962 | + 77 |
| | 1500 | - 614 | 110 | | 1500 | - 992 | 156 |
| | 2000 | - 660 | 176 | | 2000 | -1059 | 230 |
| | 2500 | - 735 | 286 | | 2500 | -1204 | 365 |
| | 3000 | - 823 | 503 | | 3000 | -1462 | 709 |
| .8 fc → | 3200 | - 813 | 654 | .8 fc → | 3200 | -1501 | 980 |
| | 3500 | - 673 | 912 | | 3500 | -1211 | 1618 |
| fc → | 4000 | - 195 | 971 | fc → | 4000 | - 189 | 1575 |
| 1.1 fc → | 4400 | - 11 | 806 | 1.1 fc → | 4400 | + 51 | 1208 |
| | 5000 | + 15 | 629 | | 5000 | + 66 | 964 |
| 3.0db | 200 | - 644 | - 231 | | | | |
| | 300 | - 664 | - 132 | 5.0db | 200 | - 928 | - 381 |
| | 500 | - 674 | - 40 | | 300 | - 976 | - 228 |
| | 1000 | - 687 | + 59 | | 500 | - 994 | - 84 |
| | 1500 | - 701 | 129 | | 1000 | -1019 | + 47 |
| | 2000 | - 739 | 192 | | 1500 | -1053 | 142 |
| | 2500 | - 815 | 270 | | 2000 | -1113 | 227 |
| | 3000 | - 981 | 442 | | 2500 | -1243 | 354 |
| .8 fc → | 3200 | -1057 | 603 | | 3000 | -1478 | 645 |
| | 3500 | -1025 | 1065 | .8 fc → | 3200 | -1551 | 882 |
| fc → | 4000 | - 166 | 1246 | | 3500 | -1441 | 1456 |
| 1.1 fc → | 4400 | + 24 | 955 | fc → | 4000 | - 333 | 1726 |
| | 5000 | - 28 | 686 | 1.1 fc → | 4400 | - 6 | 1335 |
| | | | | | 5000 | + 53 | 992 |

TABLE 1

NEGATIVE IMPEDANCE OF NETWORK 3X (Cont'd)
19 CNB)
22 BSA)D88
24 DSM)

| Gain | F | R | X |
|---|---|---|---|
| 5.5db | 200 | - 971 | - 413 |
| | 300 | -1016 | - 253 |
| | 500 | -1046 | - 111 |
| | 1000 | -1076 | + 38 |
| | 1500 | -1134 | 135 |
| | 2000 | -1237 | 243 |
| | 2500 | -1413 | 434 |
| | 3000 | -1625 | 927 |
| .8 fc → | 3200 | -1561 | 1306 |
| | 3500 | -1117 | 1795 |
| fc → | 4000 | - 216 | 1606 |
| 1.1 fc → | 4400 | + 35 | 1272 |
| | 5000 | + 85 | 972 |
| 6.0db | 200 | -1055 | - 460 |
| | 300 | -1110 | - 283 |
| | 500 | -1138 | - 135 |
| | 1000 | -1170 | + 6 |
| | 1500 | -1226 | 111 |
| | 2000 | -1303 | 202 |
| | 2500 | -1440 | 310 |
| | 3000 | -1712 | 520 |
| .8 fc → | 3200 | -1901 | 705 |
| | 3500 | -2172 | 1333 |
| fc → | 4000 | - 578 | 2480 |
| 1.1 fc → | 4400 | + 40 | 1663 |
| | 5000 | + 49 | 1180 |
| 6.5db | 200 | -1090 | - 489 |
| | 300 | -1145 | - 305 |
| | 500 | -1179 | - 140 |
| | 1000 | -1204 | + 31 |
| | 1500 | -1234 | 135 |
| | 2000 | -1295 | 219 |
| | 2500 | -1417 | 310 |
| | 3000 | -1668 | 426 |
| .8 fc → | 3200 | -1872 | 528 |
| | 3500 | -2344 | 1029 |
| fc → | 4000 | - 856 | 2833 |
| 1.1 fc → | 4400 | + 31 | 1888 |
| | 5000 | + 84 | 1268 |
| 7.0db | 200 | -1136 | - 502 |
| | 300 | -1200 | - 311 |
| | 500 | -1229 | - 141 |
| | 1000 | -1261 | + 17 |
| | 1500 | -1296 | 123 |
| | 2000 | -1358 | 215 |
| | 2500 | -1472 | 305 |
| | 3000 | -1693 | 444 |
| .8 fc → | 3200 | -1833 | 552 |
| | 3500 | -1873 | 906 |
| fc → | 4000 | -1216 | 2771 |
| 1.1 fc → | 4400 | + 187 | 2225 |
| | 5000 | + 379 | 1379 |

| Gain | F | R | X |
|---|---|---|---|
| 7.5db | 200 | -1175 | - 551 |
| | 300 | -1236 | - 350 |
| | 500 | -1275 | - 175 |
| | 1000 | -1320 | - 6 |
| | 1500 | -1396 | + 108 |
| | 2000 | -1515 | 237 |
| | 2500 | -1677 | 420 |
| | 3000 | -1865 | 753 |
| .8 fc → | 3200 | -1951 | 958 |
| | 3500 | -1949 | 1462 |
| fc → | 4000 | -1055 | 2335 |
| 1.1 fc → | 4400 | - 103 | 2013 |
| | 5000 | + 49 | 1408 |
| 8.0db | 200 | -1249 | - 599 |
| | 300 | -1319 | - 368 |
| | 500 | -1361 | - 173 |
| | 1000 | -1410 | + 10 |
| | 1500 | -1469 | 139 |
| | 2000 | -1574 | 261 |
| | 2500 | -1754 | 431 |
| | 3000 | -2036 | 777 |
| .8 fc → | 3200 | -2180 | 1038 |
| | 3500 | -2205 | 1858 |
| fc → | 4000 | - 577 | 2543 |
| 1.1 fc → | 4400 | + 5 | 1893 |
| | 4500 | + 67 | 1732 |
| | 5000 | + 96 | 1315 |

TABLE 1

NEGATIVE IMPEDANCE OF NETWORK 4X
19 DNB)
24 CSM) D88

| Gain | F | R | X |
|---|---|---|---|
| 1.5db | 200 | - 396 | - 126 |
| | 300 | - 413 | - 80 |
| | 500 | - 421 | - 24 |
| | 1000 | - 430 | + 36 |
| | 1500 | - 440 | 83 |
| | 2000 | - 459 | 121 |
| | 2500 | - 487 | 166 |
| | 3000 | - 536 | 226 |
| | 3200 | - 571 | 260 |
| | 3500 | - 616 | 333 |
| .8 fc → | 3600 | - 635 | 364 |
| | 4000 | - 669 | 586 |
| fc → | 4500 | - 421 | 901 |
| 1.1 fc → | 5000 | - 44 | 827 |
| | 5700 | + 12 | 615 |
| 2.0db | 200 | - 496 | - 177 |
| | 300 | - 511 | - 109 |
| | 500 | - 517 | - 44 |
| | 1000 | - 526 | + 31 |
| | 1500 | - 544 | 73 |
| | 2000 | - 571 | 120 |
| | 2500 | - 617 | 151 |
| | 3000 | - 698 | 200 |
| | 3200 | - 755 | 236 |
| | 3500 | - 852 | 317 |
| .8 fc → | 3600 | - 883 | 361 |
| | 4000 | -1020 | 728 |
| fc → | 4500 | - 489 | 1277 |
| 1.1 fc → | 5000 | - 27 | 1007 |
| | 5700 | + 61 | 751 |
| 2.5db | 200 | - 573 | - 215 |
| | 300 | - 592 | - 133 |
| | 500 | - 604 | - 60 |
| | 1000 | - 619 | + 8 |
| | 1500 | - 642 | 55 |
| | 2000 | - 678 | 97 |
| | 2500 | - 728 | 140 |
| | 3000 | - 805 | 201 |
| | 3200 | - 848 | 235 |
| | 3500 | - 925 | 301 |
| .8 fc → | 3600 | - 966 | 323 |
| | 4000 | -1130 | 523 |
| fc → | 4500 | -1175 | 1193 |
| 1.1 fc → | 5000 | - 243 | 1567 |
| | 5700 | + 75 | 999 |
| 3.0db | 200 | - 682 | - 255 |
| | 300 | - 703 | - 154 |
| | 500 | - 717 | - 67 |
| | 1000 | - 724 | + 19 |
| | 1500 | - 731 | 82 |
| | 2000 | - 761 | 126 |
| | 2500 | - 825 | 153 |
| | 3000 | - 932 | 187 |
| | 3200 | - 996 | 199 |
| | 3500 | -1166 | 274 |
| .8 fc → | 3600 | -1217 | 298 |
| | 4000 | -1665 | 768 |
| fc → | 4500 | - 720 | 2031 |
| 1.1 fc → | 5000 | + 132 | 1286 |
| | 5700 | + 93 | 933 |

| Gain | F | R | X |
|---|---|---|---|
| 3.5db | 200 | - 798 | - 297 |
| | 300 | - 828 | - 173 |
| | 500 | - 837 | - 58 |
| | 1000 | - 845 | + 69 |
| | 1500 | - 850 | 152 |
| | 2000 | - 875 | 215 |
| | 2500 | - 934 | 285 |
| | 3000 | -1064 | 397 |
| | 3200 | -1147 | 485 |
| | 3500 | -1280 | 743 |
| .8 fc → | 3600 | -1290 | 883 |
| | 4000 | - 914 | 1510 |
| fc → | 4500 | - 105 | 1405 |
| 1.1 fc → | 5000 | + 76 | 1043 |
| | 5700 | + 88 | 827 |
| 4.0db | 200 | - 883 | - 358 |
| | 300 | - 926 | - 221 |
| | 500 | - 939 | - 96 |
| | 1000 | - 960 | + 25 |
| | 1500 | - 982 | 106 |
| | 2000 | -1020 | 174 |
| | 2500 | -1077 | 252 |
| | 3000 | -1176 | 351 |
| | 3200 | -1230 | 400 |
| | 3500 | -1333 | 514 |
| .8 fc → | 3600 | -1379 | 567 |
| | 4000 | -1578 | 961 |
| fc → | 4500 | -1164 | 1980 |
| 1.1 fc → | 5000 | - 50 | 1672 |
| | 5700 | + 96 | 1117 |
| 4.5db | 200 | - 951 | - 399 |
| | 300 | - 994 | - 245 |
| | 500 | -1017 | - 117 |
| | 1000 | -1040 | 0 |
| | 1500 | -1070 | + 75 |
| | 2000 | -1112 | 131 |
| | 2500 | -1205 | 195 |
| | 3000 | -1328 | 253 |
| | 3200 | -1429 | 310 |
| | 3500 | -1600 | 413 |
| .8 fc → | 3600 | -1621 | 473 |
| | 4000 | -1181 | 695 |
| fc → | 4500 | -1382 | 2548 |
| 1.1 fc → | 5000 | - 22 | 1912 |
| | 5700 | + 135 | 1272 |
| 5.0db | 200 | -1055 | - 454 |
| | 300 | -1105 | - 270 |
| | 500 | -1133 | - 113 |
| | 1000 | -1152 | + 49 |
| | 1500 | -1171 | 149 |
| | 2000 | -1215 | 232 |
| | 2500 | -1297 | 317 |
| | 3000 | -1499 | 472 |
| | 3200 | -1620 | 589 |
| | 3500 | -1802 | 944 |
| .8 fc → | 3600 | -1859 | 1094 |
| | 4000 | -1348 | 2067 |
| fc → | 4500 | - 191 | 1909 |
| 1.1 fc → | 5000 | + 100 | 1348 |
| | 5700 | + 84 | 1042 |

TABLE 1

NEGATIVE IMPEDANCE OF NETWORK 4X (Cont'd)

19 DNB)
24 CSM) D88

| Gain | F | R | X |
|---|---|---|---|
| 5.5db | 200 | -1090 | - 496 |
| | 300 | -1148 | - 311 |
| | 500 | -1259 | - 95 |
| | 1000 | -1210 | 0 |
| | 1500 | -1254 | + 88 |
| | 2000 | -1327 | 173 |
| | 2500 | -1459 | 276 |
| | 3000 | -1625 | 476 |
| | 3200 | -1730 | 590 |
| | 3500 | -1854 | 850 |
| .8 fc → | 3600 | -1859 | 1000 |
| | 4000 | -1756 | 1674 |
| fc → | 4500 | - 826 | 2207 |
| 1.1 fc → | 5000 | - 91 | 1909 |
| | 5700 | + 120 | 1325 |
| 6.0db | 200 | -1132 | - 515 |
| | 300 | -1189 | - 322 |
| | 500 | -1225 | - 156 |
| | 1000 | -1250 | + 10 |
| | 1500 | -1286 | 102 |
| | 2000 | -1349 | 180 |
| | 2500 | -1459 | 270 |
| | 3000 | -1643 | 418 |
| | 3200 | -1743 | 502 |
| | 3500 | -1900 | 722 |
| .8 fc → | 3600 | -1963 | 834 |
| | 4000 | -2058 | 1561 |
| fc → | 4500 | -1138 | 2437 |
| 1.1 fc → | 5000 | - 189 | 2017 |
| | 5700 | + 93 | 1415 |
| 6.5db | 200 | -1251 | - 601 |
| | 300 | -1320 | - 369 |
| | 500 | -1355 | - 170 |
| | 1000 | -1380 | + 21 |
| | 1500 | -1418 | 126 |
| | 2000 | -1479 | 232 |
| | 2500 | -1587 | 317 |
| | 3000 | -1774 | 468 |
| | 3200 | -1889 | 566 |
| | 3500 | -2094 | 837 |
| .8 fc → | 3600 | -2157 | 956 |
| | 4000 | -2173 | 1816 |
| fc → | 4500 | -1006 | 2595 |
| 1.1 fc → | 5000 | - 128 | 2098 |
| | 5700 | + 100 | 1442 |
| 7.0db | 200 | -1283 | - 618 |
| | 300 | -1365 | - 385 |
| | 500 | -1406 | - 171 |
| | 1000 | -1424 | + 10 |
| | 1500 | -1441 | 124 |
| | 2000 | -1487 | 197 |
| | 2500 | -1583 | 263 |
| | 3000 | -1793 | 356 |
| | 3200 | -1923 | 407 |
| | 3500 | -2191 | 607 |
| .8 fc → | 3600 | -2283 | 713 |
| | 4000 | -2598 | 1611 |
| fc → | 4500 | -1300 | 2945 |
| 1.1 fc → | 5000 | - 45 | 2309 |
| | 5700 | + 146 | 1534 |

| Gain | F | R | X |
|---|---|---|---|
| 7.5db | 200 | -1320 | - 658 |
| | 300 | -1406 | - 405 |
| | 500 | -1438 | - 184 |
| | 1000 | -1461 | + 17 |
| | 1500 | -1482 | 122 |
| | 2000 | -1516 | 184 |
| | 2500 | -1601 | 239 |
| | 3000 | -1799 | 289 |
| | 3200 | -1924 | 329 |
| | 3500 | -2180 | 442 |
| .8 fc → | 3600 | -2314 | 516 |
| | 4000 | -2853 | 1201 |
| fc → | 4500 | -2118 | 3076 |
| 1.1 fc → | 5000 | - 359 | 2817 |
| | 5700 | + 118 | 1800 |
| 8.0db | 200 | -1384 | - 711 |
| | 300 | -1489 | - 433 |
| | 500 | -1548 | - 193 |
| | 1000 | -1561 | + 40 |
| | 1500 | -1571 | 165 |
| | 2000 | -1607 | 243 |
| | 2500 | -1727 | 306 |
| | 3000 | -1972 | 409 |
| | 3200 | -2144 | 508 |
| | 3500 | -2444 | 759 |
| .8 fc → | 3600 | -2524 | 1018 |
| | 4000 | -2578 | 2281 |
| fc → | 4500 | - 726 | 2923 |
| 1.1 fc → | 5000 | + 47 | 2056 |
| | 5700 | + 162 | 1480 |

TABLE 1

**NEGATIVE IMPEDANCE OF NETWORK 5X**
19 CNB)
22 BSA)H88
24 DSM)

| Gain | F | R | X |
|---|---|---|---|
| 1.5db | 200 | - 307 | - 103 |
| | 500 | - 323 | - 16 |
| | 1000 | - 333 | + 30 |
| | 1500 | - 348 | 71 |
| | 2000 | - 376 | 105 |
| | 2400 | - 414 | 137 |
| .8 fc → | 2800 | - 503 | 197 |
| | 3000 | - 579 | 255 |
| | 3200 | - 655 | 411 |
| | 3400 | - 604 | 672 |
| fc → | 3500 | - 463 | 796 |
| | 3600 | - 306 | 827 |
| 1.1 fc → | 3800 | - 84 | 728 |
| | 3900 | - 42 | 671 |
| | 4000 | - 21 | 603 |
| 2.0db | 200 | - 385 | - 127 |
| | 500 | - 401 | - 21 |
| | 1000 | - 411 | + 25 |
| | 1500 | - 437 | 66 |
| | 2000 | - 477 | 100 |
| | 2400 | - 538 | 135 |
| .8 fc → | 2800 | - 657 | 206 |
| | 3000 | - 753 | 291 |
| | 3200 | - 836 | 464 |
| | 3400 | - 793 | 773 |
| fc → | 3500 | - 658 | 940 |
| | 3600 | - 446 | 1019 |
| 1.1 fc → | 3800 | - 158 | 951 |
| | 3900 | - 79 | 889 |
| | 4000 | - 35 | 795 |
| 2.5db | 200 | - 443 | - 155 |
| | 500 | - 472 | - 33 |
| | 1000 | - 493 | + 33 |
| | 1500 | - 523 | 94 |
| | 2000 | - 565 | 161 |
| | 2400 | - 603 | 241 |
| | 2500 | - 626 | 267 |
| .8 fc → | 2800 | - 662 | 369 |
| | 3000 | - 671 | 453 |
| | 3200 | - 670 | 572 |
| | 3400 | - 606 | 696 |
| fc → | 3500 | - 557 | 766 |
| | 3600 | - 460 | 816 |
| 1.1 fc → | 3800 | - 323 | 867 |
| | 3900 | - 226 | 891 |
| | 4000 | - 144 | 841 |
| 3.0db | 200 | - 566 | - 191 |
| | 300 | - 585 | - 118 |
| | 500 | - 592 | - 39 |
| | 1000 | - 618 | + 41 |
| | 1500 | - 650 | 110 |
| | 2000 | - 713 | 181 |
| | 2400 | - 797 | 280 |
| | 2500 | - 823 | 317 |
| .8 fc → | 2800 | - 923 | 497 |
| | 3000 | - 929 | 703 |
| | 3200 | - 787 | 973 |
| | 3400 | - 520 | 1114 |
| fc → | 3500 | - 362 | 1118 |
| | 3600 | - 239 | 1061 |
| 1.1 fc → | 3800 | - 88 | 900 |
| | 3900 | - 64 | 850 |
| | 4000 | - 25 | 790 |

| Gain | F | R | X |
|---|---|---|---|
| 3.5db | 200 | - 650 | - 236 |
| | 500 | - 676 | - 63 |
| | 1000 | - 700 | + 28 |
| | 1500 | - 738 | 98 |
| | 2000 | - 803 | 159 |
| | 2400 | - 891 | 231 |
| | 2500 | - 929 | 258 |
| .8 fc → | 2800 | -1063 | 380 |
| | 3000 | -1196 | 547 |
| | 3200 | -1262 | 879 |
| | 3400 | -1035 | 1364 |
| fc → | 3500 | - 740 | 1499 |
| | 3600 | - 471 | 1496 |
| 1.1 fc → | 3800 | - 114 | 1327 |
| | 3900 | - 63 | 1195 |
| | 4000 | + 12 | 1081 |
| 4.0db | 200 | - 692 | - 256 |
| | 500 | - 727 | - 63 |
| | 1000 | - 754 | + 26 |
| | 1500 | - 793 | 94 |
| | 2000 | - 868 | 157 |
| | 2400 | - 977 | 227 |
| | 2500 | -1023 | 256 |
| .8 fc → | 2800 | -1204 | 403 |
| | 3000 | -1354 | 613 |
| | 3200 | -1400 | 1039 |
| | 3400 | -1097 | 1534 |
| fc → | 3500 | - 781 | 1648 |
| | 3600 | - 514 | 1622 |
| 1.1 fc → | 3800 | - 144 | 1358 |
| | 3900 | - 54 | 1226 |
| | 4000 | + 12 | 1115 |
| 4.5db | 200 | - 767 | - 288 |
| | 500 | - 818 | - 70 |
| | 1000 | - 832 | + 58 |
| | 1500 | - 855 | 130 |
| | 2000 | - 897 | 194 |
| | 2400 | -1006 | 264 |
| | 2500 | -1035 | 278 |
| .8 fc → | 2800 | -1168 | 375 |
| | 3000 | -1282 | 509 |
| | 3200 | -1402 | 796 |
| | 3400 | -1323 | 1300 |
| fc → | 3500 | -1119 | 1526 |
| | 3600 | - 833 | 1683 |
| 1.1 fc → | 3800 | - 310 | 1593 |
| | 3900 | - | |
| | 4000 | - 30 | 1318 |
| 5.0db | 200 | - 845 | - 339 |
| | 500 | - 902 | - 91 |
| | 1000 | - 931 | + 29 |
| | 1500 | - 981 | 108 |
| | 2000 | -1080 | 189 |
| | 2400 | -1215 | 295 |
| | 2500 | -1265 | 336 |
| .8 fc → | 2800 | -1433 | 548 |
| | 3000 | -1544 | 792 |
| | 3200 | -1535 | 1195 |
| | 3400 | -1241 | 1632 |
| fc → | 3500 | - 986 | 1756 |
| | 3600 | - 730 | 1768 |
| 1.1 fc → | 3800 | - 308 | 1660 |
| | 3900 | - 191 | 1539 |
| | 4000 | - 88 | 1416 |

TABLE 1

NEGATIVE IMPEDANCE OF NETWORK 5X (Cont'd)
19 CNB)
22 BSA)H88
24 DSM)

| Gain | F | R | X |
|---|---|---|---|
| 5.5db | 200 | - 864 | - 342 |
| | 500 | - 919 | - 89 |
| | 1000 | - 944 | + 43 |
| | 1500 | - 983 | 120 |
| | 2000 | -1087 | 217 |
| | 2400 | -1206 | 289 |
| | 2500 | -1253 | 324 |
| .8 fc → | 2800 | -1428 | 512 |
| | 3000 | -1540 | 764 |
| | 3200 | -1554 | 1191 |
| | 3400 | -1261 | 1663 |
| fc → | 3500 | - 970 | 1808 |
| | 3600 | - 688 | 1840 |
| 1.1 fc → | 3800 | - 271 | 1673 |
| | 3900 | - 144 | 1556 |
| | 4000 | - 40 | 1443 |
| 6.0db | 200 | - 941 | - 383 |
| | 500 | -1006 | - 100 |
| | 1000 | -1032 | + 15 |
| | 1500 | -1088 | 97 |
| | 2000 | -1202 | 181 |
| | 2400 | -1379 | 284 |
| | 2500 | -1444 | 329 |
| .8 fc→ | 2800 | -1692 | 592 |
| | 3000 | -1833 | 945 |
| | 3200 | -1736 | 1426 |
| | 3400 | -1252 | 1839 |
| fc→ | 3500 | - 944 | 2004 |
| | 3600 | - 649 | 2001 |
| 1.1 fc→ | 3800 | - 263 | 1755 |
| | 3900 | - 148 | 1640 |
| | 4000 | - 66 | 1485 |
| 6.5db | 200 | - 964 | - 408 |
| | 500 | -1039 | - 153 |
| | 1000 | -1075 | + 9 |
| | 1500 | -1157 | 120 |
| | 2000 | -1277 | 221 |
| | 2400 | -1426 | 344 |
| | 2500 | -1485 | 394 |
| .8 fc→ | 2800 | -1673 | 629 |
| | 3000 | -1837 | 948 |
| | 3200 | -1792 | 1546 |
| | 3400 | -1223 | 2188 |
| fc→ | 3500 | - 887 | 2275 |
| | 3600 | - 503 | 2193 |
| 1.1 fc→ | 3800 | - 69 | 1831 |
| | 3900 | - 13 | 1640 |
| | 4000 | + 20 | 1473 |
| 7.0db | 200 | -1022 | - 438 |
| | 500 | -1100 | - 128 |
| | 1000 | -1140 | + 13 |
| | 1500 | -1201 | 114 |
| | 2000 | -1314 | 210 |
| | 2400 | -1479 | 317 |
| | 2500 | -1549 | 363 |
| .8 fc → | 2800 | -1801 | 574 |
| | 3000 | -2009 | 896 |
| | 3200 | -2086 | 1525 |
| | 3400 | -1593 | 2241 |
| fc → | 3500 | -1074 | 2406 |
| | 3600 | - 706 | 2363 |
| 1.1 fc→ | 3800 | - 172 | 1970 |
| | 3900 | - 63 | 1766 |
| | 4000 | + 8 | 1586 |

| Gain | F | R | X |
|---|---|---|---|
| 7.5db | 200 | -1051 | - 451 |
| | 500 | -1133 | - 130 |
| | 1000 | -1171 | + 24 |
| | 1500 | -1220 | 112 |
| | 2000 | -1317 | 188 |
| | 2400 | -1512 | 265 |
| | 2500 | -1569 | 285 |
| .8 fc → | 2800 | -1903 | 458 |
| | 3000 | -2218 | 776 |
| | 3200 | -2434 | 1581 |
| | 3400 | -1766 | 2568 |
| fc → | 3500 | -1097 | 2711 |
| | 3600 | - 628 | 2570 |
| 1.1 fc → | 3800 | - 93 | 2118 |
| | 3900 | - 12 | 1900 |
| | 4000 | + 38 | 1741 |
| 8.0db | 200 | -1066 | - 482 |
| | 300 | -1138 | - 303 |
| | 500 | -1184 | - 154 |
| | 1000 | -1240 | - 14 |
| | 1500 | -1323 | + 75 |
| | 2000 | -1433 | 178 |
| | 2400 | -1609 | 264 |
| | 2500 | -1665 | 291 |
| .8 fc → | 2800 | -1915 | 436 |
| | 3000 | -2255 | 655 |
| | 3200 | -2600 | 1390 |
| fc → | 3500 | -1272 | 3130 |
| 1.1 fc → | 3800 | + 27 | 2212 |
| | 4000 | + 114 | 1696 |

# TABLE 1

## NEGATIVE IMPEDANCE OF NETWORK 6X
19 DNB)
24 CSM) H88

| Gain | F | R | X |
|---|---|---|---|
| 1.5db | 200 | - 346 | - 115 |
| | 500 | - 360 | - 12 |
| | 1000 | - 371 | + 23 |
| | 1500 | - 387 | 67 |
| | 2000 | - 413 | 104 |
| | 2400 | - 453 | 131 |
| | 2800 | - 491 | 183 |
| .8 fc → | 3000 | - 528 | 221 |
| | 3100 | - 550 | 250 |
| | 3500 | - 604 | 450 |
| | 3800 | - 534 | 690 |
| fc → | 3900 | - 448 | 754 |
| | 4000 | - 335 | 801 |
| | 4100 | - 252 | 815 |
| 1.1 fc → | 4300 | - 96 | 759 |
| | 4400 | - 54 | 713 |
| 2.0db | 200 | - 399 | - 134 |
| | 500 | - 422 | - 32 |
| | 1000 | - 441 | + 9 |
| | 1500 | - 473 | 48 |
| | 2000 | - 519 | 90 |
| | 2400 | - 573 | 141 |
| | 2800 | - 645 | 225 |
| .8 fc → | 3000 | - 688 | 291 |
| | 3100 | - 706 | 332 |
| | 3500 | - 717 | 617 |
| | 3800 | - 589 | 682 |
| fc → | 3900 | - 436 | 931 |
| | 4000 | - 317 | 933 |
| | 4100 | - 211 | 958 |
| 1.1 fc → | 4300 | - 66 | 863 |
| | 4400 | - | |
| 2.5db | 200 | - 496 | - 180 |
| | 500 | - 524 | - 41 |
| | 1000 | - 550 | + 15 |
| | 1500 | - 589 | 80 |
| | 2000 | - 653 | 152 |
| | 2400 | - 718 | 250 |
| | 2800 | - 773 | 431 |
| .8 fc → | 3000 | - 763 | 573 |
| | 3100 | - 739 | 654 |
| | 3500 | - 449 | 917 |
| | 3800 | - 190 | 899 |
| fc → | 3900 | - 130 | 870 |
| | 4000 | - 82 | 818 |
| | 4100 | - 44 | 774 |
| 1.1 fc → | 4300 | - 9 | 694 |
| | 4400 | - | |
| 3.0db | 200 | - 628 | - 228 |
| | 500 | - 666 | - 46 |
| | 1000 | - 680 | + 40 |
| | 1500 | - 695 | 104 |
| | 2000 | - 730 | 153 |
| | 2400 | - 788 | 198 |
| | 2800 | - 915 | 270 |
| .8 fc → | 3000 | -1004 | 339 |
| | 3100 | -1052 | 399 |
| | 3500 | -1144 | 988 |
| | 3800 | - 599 | 1438 |
| fc → | 3900 | - 387 | 1434 |
| | 4000 | - 192 | 1368 |
| | 4100 | - 85 | 1259 |
| 1.1 fc → | 4300 | + 30 | 1058 |
| | 4400 | - | |

| Gain | F | R | X |
|---|---|---|---|
| 3.5db | 200 | - 671 | - 261 |
| | 500 | - 718 | - 76 |
| | 1000 | - 750 | + 13 |
| | 1500 | - 798 | 86 |
| | 2000 | - 876 | 168 |
| | 2400 | - 953 | 268 |
| | 2800 | -1058 | 437 |
| .8 fc → | 3000 | -1092 | 537 |
| | 3100 | -1102 | 629 |
| | 3500 | -1015 | 1063 |
| | 3800 | - 678 | 1365 |
| fc → | 3900 | - 500 | 1386 |
| | 4000 | - 354 | 1376 |
| | 4100 | - 253 | 1340 |
| 1.1 fc → | 4300 | - 98 | 1202 |
| | 4400 | - | |
| 4.0db | 200 | - 818 | - 308 |
| | 500 | - 865 | - 71 |
| | 1000 | - 866 | + 43 |
| | 1500 | - 886 | 123 |
| | 2000 | - 938 | 192 |
| | 2400 | -1001 | 251 |
| | 2800 | -1119 | 340 |
| .8 fc → | 3000 | -1207 | 430 |
| | 3100 | -1276 | 471 |
| | 3500 | -1518 | 989 |
| | 3800 | -1161 | 1705 |
| fc → | 3900 | - 839 | 1822 |
| | 4000 | - 496 | 1805 |
| | 4100 | - 303 | 1697 |
| 1.1 fc → | 4300 | + 23 | 1469 |
| 4.5db | 200 | - 847 | - 329 |
| | 500 | - 899 | - 87 |
| | 1000 | - 921 | + 20 |
| | 1500 | - 968 | 95 |
| | 2000 | -1029 | 170 |
| | 2400 | -1108 | 240 |
| | 2800 | -1227 | 354 |
| .8 fc → | 3000 | -1304 | 439 |
| | 3100 | -1338 | 490 |
| | 3500 | -1504 | 915 |
| | 3800 | -1391 | 1485 |
| fc → | 3900 | -1247 | 1663 |
| | 4000 | - 936 | 1823 |
| | 4100 | - 756 | 1879 |
| 1.1 fc → | 4300 | - 307 | 1780 |
| | 4400 | - | |
| 5.0db | 200 | - 937 | - 390 |
| | 500 | - 995 | - 109 |
| | 1000 | -1019 | + 16 |
| | 1500 | -1057 | 96 |
| | 2000 | -1133 | 164 |
| | 2400 | -1230 | 226 |
| | 2800 | -1397 | 335 |
| .8 fc → | 3000 | -1519 | 433 |
| | 3100 | -1593 | 506 |
| | 3500 | -1850 | 1113 |
| | 3800 | -1536 | 1863 |
| fc → | 3900 | -1255 | 2070 |
| | 4000 | - 910 | 2138 |
| | 4100 | - 668 | 2115 |
| 1.1 fc → | 4300 | - 243 | 1917 |
| | 4400 | - 107 | 1753 |

TABLE 1

NEGATIVE IMPEDANCE OF NETWORK 6X (Cont'd)

19 DNB) H88
24 CSM)

| Gain | F | R | X |
|---|---|---|---|
| 5.5db | 200 | - 956 | - 414 |
| | 500 | -1027 | - 109 |
| | 1000 | -1043 | + 25 |
| | 1500 | -1071 | 99 |
| | 2000 | -1124 | 155 |
| | 2400 | -1217 | 184 |
| | 2800 | -1401 | 237 |
| .8 fc → | 3000 | -1548 | 295 |
| | 3100 | -1652 | 341 |
| | 3500 | -2027 | 677 |
| | 3800 | -1862 | 2073 |
| fc → | 3900 | -1522 | 2366 |
| | 4000 | -1021 | 2432 |
| | 4100 | - 644 | 2373 |
| 1.1 fc → | 4300 | - 195 | 2018 |
| | 4400 | - | |
| 6.0db | 200 | -1071 | - 447 |
| | 500 | -1150 | - 104 |
| | 1000 | -1153 | + 79 |
| | 1500 | -1172 | 182 |
| | 2000 | -1228 | 263 |
| | 2400 | -1325 | 332 |
| | 2800 | -1552 | 498 |
| .8 fc→ | 3000 | -1687 | 671 |
| | 3100 | -1755 | 801 |
| | 3500 | -1637 | 1727 |
| | 3800 | - 855 | 2064 |
| fc→ | 3900 | - 579 | 2015 |
| | 4000 | - 391 | 1909 |
| | 4100 | - 247 | 1754 |
| 1.1 fc→ | 4300 | - 75 | 1529 |
| | 4400 | - | |
| 6.5db | 200 | -1085 | - 494 |
| | 500 | -1178 | - 137 |
| | 1000 | -1209 | + 25 |
| | 1500 | -1253 | 131 |
| | 2000 | -1335 | 227 |
| | 2400 | -1441 | 323 |
| | 2800 | -1609 | 500 |
| .8 fc→ | 3000 | -1700 | 643 |
| | 3100 | -1746 | 738 |
| | 3500 | -1778 | 1396 |
| | 3800 | -1421 | 1929 |
| fc→ | 3900 | -1141 | 2090 |
| | 4000 | - 900 | 2094 |
| | 4100 | - 698 | 2111 |
| 1.1 fc→ | 4300 | - 334 | 1966 |
| | 4400 | - | |
| 7.0db | 200 | -1135 | - 509 |
| | 500 | -1229 | - 137 |
| | 1000 | -1257 | + 27 |
| | 1500 | -1296 | 147 |
| | 2000 | -1371 | 237 |
| | 2400 | -1477 | 314 |
| | 2800 | -1702 | 450 |
| .8 fc → | 3000 | -1852 | 567 |
| | 3100 | -1986 | 679 |
| | 3500 | -2254 | 1868 |
| | 3800 | -1015 | 2706 |
| fc → | 3900 | - 616 | 2549 |
| | 4000 | - 316 | 2361 |
| | 4100 | - 124 | 2158 |
| 1.1 fc → | 4300 | + 6 | 1807 |
| | 4400 | - 30 | 1539 |

| Gain | F | R | X |
|---|---|---|---|
| 7.5db | 200 | -1162 | - 541 |
| | 500 | -1263 | - 148 |
| | 1000 | -1284 | + 28 |
| | 1500 | -1313 | 134 |
| | 2000 | -1372 | 202 |
| | 2400 | -1482 | 242 |
| | 2800 | -1699 | 287 |
| .8 fc → | 3000 | -1902 | 346 |
| | 3100 | -2036 | 401 |
| | 3500 | -2834 | 1350 |
| | 3800 | -1871 | 3101 |
| fc → | 3900 | -1153 | 3100 |
| | 4000 | - 564 | 2903 |
| | 4100 | - 274 | 2633 |
| 1.1 fc → | 4300 | + 8 | 2067 |
| | 4400 | - | |
| 8.0db | 200 | -1238 | - 593 |
| | 500 | -1360 | - 160 |
| | 1000 | -1386 | + 37 |
| | 1500 | -1421 | 149 |
| | 2000 | -1496 | 220 |
| | 2400 | -1619 | 275 |
| | 2800 | -1893 | 375 |
| .8 fc → | 3000 | -2157 | 500 |
| | 3100 | -2317 | 607 |
| | 3500 | -2740 | 2065 |
| | 3800 | -1153 | 3115 |
| fc → | 3900 | - 652 | 2949 |
| | 4000 | - 246 | 2543 |
| | 4100 | - 76 | 2309 |
| 1.1 fc → | 4300 | + 109 | 1903 |
| | 4400 | + 107 | 1728 |

TABLE 1

NEGATIVE IMPEDANCE OF NETWORK 7X
19 DNB M88

| Gain | F | R | X |
|---|---|---|---|
| 1.5db | 200 | - 266 | - 87 |
| | 300 | - 275 | - 48 |
| | 500 | - 280 | - 12 |
| | 1000 | - 296 | + 22 |
| | 1500 | - 320 | 59 |
| | 2000 | - 360 | 96 |
| | 2400 | - 424 | 143 |
| .8 fc → | 2600 | - 488 | 205 |
| | 2800 | - 554 | 327 |
| | 3000 | - 491 | 573 |
| fc → | 3200 | - 232 | 694 |
| 1.1 fc → | 3500 | - 24 | 532 |
| 2.0db | 200 | - 349 | - 116 |
| | 300 | - 357 | - 68 |
| | 500 | - 366 | - 21 |
| | 1000 | - 379 | + 32 |
| | 1500 | - 399 | 69 |
| | 2000 | - 446 | 107 |
| | 2400 | - 524 | 137 |
| .8 fc → | 2600 | - 605 | 172 |
| | 2800 | - 727 | 273 |
| | 3000 | - 807 | 544 |
| fc → | 3200 | - 563 | 918 |
| 1.1 fc → | 3500 | - 91 | 815 |
| 2.5db | 200 | - 452 | - 146 |
| | 300 | - 466 | - 83 |
| | 500 | - 473 | - 12 |
| | 1000 | - 484 | + 62 |
| | 1500 | - 503 | 119 |
| | 2000 | - 560 | 178 |
| | 2400 | - 685 | 274 |
| .8 fc → | 2600 | - 782 | 428 |
| | 2800 | - 765 | 733 |
| | 3000 | - 462 | 971 |
| fc → | 3200 | - 132 | 899 |
| 1.1 fc → | 3500 | - 5 | 671 |
| 3.0db | 200 | - 514 | - 168 |
| | 300 | - 526 | - 93 |
| | 500 | - 534 | - 13 |
| | 1000 | - 548 | + 56 |
| | 1500 | - 574 | 117 |
| | 2000 | - 646 | 168 |
| | 2400 | - 790 | 274 |
| .8 fc→ | 2600 | - 934 | 437 |
| | 2800 | - 948 | 791 |
| | 3000 | - 627 | 1112 |
| fc→ | 3200 | - 221 | 1042 |
| 1.1 fc→ | 3500 | | |

| Gain | F | R | X |
|---|---|---|---|
| 3.5db | 200 | - 596 | - 193 |
| | 300 | - 622 | - 112 |
| | 500 | - 629 | - 28 |
| | 1000 | - 639 | + 70 |
| | 1500 | - 653 | 132 |
| | 2000 | - 702 | 183 |
| | 2400 | - 831 | 248 |
| .8 fc → | 2600 | - 979 | 341 |
| | 2800 | -1134 | 607 |
| | 3000 | - 949 | 1122 |
| fc → | 3200 | - 380 | 1253 |
| 1.1 fc → | 3500 | + 59 | 966 |
| 4.0db | 200 | - 650 | - 232 |
| | 300 | - 670 | - 137 |
| | 500 | - 683 | - 46 |
| | 1000 | - 702 | + 37 |
| | 1500 | - 737 | 96 |
| | 2000 | - 818 | 141 |
| | 2400 | - 982 | 189 |
| .8 fc → | 2600 | -1136 | 263 |
| | 2800 | -1382 | 494 |
| | 3000 | -1466 | 1092 |
| fc → | 3200 | -1001 | 1644 |
| 1.1 fc → | 3500 | - 152 | 1350 |
| 4.5db | 200 | - 729 | - 252 |
| | 300 | - 746 | - 141 |
| | 500 | - 758 | - 40 |
| | 1000 | - 774 | + 82 |
| | 1500 | - 820 | 174 |
| | 2000 | - 936 | 284 |
| | 2400 | -1141 | 567 |
| .8 fc → | 2600 | -1148 | 867 |
| | 2800 | - 942 | 1213 |
| | 3000 | - 553 | 1340 |
| fc → | 3200 | - 267 | 1209 |
| 1.1 fc → | 3500 | - 65 | 959 |
| 5.0db | 200 | - 810 | - 304 |
| | 300 | - 838 | - 177 |
| | 500 | - 848 | - 64 |
| | 1000 | - 859 | + 56 |
| | 1500 | - 887 | 135 |
| | 2000 | - 973 | 181 |
| | 2400 | -1156 | 249 |
| .8 fc → | 2600 | -1347 | 348 |
| | 2800 | -1582 | 575 |
| | 3000 | -1714 | 1149 |
| fc → | 3200 | -1306 | 1793 |
| 1.1 fc → | 3500 | - 338 | 1706 |

# TABLE 1

## NEGATIVE IMPEDANCE OF NETWORK TK (Cont'd)
## 19 DNB MSS

| Gain | F | R | X |
|---|---|---|---|
| 5.5db | 200 | - 790 | - 305 |
| | 300 | - 829 | - 183 |
| | 500 | - 849 | - 78 |
| | 1000 | - 876 | + 31 |
| | 1500 | - 927 | 95 |
| | 2000 | -1062 | 164 |
| | 2400 | -1260 | 281 |
| .8 fc→ | 2600 | -1405 | 445 |
| | 2800 | -1538 | 763 |
| | 3000 | -1442 | 1325 |
| fc→ | 3200 | - 927 | 1736 |
| | 3400 | - 380 | 1659 |
| 1.1 fc→ | 3500 | - 188 | 1509 |
| | 4000 | + 32 | 1000 |
| 6.0db | 200 | - 901 | - 350 |
| | 300 | - 934 | - 207 |
| | 500 | - 954 | - 83 |
| | 1000 | - 975 | + 58 |
| | 1500 | -1023 | 146 |
| | 2000 | -1144 | 230 |
| | 2400 | -1349 | 373 |
| .8 fc→ | 2600 | -1516 | 556 |
| | 2800 | -1625 | 862 |
| | 3000 | -1593 | 1418 |
| fc→ | 3200 | -1171 | 1820 |
| 1.1 fc→ | 3500 | - 390 | 1726 |
| 6.5db | 200 | - 898 | - 360 |
| | 300 | - 938 | - 216 |
| | 500 | - 967 | - 92 |
| | 1000 | -1005 | + 42 |
| | 1500 | -1054 | 137 |
| | 2000 | -1168 | 223 |
| | 2400 | -1395 | 328 |
| .8 fc → | 2600 | -1599 | 486 |
| | 2800 | -1805 | 919 |
| | 3000 | -1610 | 1757 |
| fc→ | 3200 | - 620 | 2085 |
| | 3400 | - 135 | 1680 |
| 1.1 fc→ | 3500 | | - |
| 7.0db | 200 | - 943 | - 381 |
| | 300 | - 986 | - 238 |
| | 500 | -1004 | - 114 |
| | 1000 | -1044 | + 22 |
| | 1500 | -1116 | 108 |
| | 2000 | -1251 | 185 |
| | 2400 | -1506 | 302 |
| .8 fc → | 2600 | -1734 | 444 |
| | 2800 | -2019 | 773 |
| | 3000 | -2145 | 1586 |
| fc → | 3200 | -1430 | 2400 |
| 1.1 fc → | 3500 | - 265 | 2008 |

| Gain | F | R | X |
|---|---|---|---|
| 7.5db | 200 | - 950 | - 400 |
| | 300 | -1006 | - 248 |
| | 500 | -1034 | - 112 |
| | 1000 | -1074 | + 31 |
| | 1500 | -1131 | 120 |
| | 2000 | -1264 | 198 |
| | 2400 | -1511 | 299 |
| .8 fc → | 2600 | -1724 | 433 |
| | 2800 | -2069 | 788 |
| | 3000 | -2080 | 1702 |
| fc → | 3200 | -1129 | 2419 |
| | 3400 | - 309 | 2130 |
| 1.1 fc → | 3500 | - 61 | 1865 |
| 8.0db | 200 | -1020 | - 425 |
| | 300 | -1070 | - 258 |
| | 500 | -1098 | - 107 |
| | 1000 | -1139 | + 75 |
| | 1500 | -1200 | 193 |
| | 2000 | -1350 | 331 |
| | 2400 | -1593 | 560 |
| .8 fc → | 2600 | -1764 | 832 |
| | 2800 | -1762 | 1400 |
| | 3000 | -1309 | 1987 |
| fc → | 3200 | - 944 | 2312 |
| | 3400 | - 164 | 1668 |
| 1.1 fc → | 3500 | - 62 | 1510 |

TABLE 1

NEGATIVE IMPEDANCE OF NETWORK 8X
19 CNB)
22 BSA) B135

| Gain | | F | R | X |
|---|---|---|---|---|
| 1.0db | | 200 | - 353 | - 130 |
| | | 500 | - 377 | - 26 |
| | | 1000 | - 389 | + 25 |
| | | 1500 | - 406 | 61 |
| | | 2000 | - 436 | 100 |
| | | 2400 | - 466 | 132 |
| | | 2800 | - 518 | 182 |
| | | 3000 | - 555 | 216 |
| | .8 fc → | 3200 | - 587 | 264 |
| | | 3500 | - 636 | 380 |
| | fc → | 4000 | - 568 | 748 |
| | 1.1 fc → | 4400 | - 220 | 866 |
| 1.5db | | 200 | - 502 | - 179 |
| | | 500 | - 527 | - 50 |
| | | 1000 | - 544 | + 16 |
| | | 1500 | - 576 | 60 |
| | | 2000 | - 628 | 110 |
| | | 2400 | - 681 | 161 |
| | | 2800 | - 746 | 241 |
| | | 3000 | - 791 | 299 |
| | .8 fc → | 3200 | - 830 | 373 |
| | | 3500 | - 876 | 542 |
| | fc → | 4000 | - 267 | 561 |
| | 1.1 fc → | 4400 | - 240 | 1127 |
| 2.0db | | 200 | - 643 | - 240 |
| | | 500 | - 683 | - 77 |
| | | 1000 | - 710 | + 7 |
| | | 1500 | - 757 | 49 |
| | | 2000 | - 832 | 105 |
| | | 2400 | - 924 | 175 |
| | | 2800 | -1006 | 260 |
| | | 3000 | -1101 | 390 |
| | .8 fc → | 3200 | -1159 | 516 |
| | | 3500 | -1187 | 822 |
| | fc → | 4000 | - 738 | 1391 |
| | 1.1 fc → | 4400 | - 230 | 1321 |
| 2.5db | | 200 | - 799 | - 316 |
| | | 500 | - 843 | - 87 |
| | | 1000 | - 863 | + 22 |
| | | 1500 | - 890 | 86 |
| | | 2000 | - 939 | 136 |
| | | 2400 | -1020 | 175 |
| | | 2800 | -1153 | 226 |
| | | 3000 | -1270 | 272 |
| | .8 fc → | 3200 | -1421 | 352 |
| | | 3500 | -1777 | 706 |
| | fc → | 4000 | - 836 | 2190 |
| | 1.1 fc → | 4400 | - 9 | 1591 |
| 3.0db | | 200 | - 926 | - 359 |
| | | 300 | - 972 | - 214 |
| | | 500 | - 995 | - 71 |
| | | 1000 | -1005 | + 54 |
| | | 1500 | -1039 | 168 |
| | | 2000 | -1097 | 257 |
| | | 2400 | -1211 | 370 |
| | | 2600 | -1289 | 456 |
| | | 2800 | -1383 | 596 |
| | | 3000 | -1476 | 792 |
| | .8 fc → | 3200 | -1477 | 1147 |
| | | 3500 | -1114 | 1681 |
| | fc → | 4000 | - 180 | 1565 |
| | 1.1 fc → | 4400 | - 10 | 1172 |
| 3.5db | | 200 | -1068 | - 472 |
| | | 500 | -1149 | - 145 |
| | | 1000 | -1181 | + 28 |
| | | 1500 | -1241 | 121 |
| | | 2000 | -1336 | 217 |
| | | 2400 | -1462 | 336 |
| | | 2800 | -1631 | 547 |
| | | 3000 | -1702 | 719 |
| | .8 fc → | 3200 | -1756 | 980 |
| | | 3500 | -1673 | 1474 |
| | fc → | 4000 | - 807 | 2025 |
| | 1.1 fc → | 4400 | - 202 | 1737 |
| 4.0db | | 200 | -1176 | - 540 |
| | | 300 | -1245 | - 334 |
| | | 500 | -1279 | - 156 |
| | | 1000 | -1310 | 0 |
| | | 1500 | -1364 | + 110 |
| | | 2000 | -1472 | 199 |
| | | 2400 | -1625 | 303 |
| | | 2800 | -1877 | 519 |
| | | 3000 | -2009 | 721 |
| | .8 fc → | 3200 | -2120 | 1045 |
| | | 3500 | -2049 | 1782 |
| | fc → | 4000 | - 775 | 2348 |
| | 1.1 fc → | 4400 | - 128 | 1922 |
| 4.5db | | 200 | -1233 | - 590 |
| | | 500 | -1355 | - 161 |
| | | 1000 | -1383 | + 32 |
| | | 1500 | -1424 | 155 |
| | | 2000 | -1506 | 241 |
| | | 2400 | -1640 | 325 |
| | | 2800 | -1896 | 493 |
| | | 3000 | -2065 | 661 |
| | .8 fc → | 3200 | -2243 | 955 |
| | | 3500 | -2201 | 1878 |
| | fc → | 4000 | - 555 | 2526 |
| | 1.1 fc → | 4400 | + 5 | 1858 |

NEGATIVE IMPEDANCE OF NETWORK 8X (Cont'd)
19 CNB)
22 BSA) B135

| Gain | F | R | X |
|---|---|---|---|
| 5.0db | 200 | -1371 | - 678 |
| | 300 | -1461 | - 424 |
| | 500 | -1511 | - 205 |
| | 1000 | -1550 | 0 |
| | 1500 | -1608 | + 130 |
| | 2000 | -1701 | 237 |
| | 2400 | -1848 | 351 |
| | 2600 | -1950 | 424 |
| | 2800 | -2066 | 520 |
| | 3000 | -2215 | 666 |
| .8 fc → | 3200 | -2383 | 89C |
| | 3500 | -2667 | 1565 |
| fc → | 4000 | -1648 | 3065 |
| 1.1 fc → | 4400 | - 281 | 2626 |
| 5.5db | 200 | -1364 | - 711 |
| | 500 | -1533 | - 220 |
| | 1000 | -1591 | + 27 |
| | 1500 | -1651 | 101 |
| | 2000 | -1771 | 198 |
| | 2400 | -1940 | 302 |
| | 2800 | -2203 | 460 |
| | 3000 | -2400 | 644 |
| .8 fc → | 3200 | -2593 | 914 |
| | 3500 | -2718 | 1778 |
| fc → | 4000 | -1136 | 3103 |
| 1.1 fc → | 4400 | - 89 | 2443 |
| 6.0db | 200 | -1542 | - 809 |
| | 300 | -1664 | - 497 |
| | 500 | -1724 | - 223 |
| | 1000 | -1767 | - 12 |
| | 1500 | -1838 | + 118 |
| | 2000 | -1954 | 229 |
| | 2400 | -2113 | 331 |
| | 2600 | -2231 | 394 |
| | 2800 | -2384 | 473 |
| | 3000 | -2597 | 597 |
| .8 fc → | 3200 | -2886 | 812 |
| | 3500 | -3434 | 1645 |
| fc → | 4000 | -1830 | 4169 |
| 1.1 fc → | 4400 | - 139 | 3017 |
| 6.5db | 200 | -1538 | - 875 |
| | 500 | -1760 | - 277 |
| | 1000 | -1815 | + 10 |
| | 1500 | -1854 | 68 |
| | 2000 | -2030 | 256 |
| | 2400 | -2201 | 398 |
| | 2800 | -2508 | 653 |
| | 3000 | -2674 | 870 |
| .8 fc → | 3200 | -2843 | 1236 |
| | 3500 | -2808 | 2194 |
| fc → | 4000 | -1121 | 3215 |
| 1.1 fc → | 4400 | - 112 | 2647 |

| Gain | F | R | X |
|---|---|---|---|
| 7.0db | 200 | -1674 | - 953 |
| | 500 | -1894 | - 317 |
| | 1000 | -1962 | - 36 |
| | 1500 | -2043 | + 128 |
| | 2000 | -2154 | 274 |
| | 2400 | -2301 | 411 |
| | 2800 | -2508 | 578 |
| | 3000 | -2691 | 694 |
| .8 fc → | 3200 | -2931 | 883 |
| | 3500 | -3383 | 1400 |
| fc → | 4000 | -2787 | 4230 |
| 1.1 fc → | 4400 | - 323 | 3677 |

TABLE 1

NEGATIVE IMPEDANCE OF NETWORK 9X
19DNB-B135

| Gain | F | R | X |
|---|---|---|---|
| 1.0db | 200 | - 409 | - 13 |
| | 500 | - 429 | - 24 |
| | 1000 | - 432 | + 19 |
| | 1500 | - 448 | 62 |
| | 2000 | - 466 | 94 |
| | 2400 | - 492 | 120 |
| | 2800 | - 531 | 153 |
| | 3000 | - 559 | 170 |
| .8 fc→ | 3600 | - 695 | 274 |
| | 4000 | - 806 | 480 |
| fc→ | 4500 | - 644 | 999 |
| | 4600 | - | |
| 1.1 fc→ | 4900 | - 164 | 996 |
| | 5000 | - 90 | 942 |
| | 5600 | + 36 | 699 |
| 1.5db | 200 | - 590 | - 202 |
| | 500 | - 621 | - 24 |
| | 1000 | - 626 | + 58 |
| | 1500 | - 629 | 124 |
| | 2000 | - 654 | 172 |
| | 2400 | - 697 | 221 |
| | 2800 | - 781 | 295 |
| | 3000 | - 855 | 354 |
| .8 fc→ | 3600 | - 915 | 931 |
| | 4000 | - 346 | 1191 |
| fc→ | 4500 | + 9 | 915 |
| | 4600 | - 11 | 834 |
| 1.1 fc→ | 4900 | + 19 | 739 |
| | 5000 | + 38 | 701 |
| 2.0db | 200 | - 724 | - 276 |
| | 500 | - 769 | - 66 |
| | 1000 | - 792 | + 29 |
| | 1500 | - 823 | 107 |
| | 2000 | - 871 | 178 |
| | 2400 | - 936 | 247 |
| | 2800 | -1029 | 342 |
| | 3000 | -1109 | 423 |
| .8 fc→ | 3600 | -1265 | 1074 |
| | 4000 | - 519 | 1639 |
| fc→ | 4500 | + 61 | 1154 |
| | 4600 | + 40 | 1054 |
| 1.1 fc→ | 4900 | + 78 | 916 |
| | 5000 | + 76 | 875 |
| 2.5db | 200 | - 872 | - 364 |
| | 500 | - 935 | - 113 |
| | 1000 | - 970 | + 8 |
| | 1500 | -1004 | 69 |
| | 2000 | -1073 | 134 |
| | 2400 | -1140 | 196 |
| | 2800 | -1241 | 285 |
| | 3000 | -1305 | 346 |
| .8 fc→ | 3600 | -1547 | 672 |
| | 4000 | -1598 | 1236 |
| fc→ | 4500 | - 815 | 2052 |
| | 4600 | - 573 | 2053 |
| 1.1 fc→ | 4900 | - 53 | 1753 |
| | 5000 | + 49 | 1601 |

| Gain | F | R | X |
|---|---|---|---|
| 3.0db | 200 | -1044 | - 455 |
| | 500 | -1127 | - 124 |
| | 1000 | -1149 | + 26 |
| | 1500 | -1171 | 113 |
| | 2000 | -1227 | 176 |
| | 2400 | -1319 | 235 |
| | 2800 | -1465 | 309 |
| | 3000 | -1570 | 387 |
| .8 fc→ | 3600 | -1952 | 1022 |
| | 4000 | -1585 | 1964 |
| fc→ | 4500 | - 426 | 2081 |
| | 4600 | - 271 | 1959 |
| 1.1 fc→ | 4900 | - 35 | 1646 |
| | 5000 | + 35 | 1545 |
| 3.5db | 200 | -1161 | - 522 |
| | 500 | -1270 | - 125 |
| | 1000 | -1276 | + 73 |
| | 1500 | -1284 | 181 |
| | 2000 | -1313 | 260 |
| | 2400 | -1404 | 321 |
| | 2800 | -1555 | 405 |
| | 3000 | -1691 | 484 |
| .8 fc→ | 3600 | -2064 | 1293 |
| | 4000 | -1291 | 2287 |
| fc→ | 4500 | - 221 | 2022 |
| | 4600 | - 78 | 1864 |
| 1.1 fc→ | 4900 | + 40 | 1537 |
| | 5000 | + 87 | 1463 |
| 4.0db | 200 | -1332 | - 642 |
| | 300 | -1423 | - 382 |
| | 500 | -1451 | - 138 |
| | 1000 | -1446 | + 111 |
| | 1500 | -1441 | 250 |
| | 2000 | -1471 | 334 |
| | 2400 | -1553 | 393 |
| | 2800 | -1782 | 500 |
| | 3000 | -1962 | 636 |
| | 3500 | -2349 | 1782 |
| .8 fc→ | 3600 | -2186 | 2171 |
| | 4000 | - 559 | 2593 |
| | 4600 | + 60 | 1630 |
| 1.1 fc→ | 4900 | + 80 | 1413 |
| | 5000 | + 96 | 1315 |
| 4.5db | 200 | -1359 | - 687 |
| | 300 | -1448 | - 431 |
| | 500 | -1501 | - 207 |
| | 1000 | -1530 | 0 |
| | 1500 | -1576 | + 118 |
| | 2000 | -1661 | 212 |
| | 2400 | -1778 | 295 |
| | 2800 | -1970 | 425 |
| | 3000 | -2102 | 538 |
| | 3500 | -2563 | 1040 |
| .8 fc→ | 3600 | -2552 | 1314 |
| | 4000 | -2072 | 2524 |
| | 4600 | - 247 | 2496 |
| 1.1 fc→ | 4900 | + 51 | 2050 |
| | 5000 | + 127 | 1912 |

NEGATIVE IMPEDANCE OF NETWORK 9X (Cont'd)
19DNB-B135

| Gain | F | R | X |
|---|---|---|---|
| 5.0db | 200 | -1430 | - 785 |
| | 300 | -1552 | - 498 |
| | 500 | -1619 | - 257 |
| | 1000 | -1684 | + 50 |
| | 1500 | -1772 | 70 |
| | 2000 | -1902 | 201 |
| | 2400 | -2066 | 334 |
| | 2800 | -2244 | 570 |
| | 3000 | -2344 | 717 |
| .8 fc → | 3600 | -2493 | 1611 |
| | 4000 | -1985 | 2473 |
| | 4600 | - 527 | 2677 |
| 1.1 fc → | 4900 | - 101 | 2293 |
| | 5000 | - | |
| 5.5db | 200 | -1504 | - 836 |
| | 500 | -1744 | - 298 |
| | 1000 | -1804 | - 73 |
| | 1500 | -1878 | + 22 |
| | 2000 | -2002 | 120 |
| | 2400 | -2146 | 207 |
| | 2500 | -2197 | 237 |
| | 2800 | -2355 | 360 |
| | 3000 | -2517 | 450 |
| .8 fc → | 3600 | -2979 | 1169 |
| | 4000 | - | |
| | 4600 | -1091 | 3440 |
| 1.1 fc → | 4900 | - 282 | 3001 |
| | 5000 | - 43 | 2850 |
| 6.0 db | 200 | -1597 | - 935 |
| | 500 | -1876 | - 295 |
| | 1000 | -1921 | + 40 |
| | 1500 | -1970 | 103 |
| | 2000 | -2049 | 215 |
| | 2400 | -2164 | 304 |
| | 2800 | -2333 | 404 |
| | 3000 | -2455 | 482 |
| .8 fc → | 3600 | -3125 | 962 |
| | 4000 | -3395 | 2426 |
| | 4600 | - 288 | 3712 |
| 1.1 fc → | 4900 | + 277 | 2778 |
| | 5000 | + 313 | 2490 |

TABLE 1

NEGATIVE IMPEDANCE OF NETWORK 10X
19CNB)
22BSA) D135

| Gain | F | R | X |
|---|---|---|---|
| 1.0db | 200 | - 286 | - 97 |
| | 300 | - 296 | - 58 |
| | 500 | - 303 | - 17 |
| | 1000 | - 320 | + 16 |
| | 1500 | - 346 | 56 |
| | 2000 | - 385 | 96 |
| | 2500 | - 454 | 163 |
| .8 fc → | 2600 | - 478 | 186 |
| | 2800 | - 519 | 244 |
| | 3000 | - 561 | 345 |
| fc → | 3200 | - 557 | 502 |
| 1.1 fc → | 3600 | - 196 | 733 |
| | 4000 | - 7 | 545 |
| 1.5db | 200 | - 406 | - 140 |
| | 300 | - 418 | - 86 |
| | 500 | - 429 | - 24 |
| | 1000 | - 450 | + 9 |
| | 1500 | - 485 | 60 |
| | 2000 | - 546 | 111 |
| | 2500 | - 644 | 179 |
| .8 fc → | 2600 | - 681 | 219 |
| | 2800 | - 758 | 290 |
| | 3000 | - 853 | 448 |
| fc → | 3200 | - 861 | 739 |
| 1.1 fc → | 3600 | - 209 | 1007 |
| | 4000 | + 7 | 707 |
| 2.0db | 200 | - 545 | - 184 |
| | 300 | - 567 | - 108 |
| | 500 | - 579 | - 28 |
| | 1000 | - 598 | + 41 |
| | 1500 | - 642 | 102 |
| | 2000 | - 733 | 174 |
| | 2500 | - 923 | 390 |
| .8 fc → | 2600 | - 947 | 485 |
| | 2800 | - 922 | 776 |
| | 3000 | - 671 | 1068 |
| fc → | 3200 | - 313 | 1116 |
| 1.1 fc → | 3600 | - 11 | 805 |
| | 4000 | + 39 | 653 |
| 2.5db | 200 | - 688 | - 251 |
| | 300 | - 713 | - 153 |
| | 500 | - 728 | - 65 |
| | 1000 | - 757 | + 30 |
| | 1500 | - 808 | 102 |
| | 2000 | - 900 | 188 |
| | 2500 | -1063 | 342 |
| .8 fc → | 2600 | -1111 | 403 |
| | 2800 | -1195 | 574 |
| | 3000 | -1222 | 856 |
| fc → | 3200 | -1039 | 1247 |
| 1.1 fc → | 3600 | - 237 | 1393 |
| | 4000 | + 18 | 967 |

| Gain | F | R | X |
|---|---|---|---|
| 3.0db | 200 | - 734 | - 285 |
| | 300 | - 759 | - 178 |
| | 500 | - 780 | - 90 |
| | 1000 | - 830 | + 6 |
| | 1500 | - 917 | 83 |
| | 2000 | -1063 | 199 |
| | 2500 | -1289 | 475 |
| .8 fc → | 2600 | -1332 | 586 |
| | 2800 | -1389 | 903 |
| | 3000 | -1254 | 1327 |
| fc → | 3200 | - 768 | 1622 |
| 1.1 fc → | 3600 | - 73 | 1285 |
| | 4000 | + 30 | 949 |
| 3.5db | 200 | - 848 | - 340 |
| | 300 | - 883 | - 206 |
| | 500 | - 905 | - 95 |
| | 1000 | - 954 | + 46 |
| | 1500 | -1029 | 153 |
| | 2000 | -1163 | 283 |
| | 2500 | -1500 | 621 |
| .8 fc → | 2600 | -1585 | 802 |
| | 2800 | -1555 | 1389 |
| | 3000 | - 863 | 1879 |
| fc → | 3200 | - 217 | 1668 |
| 1.1 fc → | 3600 | - 10 | 1097 |
| | 4000 | - 2 | 877 |
| 4.0db | 200 | - 970 | - 398 |
| | 300 | -1016 | - 237 |
| | 500 | -1039 | - 101 |
| | 1000 | -1077 | + 43 |
| | 1500 | -1145 | 147 |
| | 2000 | -1263 | 244 |
| | 2500 | -1565 | 541 |
| .8 fc → | 2600 | -1744 | 570 |
| | 2800 | -1968 | 961 |
| | 3000 | -1919 | 1774 |
| fc → | 3200 | -1127 | 2358 |
| | 3300 | - 593 | 2229 |
| 1.1 fc → | 3600 | - 113 | 1678 |
| | 4000 | - 11 | 1263 |
| 4.5db | 200 | -1047 | - 453 |
| | 300 | -1105 | - 287 |
| | 500 | -1139 | - 139 |
| | 1000 | -1195 | + 16 |
| | 1500 | -1284 | 126 |
| | 2000 | -1432 | 270 |
| | 2500 | -1705 | 535 |
| .8 fc → | 2600 | -1772 | 634 |
| | 2800 | -1903 | 945 |
| | 3000 | -1894 | 1465 |
| fc → | 3200 | -1413 | 2090 |
| 1.1 fc → | 3600 | - 252 | 1910 |
| | 4000 | + 38 | 1350 |

TABLE 1

NEGATIVE IMPEDANCE OF NETWORK 10X (Cont'd)
19CNB)
22BSA)D135

| Gain | F | R | X |
|---|---|---|---|
| 5.0db | 200 | -1261 | - 335 |
| | 300 | -1207 | - 314 |
| | 500 | -1238 | - 152 |
| | 1000 | -1291 | + 15 |
| | 1500 | -1383 | 123 |
| | 2000 | -1576 | 236 |
| | 2500 | -1999 | 554 |
| .8 fc → | 2600 | -2127 | 715 |
| | 2800 | -2346 | 1193 |
| | 3000 | -2197 | 1979 |
| fc → | 3200 | -1487 | 2536 |
| | 3300 | -1032 | 2558 |
| 1.1 fc → | 3600 | - 311 | 2135 |
| | 4000 | - 64 | 1584 |
| 5.5db | 200 | -1188 | - 566 |
| | 300 | -1275 | - 358 |
| | 500 | -1320 | - 189 |
| | 1000 | -1336 | + 25 |
| | 1500 | -1510 | 108 |
| | 2000 | -1659 | 263 |
| | 2500 | -2043 | 567 |
| .8 fc → | 2600 | -2112 | 671 |
| | 2800 | -2302 | 1038 |
| | 3000 | -2363 | 1683 |
| fc → | 3200 | -1845 | 2550 |
| 1.1 fc → | 3600 | - 226 | 2304 |
| | 4000 | + 90 | 1552 |
| 6.0db | 200 | -1271 | - 597 |
| | 300 | -1333 | - 375 |
| | 500 | -1375 | - 199 |
| | 1000 | -1457 | - 17 |
| | 1500 | -1584 | + 110 |
| | 2000 | -1785 | 257 |
| | 2500 | -2176 | 569 |
| .8 fc → | 2600 | -2306 | 710 |
| | 2800 | -2548 | 1090 |
| | 3000 | -2695 | 1784 |
| fc → | 3200 | -2225 | 2701 |
| | 3300 | -1741 | 2958 |
| 1.1 fc → | 3600 | - 415 | 2605 |
| | 4000 | - 116 | 1872 |
| 6.5db | 200 | -1409 | - 692 |
| | 300 | -1481 | - 391 |
| | 500 | -1529 | - 153 |
| | 1000 | -1563 | + 124 |
| | 1500 | -1644 | 322 |
| | 2000 | -1821 | 571 |
| | 2500 | -2094 | 1252 |
| .8 fc → | 2600 | -2092 | 1517 |
| | 2800 | -1739 | 2186 |
| | 3000 | - 978 | 2404 |
| fc → | 3200 | - 385 | 2169 |
| 1.1 fc → | 3600 | - 7 | 1509 |
| | 4000 | + 10 | 1217 |

| Gain | F | R | X |
|---|---|---|---|
| 7.0db | 200 | -1427 | - 707 |
| | 300 | -1373 | - 569 |
| | 500 | -1567 | - 211 |
| | 1000 | -1629 | + 19 |
| | 1500 | -1743 | 162 |
| | 2000 | -1964 | 311 |
| | 2500 | -2508 | 730 |
| .8 fc → | 2600 | -2673 | 934 |
| | 2800 | -2894 | 1596 |
| | 3000 | -2635 | 2665 |
| fc → | 3200 | -1679 | 3220 |
| | 3300 | -1160 | 3187 |
| 1.1 fc → | 3600 | - 258 | 2469 |
| | 4000 | - 115 | 1874 |
| 7.5db | 200 | -1467 | - 762 |
| | 300 | -1585 | - 461 |
| | 500 | -1641 | - 199 |
| | 1000 | -1690 | + 70 |
| | 1500 | -1782 | 238 |
| | 2000 | -1983 | 411 |
| | 2500 | -2489 | 910 |
| .8 fc → | 2600 | -2620 | 1190 |
| | 2800 | -2621 | 1973 |
| | 3000 | -1934 | 2791 |
| fc → | 3200 | - 865 | 2875 |
| 1.1 fc → | 3600 | - 36 | 2000 |
| | 4000 | + 29 | 1462 |
| 8.0db | 200 | -1517 | - 773 |
| | 300 | -1637 | - 490 |
| | 500 | -1683 | - 230 |
| | 1000 | -1721 | + 20 |
| | 1500 | -1805 | 139 |
| | 2000 | -2018 | 207 |
| | 2500 | -2683 | 406 |
| .8 fc → | 2600 | -2942 | 549 |
| | 2800 | -3504 | 1180 |
| | 3000 | -3621 | 2694 |
| fc → | 3200 | -2473 | 3837 |
| | 3300 | -1759 | 3914 |
| 1.1 fc → | 3600 | - 323 | 2973 |
| | 4000 | - 109 | 2179 |

TABLE 1

NEGATIVE IMPEDANCE OF NETWORK 11X
19DNB-D135

| Gain | F | R | X |
|---|---|---|---|
| 1.0db | 200 | - 317 | - 108 |
| | 300 | - 325 | - 67 |
| | 500 | - 332 | - 25 |
| | 1000 | - 348 | + 11 |
| | 1500 | - 372 | 48 |
| | 2000 | - 410 | 83 |
| | 2500 | - 472 | 130 |
| | 2800 | - 525 | 178 |
| | 2900 | - 548 | 207 |
| .8 fc→ | 3000 | - 566 | 232 |
| | 3200 | - 622 | 302 |
| | 3500 | - 682 | 512 |
| fc→ | 3600 | - 657 | 618 |
| 1.1 fc→ | 4000 | - 252 | 849 |
| | 4600 | + 20 | 604 |
| 1.5db | 200 | - 499 | - 170 |
| | 300 | - 515 | - 99 |
| | 500 | - 522 | - 28 |
| | 1000 | - 534 | + 45 |
| | 1500 | - 557 | 100 |
| | 2000 | - 606 | 153 |
| | 2500 | - 719 | 252 |
| | 2800 | - 822 | 400 |
| | 2900 | - 850 | 477 |
| .8 fc→ | 3000 | - 856 | 576 |
| | 3200 | - 792 | 834 |
| | 3500 | - 400 | 1039 |
| fc→ | 3600 | - 263 | 1034 |
| 1.1 fc→ | 4000 | - 6 | 791 |
| | 4600 | + 39 | 600 |
| 2.0db | 200 | - 640 | - 234 |
| | 300 | - 660 | - 139 |
| | 500 | - 675 | - 56 |
| | 1000 | - 700 | + 28 |
| | 1500 | - 735 | 94 |
| | 2000 | - 799 | 161 |
| | 2500 | - 927 | 255 |
| | 2800 | -1056 | 376 |
| | 2900 | -1113 | 451 |
| .8 fc→ | 3000 | -1184 | 548 |
| | 3200 | -1262 | 871 |
| | 3500 | - 792 | 1517 |
| fc→ | 3600 | - 501 | 1535 |
| 1.1 fc→ | 4000 | + 2 | 1093 |
| | 4600 | + 16 | 760 |
| 2.5db | 200 | - 735 | - 275 |
| | 300 | - 762 | - 166 |
| | 500 | - 779 | - 63 |
| | 1000 | - 799 | + 43 |
| | 1500 | - 839 | 115 |
| | 2000 | - 922 | 193 |
| | 2500 | -1097 | 348 |
| | 2800 | -1236 | 592 |
| | 2900 | -1243 | 705 |
| .8 fc→ | 3000 | -1255 | 856 |
| | 3200 | -1126 | 1177 |
| | 3500 | - | |
| fc→ | 3600 | - 598 | 1436 |
| 1.1 fc→ | 4000 | + 5 | 1045 |
| | 4600 | + 15 | 818 |

| Gain | F | R | X |
|---|---|---|---|
| 3.0db | 200 | - 882 | - 352 |
| | 300 | - 923 | - 212 |
| | 500 | - 939 | - 81 |
| | 1000 | - 961 | + 24 |
| | 1500 | - 992 | 102 |
| | 2000 | -1064 | 163 |
| | 2500 | -1227 | 237 |
| | 2800 | -1429 | 334 |
| | 2900 | -1521 | 407 |
| .8 fc→ | 3000 | -1629 | 505 |
| | 3200 | -1842 | 880 |
| | 3500 | -1523 | 1841 |
| fc→ | 3600 | -1187 | 2057 |
| 1.1 fc→ | 4000 | - 97 | 1719 |
| | 4600 | + 94 | 1130 |
| 3.5db | 200 | - 975 | - 407 |
| | 300 | -1020 | - 243 |
| | 500 | -1036 | - 96 |
| | 1000 | -1060 | + 53 |
| | 1500 | -1091 | 139 |
| | 2000 | -1183 | 206 |
| | 2500 | -1413 | 331 |
| | 2800 | -1666 | 546 |
| | 2900 | -1756 | 688 |
| .8 fc→ | 3000 | -1817 | 900 |
| | 3200 | -1794 | 1466 |
| | 3500 | - 999 | 2071 |
| fc→ | 3600 | - 695 | 2026 |
| 1.1 fc→ | 4000 | - 30 | 1539 |
| | 4600 | + 49 | 1044 |
| 4.0db | 200 | -1065 | - 461 |
| | 300 | -1117 | - 293 |
| | 500 | -1145 | - 148 |
| | 1000 | -1192 | + 11 |
| | 1500 | -1275 | 89 |
| | 2000 | -1399 | 194 |
| | 2500 | -1613 | 376 |
| | 2800 | -1791 | 569 |
| | 2900 | -1855 | 672 |
| .8 fc→ | 3000 | -1938 | 798 |
| | 3200 | -2062 | 1128 |
| | 3500 | -1882 | 1973 |
| fc→ | 3600 | -1630 | 2251 |
| 1.1 fc→ | 4000 | - 415 | 2236 |
| | 4600 | - 21 | 1511 |
| 4.5db | 200 | -1166 | - 534 |
| | 300 | -1241 | - 343 |
| | 500 | -1273 | - 165 |
| | 1000 | -1315 | + 13 |
| | 1500 | -1395 | 108 |
| | 2000 | -1523 | 227 |
| | 2500 | -1746 | 407 |
| | 2800 | -1936 | 586 |
| | 2900 | -2019 | 695 |
| .8 fc→ | 3000 | -2144 | 822 |
| | 3200 | -2308 | 1267 |
| | 3500 | -2019 | 2329 |
| fc→ | 3600 | -1551 | 2596 |
| 1.1 fc→ | 4000 | - 264 | 2216 |
| | 4600 | + 49 | 1408 |

TABLE 1

NEGATIVE IMPEDANCE OF NETWORK 11X (Cont'd)
19DNB-D135

| Gain | F | R | X |
|---|---|---|---|
| 5.0db | 200 | -1276 | - 584 |
| | 300 | -1347 | - 365 |
| | 500 | -1375 | - 173 |
| | 1000 | -1407 | + 31 |
| | 1500 | -1459 | 136 |
| | 2000 | -1561 | 209 |
| | 2500 | -1816 | 319 |
| | 2800 | -2104 | 462 |
| | 2900 | -2246 | 566 |
| .8 fc→ | 3000 | -2391 | 705 |
| | 3200 | -2700 | 1203 |
| | 3500 | -2508 | 2655 |
| fc→ | 3600 | -2084 | 2925 |
| 1.1 fc→ | 4000 | - 415 | 2605 |
| | 4600 | - 76 | 1800 |
| 5.5db | 200 | -1308 | - 653 |
| | 300 | -1396 | - 419 |
| | 500 | -1459 | - 225 |
| | 1000 | -1537 | - 50 |
| | 1500 | -1651 | + 73 |
| | 2000 | -1831 | 224 |
| | 2500 | -2115 | 477 |
| | 2800 | -2293 | 760 |
| | 2900 | -2389 | 916 |
| .8 fc→ | 3000 | -2471 | 1076 |
| | 3200 | -2522 | 1559 |
| | 3500 | -2106 | 2577 |
| fc→ | 3600 | -1708 | 2831 |
| 1.1 fc→ | 4000 | - 211 | 2489 |
| | 4600 | + 80 | 1598 |
| 6.0db | 200 | -1402 | - 712 |
| | 300 | -1502 | - 448 |
| | 500 | -1553 | - 234 |
| | 1000 | -1606 | - 21 |
| | 1500 | -1694 | + 100 |
| | 2000 | -1824 | 204 |
| | 2500 | -2079 | 347 |
| | 2800 | -2345 | 486 |
| | 2900 | -2473 | 567 |
| .8 fc→ | 3000 | -2600 | 668 |
| | 3200 | -3052 | 995 |
| | 3500 | -3348 | 2397 |
| fc→ | 3600 | -3172 | 2969 |
| 1.1 fc→ | 4000 | - 811 | 3506 |
| | 4600 | - 153 | 2238 |
| 6.5db | 200 | -1447 | - 760 |
| | 300 | -1569 | - 470 |
| | 500 | -1638 | - 217 |
| | 1000 | -1704 | + 38 |
| | 1500 | -1807 | 214 |
| | 2000 | -1983 | 411 |
| | 2500 | -2328 | 845 |
| | 2800 | -2504 | 1445 |
| | 2900 | -2506 | 1749 |
| .8 fc→ | 3000 | -2338 | 2128 |
| | 3200 | -1750 | 2681 |
| | 3500 | - 503 | 2587 |
| fc→ | 3600 | - 277 | 2345 |
| 1.1 fc→ | 4000 | + 64 | 1742 |
| | 4600 | + 72 | 1339 |

| Gain | F | R | X |
|---|---|---|---|
| 7.0db | 200 | -1540 | - 810 |
| | 300 | -1662 | - 520 |
| | 500 | -1726 | - 265 |
| | 1000 | -1793 | - 15 |
| | 1500 | -1912 | + 151 |
| | 2000 | -2114 | 316 |
| | 2500 | -2465 | 633 |
| | 2800 | -2805 | 1083 |
| | 2900 | -2929 | 1289 |
| .8 fc→ | 3000 | -2997 | 1624 |
| | 3200 | -2918 | 2370 |
| | 3500 | -1949 | 3403 |
| fc→ | 3600 | -1431 | 3395 |
| 1.1 fc→ | 4000 | - 313 | 2687 |
| | 4600 | - 81 | 1932 |
| 7.5db | 200 | -1595 | - 875 |
| | 300 | -1723 | - 560 |
| | 500 | -1807 | - 273 |
| | 1000 | -1872 | + 9 |
| | 1500 | -1959 | 169 |
| | 2000 | -2144 | 325 |
| | 2500 | -2505 | 601 |
| | 2800 | -2826 | 1005 |
| | 2900 | -3011 | 1257 |
| .8 fc→ | 3000 | -3086 | 1551 |
| | 3200 | -2910 | 2470 |
| | 3500 | -1520 | 3451 |
| fc→ | 3600 | - 989 | 3344 |
| 1.1 fc→ | 4000 | + 7 | 2360 |
| | 4600 | + 88 | 1627 |
| 8.0db | 200 | -1701 | - 923 |
| | 300 | -1844 | - 583 |
| | 500 | -1906 | - 274 |
| | 1000 | -1949 | + 32 |
| | 1500 | -2000 | 196 |
| | 2000 | -2133 | 304 |
| | 2500 | -2488 | 451 |
| | 2800 | -2936 | 701 |
| | 2900 | -3121 | 851 |
| .8 fc→ | 3000 | -3365 | 1102 |
| | 3200 | -3730 | 1972 |
| | 3500 | -2897 | 3845 |
| fc→ | 3600 | -2171 | 4090 |
| 1.1 fc→ | 4000 | - 445 | 3276 |
| | 4600 | - 105 | 2299 |

TABLE 1

NEGATIVE IMPEDANCE OF NETWORK 12X
19CNB)
22BSA) H135

| Gain | F | R | X |
|---|---|---|---|
| 1.5db | 200 | - 369 | - 114 |
| | 300 | - 379 | - 58 |
| | 500 | - 390 | - 5 |
| | 1000 | - 398 | + 51 |
| | 1500 | - 458 | 115 |
| | 2000 | - 569 | 254 |
| .8 fc→ | 2200 | - 593 | 407 |
| | 2400 | - 497 | 596 |
| | 2600 | - 280 | 679 |
| fc→ | 2800 | - 105 | 604 |
| | 3000 | - 36 | 519 |
| 1.1 fc→ | 3100 | - 23 | 494 |
| | 3200 | - 21 | 456 |
| 2.0db | 200 | - 461 | - 155 |
| | 300 | - 477 | - 90 |
| | 500 | - 490 | - 26 |
| | 1000 | - 526 | + 55 |
| | 1500 | - 585 | 138 |
| | 2000 | - 710 | 301 |
| .8 fc→ | 2200 | - 774 | 459 |
| | 2400 | - 710 | 735 |
| | 2600 | - 385 | 912 |
| fc→ | 2800 | - 108 | 803 |
| | 3000 | - 5 | 671 |
| 1.1 fc→ | 3100 | + 3 | 622 |
| | 3200 | - 30 | 560 |
| 2.5db | 300 | - 579 | - 121 |
| | 500 | - 594 | - 56 |
| | 1000 | - 641 | + 25 |
| | 1500 | - 724 | 112 |
| | 2000 | - 868 | 269 |
| .8 fc→ | 2200 | - 940 | 400 |
| | 2400 | - 984 | 605 |
| | 2600 | - 862 | 913 |
| fc→ | 2800 | - 577 | 1133 |
| | 3000 | - 226 | 1057 |
| 1.1 fc→ | 3100 | - 136 | 981 |
| | 3200 | - 82 | 889 |
| 3.0db | 300 | - 717 | - 139 |
| | 500 | - 725 | - 44 |
| | 1000 | - 747 | + 73 |
| | 1500 | - 812 | 146 |
| | 2000 | -1011 | 277 |
| .8 fc→ | 2200 | -1143 | 432 |
| | 2400 | -1237 | 785 |
| | 2600 | - 980 | 1256 |
| fc→ | 2800 | - 453 | 1340 |
| | 3000 | - 169 | 1137 |
| 1.1 fc→ | 3100 | - 108 | 1011 |
| | 3200 | - 82 | 938 |

| Gain | F | R | X |
|---|---|---|---|
| 3.5db | 300 | - 823 | - 165 |
| | 500 | - 827 | - 50 |
| | 1000 | - 841 | + 85 |
| | 1500 | - 882 | 149 |
| | 2000 | -1064 | 213 |
| .8 fc→ | 2200 | -1239 | 301 |
| | 2400 | -1441 | 558 |
| | 2600 | -1456 | 1171 |
| fc→ | 2800 | - 868 | 1644 |
| | 3000 | - 314 | 1532 |
| 1.1 fc→ | 3100 | - 161 | 1389 |
| | 3200 | - 72 | 1259 |
| 4.0db | 300 | - 887 | - 202 |
| | 500 | - 910 | - 90 |
| | 1000 | - 961 | + 27 |
| | 1500 | -1056 | 120 |
| | 2000 | -1260 | 227 |
| .8 fc→ | 2200 | -1439 | 331 |
| | 2400 | -1728 | 595 |
| | 2600 | -1907 | 1319 |
| fc→ | 2800 | -1278 | 2099 |
| | 3000 | - 445 | 1940 |
| 1.1 fc→ | 3100 | - 245 | 1692 |
| | 3200 | - 135 | 1528 |
| 4.5db | 300 | - 984 | - 230 |
| | 500 | -1013 | - 104 |
| | 1000 | -1067 | + 43 |
| | 1500 | -1184 | 168 |
| | 2000 | -1401 | 367 |
| .8 fc→ | 2200 | -1521 | 551 |
| | 2400 | -1585 | 910 |
| | 2600 | -1382 | 1530 |
| fc→ | 2800 | - 830 | 1768 |
| | 3000 | - 317 | 1683 |
| 1.1 fc→ | 3100 | - 156 | 1536 |
| | 3200 | - 50 | 1365 |
| 5.0db | 200 | - 975 | - 410 |
| | 300 | -1022 | - 252 |
| | 500 | -1054 | - 113 |
| | 1000 | -1117 | + 27 |
| | 1500 | -1241 | 147 |
| | 2000 | -1523 | 358 |
| .8 fc→ | 2200 | -1687 | 555 |
| | 2400 | -1848 | 992 |
| | 2600 | -1640 | 1675 |
| fc→ | 2800 | - 930 | 2031 |
| | 3000 | - 319 | 1834 |
| 1.1 fc→ | 3100 | - 172 | 1662 |
| | 3200 | - 48 | 1490 |

NEGATIVE IMPEDANCE OF NETWORK 12X (Cont'd)
19CNB)
22BSA) H135

| Gain | | F | R | X |
|---|---|---|---|---|
| 5.5db | | 300 | -1105 | - 276 |
| | | 500 | -1147 | - 135 |
| | | 1000 | -1211 | + 20 |
| | | 1500 | -1334 | 136 |
| | | 2000 | -1590 | 256 |
| | .8 fc→ | 2200 | -1789 | 365 |
| | | 2400 | -2127 | 651 |
| | | 2600 | -2267 | 1565 |
| | fc→ | 2800 | -1199 | 2531 |
| | | 3000 | - 224 | 2165 |
| | 1.1 fc→ | 3100 | - 78 | 1864 |
| | | 3200 | - 10 | 1646 |
| 6.0db | | 200 | -1134 | - 513 |
| | | 300 | -1195 | - 318 |
| | | 500 | -1232 | - 139 |
| | | 1000 | -1273 | + 32 |
| | | 1500 | -1360 | 121 |
| | | 2000 | -1620 | 175 |
| | .8 fc→ | 2200 | -1869 | 222 |
| | | 2400 | -2345 | 424 |
| | | 2600 | -2946 | 1399 |
| | fc→ | 2800 | -1949 | 3010 |
| | | 3000 | - 470 | 2650 |
| | 1.1 fc→ | 3100 | - 192 | 2285 |
| | | 3200 | - 64 | 1967 |
| 6.5db | | 300 | -1268 | - 320 |
| | | 500 | -1321 | - 121 |
| | | 1000 | -1376 | + 84 |
| | | 1500 | -1467 | 238 |
| | | 2000 | -1832 | 468 |
| | .8 fc→ | 2200 | -2021 | 787 |
| | | 2400 | -2079 | 1513 |
| | | 2600 | -1339 | 2274 |
| | fc→ | 2800 | - 443 | 2157 |
| | | 3000 | - 77 | 1714 |
| | 1.1 fc→ | 3100 | - 25 | 1578 |
| | | 3200 | + 49 | 1408 |
| 7.0db | | 200 | -1261 | - 604 |
| | | 300 | -1332 | - 368 |
| | | 500 | -1381 | - 166 |
| | | 1000 | -1462 | + 46 |
| | | 1500 | -1600 | 218 |
| | | 2000 | -1885 | 497 |
| | .8 fc→ | 2200 | -2061 | 737 |
| | | 2400 | -2212 | 1230 |
| | | 2600 | -2049 | 1923 |
| | fc→ | 2800 | -1285 | 2472 |
| | | 3000 | - 506 | 2286 |
| | 1.1 fc→ | 3100 | - 325 | 2106 |
| | | 3200 | - 141 | 1887 |
| 7.5db | | 200 | -1301 | - 629 |
| | | 300 | -1389 | - 382 |
| | | 500 | -1439 | - 166 |
| | | 1000 | -1514 | + 60 |
| | | 1500 | -1662 | 246 |
| | | 2000 | -1969 | 573 |
| | .8 fc→ | 2200 | -2145 | 856 |
| | | 2400 | -2225 | 1401 |
| | | 2600 | -1874 | 2109 |
| | fc→ | 2800 | -1063 | 2459 |
| | | 3000 | - 408 | 2192 |
| | 1.1 fc→ | 3100 | - 225 | 1993 |
| | | 3200 | - 76 | 1800 |
| 8.0db | | 200 | -1336 | - 656 |
| | | 300 | -1426 | - 406 |
| | | 500 | -1470 | - 177 |
| | | 1000 | -1533 | + 48 |
| | | 1500 | -1661 | 188 |
| | | 2000 | -1988 | 378 |
| | .8 fc→ | 2200 | -2322 | 557 |
| | | 2400 | -2579 | 1016 |
| | | 2600 | -2587 | 1977 |
| | fc→ | 2800 | -1628 | 2813 |
| | | 3000 | - 581 | 2639 |
| | 1.1 fc→ | 3100 | - 325 | 2409 |
| | | 3200 | - 106 | 2141 |

TABLE 1

NEGATIVE IMPEDANCE OF NETWORK 13X
19DNB-H135

| Gain | F | R | X |
|---|---|---|---|
| 1.0db | 200 | - 261 | - 97 |
| | 300 | - 268 | - 58 |
| | 500 | - 275 | - 29 |
| | 1000 | - 300 | 0 |
| | 1500 | - 333 | + 21 |
| | 2000 | - 400 | 51 |
| | 2400 | - 490 | 94 |
| .8 fc → | 2500 | - 525 | 109 |
| | 2800 | - 684 | 229 |
| | 3000 | - 790 | 477 |
| fc → | 3200 | - 581 | 877 |
| 1.1 fc → | 3500 | - 70 | 751 |
| | 3600 | - 5 | 665 |
| 1.5db | 200 | - 420 | - 134 |
| | 300 | - 428 | - 73 |
| | 500 | - 438 | - 16 |
| | 1000 | - 452 | + 39 |
| | 1500 | - 502 | 98 |
| | 2000 | - 592 | 171 |
| | 2400 | - 723 | 368 |
| .8 fc → | 2500 | - 749 | 466 |
| | 2800 | - 571 | 824 |
| | 3000 | - 304 | 851 |
| fc → | 3200 | - 133 | 773 |
| 1.1 fc → | 3500 | - 47 | 625 |
| | 3600 | - 40 | 609 |
| 2.0db | 200 | - 547 | - 188 |
| | 300 | - 592 | - 171 |
| | 500 | - 580 | - 34 |
| | 1000 | - 610 | + 15 |
| | 1500 | - 663 | 87 |
| | 2000 | - 754 | 162 |
| | 2400 | - 913 | 271 |
| .8 fc → | 2500 | - 974 | 336 |
| | 2800 | -1150 | 747 |
| | 3000 | - 918 | 1214 |
| fc → | 3200 | - 362 | 1272 |
| 1.1 fc → | 3500 | - 34 | 939 |
| | 3600 | + 13 | 845 |
| 2.5db | 200 | - 701 | - 234 |
| | 300 | - 724 | - 123 |
| | 500 | - 728 | - 9 |
| | 1000 | - 723 | + 114 |
| | 1500 | - 740 | 182 |
| | 2000 | - 899 | 249 |
| | 2400 | -1229 | 698 |
| .8 fc → | 2500 | -1178 | 1025 |
| | 2800 | - 345 | 1274 |
| | 3000 | - 69 | 1059 |
| fc → | 3200 | - 25 | 845 |
| 1.1 fc → | 3500 | + 29 | 697 |
| | 3600 | + 7 | 671 |

| Gain | F | R | X |
|---|---|---|---|
| 3.0db | 200 | - 737 | - 288 |
| | 300 | - 762 | - 179 |
| | 500 | - 778 | - 90 |
| | 1000 | - 815 | + 3 |
| | 1500 | - 886 | 51 |
| | 2000 | -1030 | 105 |
| | 2400 | -1264 | 213 |
| .8 fc → | 2500 | -1353 | 273 |
| | 2800 | -1657 | 672 |
| | 3000 | -1674 | 1280 |
| fc → | 3200 | -1119 | 1841 |
| 1.1 fc → | 3500 | - 274 | 1626 |
| | 3600 | - 133 | 1472 |
| 3.5db | 200 | - 845 | - 337 |
| | 300 | - 878 | - 201 |
| | 500 | - 895 | - 89 |
| | 1000 | - 922 | + 15 |
| | 1500 | - 983 | 75 |
| | 2000 | -1130 | 116 |
| | 2400 | -1438 | 216 |
| .8 fc → | 2500 | -1561 | 291 |
| | 2800 | -1967 | 890 |
| | 3000 | -1744 | 1712 |
| fc → | 3200 | - 902 | 2073 |
| 1.1 fc → | 3500 | - 144 | 1625 |
| | 3600 | - 48 | 1490 |
| 4.0db | 200 | - 943 | - 381 |
| | 300 | - 982 | - 241 |
| | 500 | -1006 | - 119 |
| | 1000 | -1066 | + 5 |
| | 1500 | -1177 | 109 |
| | 2000 | -1368 | 270 |
| | 2400 | -1581 | 591 |
| .8 fc → | 2500 | -1618 | 715 |
| | 2800 | -1606 | 1224 |
| | 3000 | -1366 | 1633 |
| fc → | 3200 | - 926 | 1741 |
| 1.1 fc → | 3500 | - 425 | 1705 |
| | 3600 | - 311 | 1600 |
| 4.5db | 200 | -1026 | - 446 |
| | 300 | -1071 | - 276 |
| | 500 | -1101 | - 139 |
| | 1000 | -1150 | + 4 |
| | 1500 | -1237 | 76 |
| | 2000 | -1429 | 141 |
| | 2400 | -1798 | 269 |
| .8 fc → | 2500 | -1946 | 354 |
| | 2800 | -2477 | 1174 |
| | 3000 | -2161 | 2258 |
| fc → | 3200 | - 934 | 2615 |
| 1.1 fc → | 3500 | - 78 | 1864 |
| | 3600 | + 35 | 1635 |

TABLE 1

NEGATIVE IMPEDANCE OF NETWORK 13X (Cont'd)
19DNB-H135

| Gain | F | R | X |
|---|---|---|---|
| 5.0db | 200 | -1123 | - 474 |
| | 300 | -1158 | - 293 |
| | 500 | -1196 | - 134 |
| | 1000 | -1230 | + 42 |
| | 1500 | -1305 | 134 |
| | 2000 | -1505 | 201 |
| | 2400 | -1938 | 390 |
| .8 fc→ | 2500 | -2124 | 541 |
| | 2800 | -2216 | 1598 |
| | 3000 | -1766 | 2568 |
| fc→ | 3200 | - 800 | 2524 |
| 1.1 fc→ | 3500 | - 199 | 1945 |
| | 3600 | - 167 | 1755 |
| 5.5db | 200 | -1173 | - 543 |
| | 300 | -1236 | - 337 |
| | 500 | -1270 | - 155 |
| | 1000 | -1321 | + 19 |
| | 1500 | -1402 | 116 |
| | 2000 | -1590 | 191 |
| | 2400 | -1983 | 276 |
| .8 fc → | 2500 | -2186 | 352 |
| | 2800 | -3021 | 1316 |
| | 3000 | -2391 | 2993 |
| fc → | 3200 | - 693 | 2994 |
| 1.1 fc → | 3500 | + 2 | 1997 |
| | 3600 | + 36 | 1778 |
| 6.0db | 200 | - | |
| | 300 | -1311 | - 363 |
| | 500 | -1364 | - 178 |
| | 1000 | -1421 | - 27 |
| | 1500 | -1515 | + 43 |
| | 2000 | -1755 | 87 |
| | 2400 | -2214 | 194 |
| .8 fc → | 2500 | -2382 | 281 |
| | 2600 | -2594 | 421 |
| | 2800 | -3002 | 1092 |
| | 3000 | -2758 | 2283 |
| fc → | 3200 | -1512 | 3121 |
| 1.1 fc → | 3500 | - 183 | 2503 |
| | 3600 | - 78 | 2222 |
| 6.5db | 200 | -1330 | - 641 |
| | 300 | -1416 | - 387 |
| | 500 | -1465 | - 156 |
| | 1000 | -1499 | + 85 |
| | 1500 | -1576 | 217 |
| | 2000 | -1834 | 344 |
| | 2400 | -2413 | 747 |
| .8 fc→ | 2500 | -2580 | 1049 |
| | 2800 | -1984 | 2716 |
| | 3000 | - 808 | 2805 |
| fc→ | 3200 | - 166 | 2249 |
| 1.1 fc→ | 3500 | + 30 | 1693 |
| | 3600 | + 35 | 1545 |

| Gain | F | R | X |
|---|---|---|---|
| 7.0db | 200 | - | |
| | 300 | -1395 | - 413 |
| | 500 | -1463 | - 234 |
| | 1000 | -1566 | - 80 |
| | 1500 | -1741 | + 23 |
| | 2000 | -2040 | 168 |
| | 2400 | -2475 | 456 |
| .8 fc → | 2500 | -2613 | 619 |
| | 2600 | -2734 | 860 |
| | 2800 | -2815 | 1620 |
| | 3000 | -2316 | 2705 |
| fc → | 3200 | -1220 | 3129 |
| 1.1 fc→ | 3500 | - 178 | 2526 |
| | 3600 | - | |
| 7.5db | 200 | -1402 | - 738 |
| | 300 | -1501 | - 464 |
| | 500 | -1558 | - 239 |
| | 1000 | -1646 | - 31 |
| | 1500 | -1796 | + 111 |
| | 2000 | -2071 | 295 |
| | 2400 | -2501 | 638 |
| .8 fc→ | 2500 | -2656 | 831 |
| | 2800 | -2865 | 1897 |
| | 3000 | -2289 | 2854 |
| fc→ | 3200 | -1153 | 3115 |
| 1.1 fc→ | 3500 | - 250 | 2476 |
| | 3600 | - 45 | 2227 |
| 8.0db | 200 | -1504 | - 777 |
| | 300 | -1615 | - 493 |
| | 500 | -1674 | - 242 |
| | 1000 | -1740 | 0 |
| | 1500 | -1863 | + 122 |
| | 2000 | -2170 | 236 |
| | 2400 | -2740 | 535 |
| .8 fc→ | 2500 | -2956 | 758 |
| | 2800 | -3487 | 2057 |
| | 3000 | -2874 | 3367 |
| fc→ | 3200 | -1604 | 3690 |
| 1.1 fc→ | 3500 | - 495 | 2994 |
| | 3600 | - 368 | 2807 |

# TABLE 1

## NEGATIVE IMPEDANCE OF NETWORK 14X
## 19DNB-B175

| Gain | F | R | X |
|---|---|---|---|
| 1.0db | 200 | - 454 | - 154 |
| | 500 | - 473 | - 40 |
| | 1000 | - 482 | + 13 |
| | 1500 | - 506 | 54 |
| | 2000 | - 537 | 82 |
| | 2500 | - | |
| | 3000 | - 705 | 145 |
| .8 fc → | 3100 | - 741 | 156 |
| fc → | 3900 | -1192 | 917 |
| | 4000 | -1043 | 1167 |
| 1.1 fc → | 4300 | - 317 | 1334 |
| | 4600 | - 11 | 1041 |
| 1.5db | 200 | - 631 | - 240 |
| | 500 | - 671 | - 76 |
| | 1000 | - 702 | 0 |
| | 1500 | - 755 | 52 |
| | 2000 | - 822 | 111 |
| | 2500 | - 906 | 161 |
| | 3000 | -1086 | 396 |
| .8 fc → | 3100 | -1134 | 470 |
| fc → | 3900 | - 973 | 1290 |
| | 4000 | - 774 | 1438 |
| 1.1 fc → | 4300 | - 375 | 1429 |
| | 4600 | - 139 | 1264 |
| 2.0db | 200 | - 840 | - 330 |
| | 500 | - 891 | - 76 |
| | 1000 | - 922 | + 49 |
| | 1500 | - 968 | 142 |
| | 2000 | -1056 | 250 |
| | 2500 | -1205 | 438 |
| | 3000 | -1347 | 908 |
| .8 fc → | 3100 | -1293 | 1088 |
| fc → | 3900 | - 106 | 1324 |
| | 4000 | - 35 | 1227 |
| 1.1 fc → | 4300 | + 37 | 1018 |
| | 4600 | + 50 | 883 |
| 2.5db | 200 | - 998 | - 431 |
| | 500 | -1082 | - 135 |
| | 1000 | -1120 | + 10 |
| | 1500 | -1182 | 94 |
| | 2000 | -1262 | 187 |
| | 2500 | -1413 | 325 |
| | 3000 | -1581 | 601 |
| .8 fc → | 3100 | -1627 | 695 |
| fc → | 3900 | -1282 | 1824 |
| | 4000 | -1067 | 1942 |
| 1.1 fc → | 4300 | - 544 | 1957 |
| | 4600 | - 103 | 1697 |

| Gain | F | R | X |
|---|---|---|---|
| 3.0db | 200 | -1200 | - 563 |
| | 500 | -1312 | - 146 |
| | 1000 | -1336 | + 44 |
| | 1500 | -1368 | 150 |
| | 2000 | -1451 | 243 |
| | 2500 | -1638 | 369 |
| | 3000 | -1973 | 701 |
| .8 fc → | 3100 | -2034 | 824 |
| | 3500 | -2007 | 1721 |
| fc → | 3900 | - 969 | 2373 |
| | 4000 | - 704 | 2325 |
| 1.1 fc → | 4300 | - 225 | 1993 |
| | 4600 | + 29 | 1643 |
| 3.5db | 200 | -1341 | - 647 |
| | 500 | -1458 | - 210 |
| | 1000 | -1504 | 0 |
| | 1500 | -1579 | + 117 |
| | 2000 | -1705 | 234 |
| | 2500 | -1925 | 416 |
| | 3000 | -2250 | 804 |
| .8 fc → | 3100 | -2350 | 912 |
| | 3500 | -2482 | 1807 |
| fc → | 3900 | -1719 | 2878 |
| | 4000 | -1295 | 2953 |
| 1.1 fc → | 4300 | - 384 | 2616 |
| | 4600 | - 96 | 2228 |
| 4.0db | 200 | -1404 | - 696 |
| | 500 | -1546 | - 207 |
| | 1000 | -1591 | + 22 |
| | 1500 | -1652 | 168 |
| | 2000 | -1769 | 304 |
| | 2500 | -1972 | 490 |
| | 3000 | -2326 | 894 |
| .8 fc → | 3100 | -2366 | 1019 |
| | 3500 | -2504 | 1989 |
| fc → | 3900 | -1582 | 2947 |
| 1.1 fc → | 4300 | - 458 | 2633 |
| | 4600 | - 171 | 2194 |
| 4.5db | 200 | -1472 | - 814 |
| | 500 | -1697 | - 245 |
| | 1000 | -1790 | + 7 |
| | 1500 | -1873 | 148 |
| | 2000 | -2094 | 314 |
| | 2500 | -2423 | 634 |
| | 3000 | -2705 | 1704 |
| .8 fc → | 3100 | -2612 | 2013 |
| | 3500 | -1273 | 2955 |
| fc → | 3900 | - 183 | 2410 |
| | 4000 | - 23 | 2173 |
| 1.1 fc → | 4300 | + 107 | 1798 |
| | 4600 | + 85 | 1536 |

NEGATIVE IMPEDANCE OF NETWORK 14X (Cont'd)
19DNB-B175

| Gain | F | R | X |
|---|---|---|---|
| 5.0db | 200 | -1581 | - 919 |
| | 500 | -1881 | - 282 |
| | 1000 | -1940 | + 20 |
| | 1500 | -2000 | 172 |
| | 2000 | -2120 | 297 |
| | 2500 | -2381 | 458 |
| | 3000 | -2893 | 917 |
| .8 fc → | 3100 | -3039 | 1125 |
| | 3500 | -2814 | 2864 |
| fc → | 3900 | - 671 | 3388 |
| | 4000 | - 350 | 3117 |
| 1.1 fc → | 4300 | + 88 | 2360 |
| | 4600 | - | |
| 5.5db | 200 | -1385 | -1004 |
| | 500 | -1591 | - 367 |
| | 1000 | -2043 | - 110 |
| | 1500 | -2184 | + 50 |
| | 2000 | -2390 | 225 |
| | 2500 | -2684 | 516 |
| | 3000 | -3040 | 1151 |
| .8 fc → | 3100 | -3072 | 1333 |
| | 3500 | -2577 | 2537 |
| fc → | 3900 | -1388 | 3514 |
| | 4000 | - 914 | 3560 |
| 1.1 fc → | 4300 | - 318 | 3182 |
| | 4600 | + 359 | 2682 |
| 6.0db | 200 | -1764 | -1071 |
| | 500 | -2111 | - 382 |
| | 1000 | -2221 | - 77 |
| | 1500 | -2330 | + 98 |
| | 2000 | -2510 | 255 |
| | 2500 | -2817 | 490 |
| | 3000 | -3209 | 1031 |
| .8 fc → | 3100 | -3300 | 1212 |
| | 3500 | -3175 | 2466 |
| fc → | 3900 | -1927 | 3710 |
| | 4000 | -1395 | 3791 |
| 1.1 fc → | 4300 | - 269 | 3359 |
| | 4600 | + 175 | 2660 |

TABLE 1

NEGATIVE IMPEDANCE OF NETWORK 15X
19DNB-D175

| Gain | F | R | X |
|---|---|---|---|
| 1.0db | 200 | - 366 | - 120 |
| | 300 | - 377 | - 67 |
| | 500 | - 387 | - 20 |
| | 1000 | - 405 | + 37 |
| | 1500 | - 433 | 87 |
| | 2000 | - 497 | 146 |
| | 2200 | - 534 | 187 |
| | 2500 | - 618 | 299 |
| .8 fc → | 2600 | - 645 | 374 |
| | 2800 | - 629 | 582 |
| | 3000 | - 408 | 791 |
| fc → | 3200 | - 168 | 749 |
| 1.1 fc → | 3500 | - 6 | 597 |
| | 4000 | + 5 | 447 |
| 1.5db | 200 | - 452 | - 189 |
| | 300 | - 525 | - 128 |
| | 500 | - 570 | - 39 |
| | 1000 | - 590 | + 42 |
| | 1500 | - 582 | 101 |
| | 2000 | - 682 | 176 |
| | 2200 | - 792 | 230 |
| | 2500 | - 923 | 391 |
| .8 fc→ | 2600 | - 963 | 490 |
| | 2800 | - 929 | 767 |
| | 3000 | - 675 | 1083 |
| fc→ | 3200 | - 310 | 1127 |
| 1.1 fc→ | 3500 | - 27 | 885 |
| | 4000 | + 32 | 644 |
| 2.0db | 200 | - 721 | - 255 |
| | 300 | - 756 | - 138 |
| | 500 | - 769 | - 24 |
| | 1000 | - 767 | + 102 |
| | 1500 | - 784 | 178 |
| | 2000 | - 883 | 242 |
| | 2200 | - 983 | 306 |
| | 2500 | -1209 | 580 |
| .8fc→ | 2600 | -1221 | 805 |
| | 2800 | - 942 | 1292 |
| | 3000 | - 452 | 1321 |
| fc→ | 3200 | - 93 | 1157 |
| 1.1 fc→ | 3500 | + 4 | 860 |
| | 4000 | + 45 | 681 |
| 2.5db | 200 | - 874 | - 338 |
| | 300 | - 918 | - 190 |
| | 500 | - 938 | - 56 |
| | 1000 | - 943 | + 83 |
| | 1500 | - 960 | 160 |
| | 2000 | -1075 | 210 |
| | 2200 | -1175 | 250 |
| | 2500 | -1425 | 417 |
| .8 fc→ | 2600 | -1530 | 555 |
| | 2800 | -1609 | 1083 |
| | 3000 | -1205 | 1699 |
| fc→ | 3200 | - 538 | 1802 |
| 1.1 fc→ | 3500 | - 43 | 1373 |
| | 4000 | + 68 | 960 |

| Gain | F | R | X |
|---|---|---|---|
| 3.0db | 200 | - 955 | - 394 |
| | 300 | -1010 | - 237 |
| | 500 | -1039 | - 100 |
| | 1000 | -1076 | + 38 |
| | 1500 | -1134 | 131 |
| | 2000 | -1257 | 229 |
| | 2200 | -1340 | 276 |
| | 2500 | -1579 | 415 |
| .8 fc→ | 2600 | -1681 | 516 |
| | 2800 | -1932 | 935 |
| | 3000 | -1787 | 1773 |
| fc→ | 3200 | - 843 | 2310 |
| 1.1 fc→ | 3500 | - 32 | 1768 |
| | 4000 | + 101 | 1107 |
| 3.5db | 200 | -1116 | - 483 |
| | 300 | -1188 | - 275 |
| | 500 | -1219 | - 81 |
| | 1000 | -1223 | + 124 |
| | 1500 | -1245 | 247 |
| | 2000 | -1386 | 347 |
| | 2200 | -1512 | 434 |
| | 2500 | -1806 | 776 |
| .8 fc→ | 2600 | -1888 | 1020 |
| | 2800 | -1650 | 1785 |
| | 3000 | - 914 | 2176 |
| fc→ | 3200 | - 242 | 1899 |
| 1.1 fc→ | 3500 | + 14 | 1391 |
| | 4000 | + 84 | 1037 |
| 4.0db | 200 | -1181 | - 531 |
| | 300 | -1241 | - 341 |
| | 500 | -1279 | - 172 |
| | 1000 | -1366 | + 12 |
| | 1500 | -1518 | 186 |
| | 2000 | -1689 | 420 |
| | 2200 | -1800 | 586 |
| | 2500 | -1922 | 926 |
| .8 fc → | 2600 | -1966 | 1079 |
| | 2800 | -1950 | 1459 |
| | 3000 | -1743 | 1942 |
| fc → | 3200 | -1231 | 2293 |
| 1.1 fc → | 3500 | - 344 | 2120 |
| | 4000 | - 67 | 1456 |
| 4.5db | 200 | -1313 | - 615 |
| | 300 | -1387 | - 361 |
| | 500 | -1433 | - 163 |
| | 1000 | -1479 | + 99 |
| | 1500 | -1543 | 272 |
| | 2000 | -1831 | 521 |
| | 2200 | -1931 | 721 |
| | 2500 | -2232 | 1415 |
| .8 fc → | 2600 | -2053 | 1874 |
| | 2800 | -1207 | 2468 |
| | 3000 | - 419 | 2244 |
| fc → | 3200 | - 16 | 1829 |
| 1.1 fc → | 3500 | - 9 | 1395 |
| | 4000 | + 82 | 1122 |

TABLE 1

NEGATIVE IMPEDANCE OF NETWORK 15X (Cont'd)
19DNB-D175

| Gain | F | R | X |
|---|---|---|---|
| 5.0db | 200 | -1419 | - 695 |
| | 300 | -1506 | - 437 |
| | 500 | -1553 | - 210 |
| | 1000 | -1616 | + 37 |
| | 1500 | -1735 | 200 |
| | 2000 | -1959 | 379 |
| | 2200 | -2102 | 490 |
| | 2500 | -2404 | 925 |
| .8 fc → | 2600 | -2562 | 1096 |
| | 2800 | -2706 | 1756 |
| | 3000 | -2342 | 2639 |
| fc → | 3200 | -1366 | 3073 |
| 1.1 fc → | 3500 | - 374 | 2536 |
| | 4000 | - 117 | 1802 |
| 5.5db | 200 | -1508 | - 792 |
| | 300 | -1622 | - 493 |
| | 500 | -1690 | - 232 |
| | 1000 | -1752 | + 55 |
| | 1500 | -1859 | 240 |
| | 2000 | -2056 | 448 |
| | 2200 | -2167 | 575 |
| | 2500 | -2409 | 928 |
| .8 fc → | 2600 | -2494 | 1074 |
| | 2800 | -2877 | 1833 |
| | 3000 | -2345 | 2320 |
| fc → | 3200 | -1520 | 2853 |
| 1.1 fc → | 3500 | - 418 | 2555 |
| | 4000 | + 50 | 1719 |
| 6.0db | 200 | -1575 | - 853 |
| | 300 | -1703 | - 547 |
| | 500 | -1769 | - 277 |
| | 1000 | -1850 | - 16 |
| | 1500 | -1983 | + 157 |
| | 2000 | -2217 | 320 |
| | 2200 | -2379 | 417 |
| | 2500 | -2793 | 707 |
| .8 fc → | 2600 | -2972 | 861 |
| | 2800 | -3349 | 1432 |
| | 3000 | -3439 | 2641 |
| fc → | 3200 | -2544 | 3698 |
| 1.1 fc → | 3500 | - 672 | 3371 |
| | 4000 | - 118 | 2281 |
| 6.5db | 200 | -1370 | - 893 |
| | 300 | -1697 | - 628 |
| | 500 | -1840 | - 307 |
| | 1000 | -1940 | + 23 |
| | 1500 | -2101 | 202 |
| | 2000 | -2381 | 470 |
| | 2200 | -2563 | 632 |
| | 2500 | -2880 | 1142 |
| .8 fc → | 2600 | -2959 | 1410 |
| | 2800 | -2944 | 2232 |
| | 3000 | -2256 | 3110 |
| fc → | 3200 | -1194 | 3293 |
| 1.1 fc → | 3500 | - 199 | 2597 |
| | 4000 | + 68 | 1763 |

| Gain | F | R | X |
|---|---|---|---|
| 7.0db | 200 | -1736 | -1052 |
| | 300 | -1913 | - 652 |
| | 500 | -1995 | - 299 |
| | 1000 | -2072 | + 37 |
| | 1500 | -2202 | 252 |
| | 2000 | -2489 | 493 |
| | 2200 | -2682 | 646 |
| | 2500 | -3121 | 1209 |
| .8 fc → | 2600 | -3255 | 1528 |
| | 2800 | -3245 | 2550 |
| | 3000 | -2290 | 3505 |
| fc → | 3200 | -1043 | 3524 |
| 1.1 fc → | 3500 | - 158 | 2690 |
| | 4000 | + 31 | 1862 |
| 7.5db | 200 | -1746 | -1064 |
| | 300 | -1944 | - 669 |
| | 500 | -2032 | - 308 |
| | 1000 | -2100 | + 43 |
| | 1500 | -2212 | 237 |
| | 2000 | -2481 | 419 |
| | 2200 | -2683 | 537 |
| | 2500 | -3188 | 951 |
| .8 fc → | 2600 | -3386 | 1258 |
| | 2800 | -3584 | 2326 |
| | 3000 | -2810 | 3625 |
| fc → | 3200 | - | |
| 1.1 fc → | 3500 | - 139 | 2941 |
| | 4000 | + 120 | 1914 |
| 8.0db | 200 | -1821 | -1108 |
| | 300 | -2026 | - 702 |
| | 500 | -2125 | - 338 |
| | 1000 | -2218 | + 27 |
| | 1500 | -2371 | 248 |
| | 2000 | -2766 | 514 |
| | 2200 | -3085 | 746 |
| | 2500 | -3614 | 1567 |
| .8 fc → | 2600 | -3702 | 2136 |
| | 2800 | -3310 | 3270 |
| | 3000 | -2131 | 3943 |
| fc → | 3200 | -1121 | 3753 |
| 1.1 fc → | 3500 | - 363 | 2897 |
| | 4000 | - 154 | 2263 |

TABLE 1

NEGATIVE IMPEDANCE OF NETWORK 16X
19DNB-H175

| Gain | F | R | X |
|---|---|---|---|
| 1.0db | 200 | - 307 | - 105 |
| | 500 | - 325 | - 31 |
| | 1000 | - 350 | + 10 |
| | 1500 | - 389 | 45 |
| | 2000 | - 467 | 88 |
| .8 fc→ | 2200 | - 514 | 115 |
| | 2400 | - 582 | 162 |
| fc→ | 2800 | - 718 | 508 |
| 1.1 fc→ | 3000 | - 521 | 813 |
| | 3200 | - 176 | 807 |
| 1.5db | 200 | - 457 | - 158 |
| | 500 | - 487 | - 45 |
| | 1000 | - 520 | + 13 |
| | 1500 | - 580 | 62 |
| | 2000 | - 694 | 136 |
| .8 fc→ | 2200 | - 768 | 190 |
| | 2400 | - 857 | 298 |
| fc→ | 2800 | - 873 | 857 |
| 1.1 fc→ | 3000 | - 524 | 1068 |
| | 3200 | - 182 | 1010 |
| 2.0db | 200 | - 606 | - 214 |
| | 500 | - 645 | - 50 |
| | 1000 | - 692 | + 64 |
| | 1500 | - 795 | 182 |
| | 2000 | - 926 | 408 |
| .8 fc→ | 2200 | - 956 | 621 |
| | 2400 | - 845 | 902 |
| fc→ | 2800 | - 293 | 1099 |
| 1.1 fc→ | 3000 | - 79 | 871 |
| | 3200 | - 30 | 739 |
| 2.5db | 200 | - 736 | - 273 |
| | 500 | - 784 | - 62 |
| | 1000 | - 830 | + 59 |
| | 1500 | - 912 | 146 |
| | 2000 | -1127 | 344 |
| .8 fc→ | 2200 | -1235 | 541 |
| | 2400 | -1236 | 878 |
| fc→ | 2800 | - 486 | 1376 |
| 1.1 fc→ | 3000 | - 179 | 1201 |
| | 3200 | - 83 | 1023 |
| 3.0db | 200 | - 842 | - 334 |
| | 500 | - 907 | - 101 |
| | 1000 | - 952 | + 33 |
| | 1500 | -1042 | 106 |
| | 2000 | -1253 | 200 |
| .8 fc→ | 2200 | -1453 | 291 |
| | 2400 | -1738 | 526 |
| fc→ | 2800 | -1090 | 2025 |
| 1.1 fc→ | 3000 | - 327 | 1858 |
| | 3200 | - 50 | 1417 |

| Gain | F | R | X |
|---|---|---|---|
| 3.5db | 200 | - 967 | - 383 |
| | 500 | -1044 | - 74 |
| | 1000 | -1075 | + 91 |
| | 1500 | -1153 | 190 |
| | 2000 | -1458 | 358 |
| .8 fc→ | 2200 | -1682 | 599 |
| | 2400 | -1804 | 1235 |
| fc→ | 2800 | - 410 | 1798 |
| 1.1 fc→ | 3000 | - 96 | 1461 |
| | 3200 | - 30 | 1207 |
| 4.0db | 200 | -1103 | - 475 |
| | 500 | -1192 | - 113 |
| | 1000 | -1249 | + 94 |
| | 1500 | -1350 | 265 |
| | 2000 | -1578 | 507 |
| .8 fc→ | 2200 | -1737 | 703 |
| | 2400 | -1896 | 1185 |
| fc→ | 2800 | - 846 | 2218 |
| 1.1 fc→ | 3000 | - 275 | 1850 |
| | 3200 | - 85 | 1496 |
| 4.5db | 200 | -1185 | - 545 |
| | 300 | -1282 | - 323 |
| | 500 | -1326 | - 113 |
| | 1000 | -1371 | + 116 |
| | 1500 | -1457 | 287 |
| | 2000 | -1791 | 565 |
| .8 fc→ | 2200 | -1960 | 919 |
| | 2400 | -1903 | 1653 |
| fc→ | 2800 | - 408 | 2064 |
| 1.1 fc→ | 3000 | - 80 | 1673 |
| | 3200 | + 14 | 1391 |
| 5.0db | 200 | -1294 | - 607 |
| | 500 | -1411 | - 160 |
| | 1000 | -1458 | + 61 |
| | 1500 | -1559 | 184 |
| | 2000 | -1870 | 316 |
| .8 fc → | 2200 | -2151 | 459 |
| | 2400 | -2574 | 894 |
| fc → | 2800 | -1878 | 2922 |
| 1.1 fc → | 3000 | - 722 | 2813 |
| | 3200 | - 183 | 2201 |
| 5.5db | 200 | -1347 | - 671 |
| | 300 | -1456 | - 407 |
| | 500 | -1506 | - 171 |
| | 1000 | -1548 | + 76 |
| | 1500 | -1634 | 211 |
| | 2000 | -1921 | 353 |
| .8 fc → | 2200 | -2158 | 490 |
| | 2400 | -2193 | 873 |
| fc → | 2800 | -1598 | 2814 |
| 1.1 fc → | 3000 | - 397 | 2769 |
| | 3200 | - 206 | 2272 |

NEGATIVE IMPEDANCE OF NETWORK 16X (Cont'd)
19DNB-H175

| Gain | F | R | X |
|---|---|---|---|
| 6.0db | 200 | -1411 | - 707 |
| | 300 | -1511 | - 440 |
| | 500 | -1554 | - 203 |
| | 1000 | -1602 | + 35 |
| | 1500 | -1733 | 142 |
| | 2000 | -2132 | 242 |
| .8 fc → | 2200 | -2493 | 400 |
| | 2400 | -3024 | 902 |
| fc → | 2800 | -2133 | 3384 |
| 1.1 fc → | 3000 | - 818 | 3140 |
| | 3200 | - 269 | 2524 |
| 6.5db | 200 | -1470 | - 751 |
| | 300 | -1575 | - 448 |
| | 500 | -1641 | - 185 |
| | 1000 | -1684 | + 100 |
| | 1500 | -1813 | 249 |
| | 2000 | -2266 | 537 |
| .8 fc → | 2200 | -2581 | 919 |
| | 2400 | -2689 | 1740 |
| fc → | 2800 | - 870 | 2743 |
| 1.1 fc → | 3000 | - 304 | 2322 |
| | 3200 | - 89 | 1891 |
| 7.0db | 200 | -1733 | - 943 |
| | 300 | -1719 | - 505 |
| | 500 | -1778 | - 190 |
| | 1000 | -1821 | + 126 |
| | 1500 | -1936 | 303 |
| | 2000 | -2393 | 593 |
| .8 fc → | 2200 | -2722 | 978 |
| | 2400 | -2891 | 1874 |
| fc → | 2800 | - 823 | 2973 |
| 1.1 fc → | 3000 | - 220 | 2392 |
| | 3200 | - 8 | 1951 |
| 7.5db | 200 | -1591 | - 918 |
| | 300 | -1728 | - 552 |
| | 500 | -1813 | - 249 |
| | 1000 | -1877 | + 47 |
| | 1500 | -2001 | 194 |
| | 2000 | -2414 | 325 |
| .8 fc → | 2200 | -2780 | 493 |
| | 2400 | -3318 | 1034 |
| fc → | 2800 | -1964 | 3801 |
| 1.1 fc → | 3000 | -567 | 3280 |
| | 3200 | - 148 | 2660 |
| 8.0db | 200 | -1640 | - 942 |
| | 300 | -1818 | - 575 |
| | 500 | -1916 | - 235 |
| | 1000 | -1989 | + 110 |
| | 1500 | -2137 | 321 |
| | 2000 | -2645 | 692 |
| .8 fc → | 2200 | -2900 | 1153 |
| | 2400 | -2852 | 2186 |
| fc → | 2800 | - 704 | 2999 |
| 1.1 fc → | 3000 | - 226 | 2467 |
| | 3200 | - 19 | 2010 |

TABLE 1

NEGATIVE IMPEDANCE OF NETWORK 17X
19CNB-H44

| Gain | F | R | X | Gain | F | R | X |
|---|---|---|---|---|---|---|---|
| 2.5db | 200 | - 345 | - 115 | 4.0db | 200 | - 496 | - 176 |
| | 300 | - 355 | - 61 | | 300 | - 509 | - 106 |
| | 500 | - 358 | - 6 | | 500 | - 514 | - 40 |
| | 1000 | - 362 | + 12 | | 1000 | - 523 | + 14 |
| | 1500 | - 369 | + 70 | | 1500 | - 539 | + 65 |
| | 2000 | - 381 | + 117 | | 2000 | - 563 | + 105 |
| | 2500 | - 392 | + 150 | | 2500 | - 593 | + 140 |
| | 2800 | - 401 | + 173 | | 2800 | - 622 | + 166 |
| | 3000 | - 411 | + 188 | | 3000 | - 644 | + 185 |
| | 3200 | - 422 | + 202 | | 3200 | - 671 | + 206 |
| | 3400 | - 437 | + 219 | | 3400 | - 702 | + 230 |
| | 3600 | - 456 | + 232 | | 3600 | - 744 | + 262 |
| | 3800 | - 486 | + 246 | | 3800 | - 783 | + 299 |
| 0.8 fc | 4000 | - 530 | + 262 | 0.8 fc | 4000 | - 842 | + 354 |
| | 4200 | - 602 | + 292 | | 4200 | - 922 | + 443 |
| | 4500 | - 781 | + 415 | | 4500 | -1019 | + 639 |
| | 4800 | - 936 | + 910 | | 4800 | -1089 | + 901 |
| fc | 5000 | - 378 | +1276 | fc | 5000 | - 819 | +1280 |
| | 5200 | + 34 | +1017 | | 5200 | - 483 | +1400 |
| 1.1 fc | 5500 | + 86 | + 818 | 1.1 fc | 5500 | - 95 | +1265 |
| 3.0db | 200 | - 406 | - 137 | 4.5db | 200 | - 555 | - 202 |
| | 300 | - 418 | - 76 | | 300 | - 565 | - 115 |
| | 500 | - 421 | - 15 | | 500 | - 572 | - 44 |
| | 1000 | - 428 | + 38 | | 1000 | - 582 | + 29 |
| | 1500 | - 436 | + 91 | | 1500 | - 602 | + 76 |
| | 2000 | - 453 | + 137 | | 2000 | - 631 | + 123 |
| | 2500 | - 472 | + 178 | | 2500 | - 672 | + 169 |
| | 2800 | - 497 | + 210 | | 2800 | - 704 | + 206 |
| | 3000 | - 521 | + 238 | | 3000 | - 737 | + 236 |
| | 3200 | - 543 | + 261 | | 3200 | - 772 | + 270 |
| | 3400 | - 578 | + 302 | | 3400 | - 811 | + 315 |
| | 3600 | - 629 | + 363 | | 3600 | - 856 | + 374 |
| | 3800 | - 681 | + 447 | | 3800 | - 919 | + 458 |
| 0.8 fc | 4000 | - 700 | + 565 | 0.8 fc | 4000 | - 979 | + 588 |
| | 4200 | - 664 | + 793 | | 4200 | - 993 | + 781 |
| | 4500 | - 392 | +1011 | | 4500 | - 974 | + 989 |
| | 4800 | - 122 | + 958 | | 4800 | - 661 | +1244 |
| fc | 5000 | - 6 | + 827 | fc | 5000 | - 411 | +1253 |
| | 5200 | + 2 | + 727 | | 5200 | - 214 | +1158 |
| 1.1 fc | 5500 | + 21 | + 649 | 1.1 fc | 5500 | - 91 | + 987 |
| 3.5db | 200 | - 460 | - 162 | 5.0db | 200 | - 587 | - 211 |
| | 300 | - 476 | - 93 | | 300 | - 602 | - 129 |
| | 500 | - 481 | - 27 | | 500 | - 612 | - 41 |
| | 1000 | - 486 | + 30 | | 1000 | - 624 | + 20 |
| | 1500 | - 494 | + 77 | | 1500 | - 643 | + 63 |
| | 2000 | - 504 | + 116 | | 2000 | - 671 | + 113 |
| | 2500 | - 523 | + 148 | | 2500 | - 710 | + 161 |
| | 2800 | - 542 | + 170 | | 2800 | - 742 | + 194 |
| | 3000 | - 557 | + 183 | | 3000 | - 771 | + 222 |
| | 3200 | - 581 | + 199 | | 3200 | - 802 | + 253 |
| | 3400 | - 605 | + 214 | | 3400 | - 832 | + 290 |
| | 3600 | - 646 | + 235 | | 3600 | - 876 | + 340 |
| | 3800 | - 681 | + 249 | | 3800 | - 929 | + 404 |
| 0.8 fc | 4000 | - 725 | + 265 | 0.8 fc | 4000 | - 968 | + 462 |
| | 4200 | - 844 | + 359 | | 4200 | -1020 | + 615 |
| | 4500 | - 977 | + 567 | | 4500 | -1059 | + 830 |
| | 4800 | -1014 | +1021 | | 4800 | -1004 | +1115 |
| fc | 5000 | - 604 | +1446 | fc | 5000 | - 772 | +1369 |
| | 5200 | - 163 | +1384 | | 5200 | - 468 | +1474 |
| 1.1 fc | 5500 | + 80 | +1177 | 1.1 fc | 5500 | - 197 | +1397 |

TABLE 1

NEGATIVE IMPEDANCE OF NETWORK 17X (Cont'd)
19CNB-H44

| Gain | F | R | X |
|---|---|---|---|
| 5.5db | 200 | - 627 | - 233 |
| | 300 | - 656 | - 139 |
| | 500 | - 664 | - 53 |
| | 1000 | - 686 | 0 |
| | 1500 | - 700 | + 53 |
| | 2000 | - 733 | + 108 |
| | 2500 | - 772 | + 154 |
| | 2800 | - 809 | + 191 |
| | 3000 | - 831 | + 217 |
| | 3200 | - 863 | + 247 |
| | 3400 | - 902 | + 284 |
| | 3600 | - 943 | + 325 |
| | 3800 | -1000 | + 342 |
| 0.8 fc | 4000 | -1055 | + 445 |
| | 4200 | -1130 | + 548 |
| | 4500 | -1236 | + 766 |
| | 4800 | -1297 | +1152 |
| fc | 5000 | -1136 | +1578 |
| | 5200 | - 646 | +1831 |
| 1.1 fc | 5500 | - 86 | +1685 |

# TABLE 2

NEGATIVE IMPEDANCE AT 1 KC FOR OTHER SECTIONS (1X AND 2X)
(USING STRAPPING CHARTS)

| Net No. | Sec. | 1.0db GAIN R | 1.0db GAIN X | 1.5db GAIN R | 1.5db GAIN X | 2.0db GAIN R | 2.0db GAIN X | 2.5db GAIN R | 2.5db GAIN X | 3.0db GAIN R | 3.0db GAIN X |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1X | .3 | | | - 440 | 0 | - 583 | - 12 | - 700 | - 28 | - 881 | - 43 |
| 19 CNB-B88 | .4 | | | - 440 | 0 | - 588 | + 12 | - 688 | - 4 | - 852 | + 3 |
| | .6 | | | - 442 | 45 | - 585 | 61 | - 686 | + 39 | - 855 | 68 |
| | .7 | | | - 438 | 66 | - 583 | 80 | - 687 | 67 | - 852 | 87 |
| | .8 | | | - 434 | 87 | - 577 | 109 | - 681 | 93 | - 843 | 127 |
| | .9 | | | - 429 | 99 | - 566 | 134 | - 673 | 119 | - 833 | 167 |
| | 1.0 | | | - 422 | 112 | - 562 | 151 | - 666 | 141 | - 832 | 187 |
| | 1.1 | | | - 413 | 131 | - 548 | 172 | - 656 | 164 | - 807 | 217 |
| | 1.2 | | | - 403 | 145 | - 537 | 184 | - 641 | 188 | - 799 | 236 |

| | | 3.5db GAIN R | 3.5db GAIN X | 4.0db GAIN R | 4.0db GAIN X | 4.5db GAIN R | 4.5db GAIN X | 5.0db GAIN R | 5.0db GAIN X | 5.5db GAIN R | 5.5db GAIN X |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | .3 | - 920 | - 19 | -1187 | -278 | -1121 | - 59 | -1202 | -115 | -1360 | - 23 |
| | .4 | - 915 | + 7 | -1039 | + 18 | -1108 | - 45 | -1153 | - 43 | -1320 | 0 |
| | .6 | - 908 | 69 | -1035 | 90 | -1111 | + 27 | -1150 | + 16 | -1314 | 117 |
| | .7 | - 909 | 97 | -1026 | 147 | -1109 | 83 | -1150 | 77 | -1310 | 159 |
| | .8 | - 898 | 146 | -1016 | 178 | -1102 | 122 | -1148 | 113 | -1285 | 239 |
| | .9 | - 883 | 190 | - 998 | 232 | -1094 | 164 | -1142 | 154 | -1268 | 286 |
| | 1.0 | - 872 | 209 | - 981 | 254 | -1085 | 198 | -1124 | 208 | -1241 | 331 |
| | 1.1 | - 854 | 247 | - 969 | 280 | -1073 | 245 | -1106 | 246 | -1212 | 382 |
| | 1.2 | - 841 | 265 | - 940 | 333 | -1059 | 276 | -1085 | 280 | -1181 | 411 |

| | | 6.0db GAIN R | 6.0db GAIN X | 6.5db GAIN R | 6.5db GAIN X | 7.0db GAIN R | 7.0db GAIN X | 7.5db GAIN R | 7.5db GAIN X | 8.0db GAIN R | 8.0db GAIN X |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | .3 | -1384 | - 64 | -1491 | - 79 | -1599 | -132 | -1705 | -152 | -1855 | -150 |
| | .4 | -1377 | - 13 | -1465 | - 6 | -1580 | - 72 | -1615 | - 93 | -1695 | - 80 |
| | .6 | -1369 | +124 | -1459 | +127 | -1584 | + 58 | -1621 | + 39 | -1699 | + 60 |
| | .7 | -1357 | 190 | -1445 | 199 | -1578 | 118 | -1612 | 114 | -1692 | 135 |
| | .8 | -1339 | 241 | -1429 | 266 | -1565 | 193 | -1609 | 161 | -1680 | 189 |
| | .9 | -1298 | 330 | -1402 | 320 | -1545 | 245 | -1587 | 246 | -1667 | 255 |
| | 1.0 | -1287 | 369 | -1372 | 377 | -1524 | 302 | -1572 | 296 | -1646 | 322 |
| | 1.1 | -1237 | 421 | -1339 | 423 | -1495 | 355 | -1543 | 364 | -1619 | 383 |
| | 1.2 | -1206 | 470 | -1301 | 475 | -1460 | 416 | -1506 | 423 | -1581 | 438 |

| Net No. | Sec. | 1.0db GAIN R | 1.0db GAIN X | 1.5db GAIN R | 1.5db GAIN X | 2.0db GAIN R | 2.0db GAIN X | 2.5db GAIN R | 2.5db GAIN X | 3.0db GAIN R | 3.0db GAIN X |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2X | .3 | | | - 490 | 0 | - 645 | 0 | - 800 | - 21 | - 990 | - 28 |
| 19 DNB-B88 | .4 | | | - 487 | 11 | - 633 | 19 | - 778 | - 8 | - 933 | + 26 |
| | .6 | | | - 484 | 53 | - 630 | 67 | - 779 | + 32 | - 928 | 103 |
| | .7 | | | - 482 | 72 | - 624 | 102 | - 777 | 52 | - 922 | 126 |
| | .8 | | | - 477 | 90 | - 620 | 124 | - 779 | 72 | - 913 | 149 |
| | .9 | | | - 473 | 106 | - 608 | 154 | - 772 | 102 | - 897 | 194 |
| | 1.0 | | | - 464 | 121 | - 595 | 172 | - 768 | 119 | - 888 | 212 |
| | 1.1 | | | - 457 | 139 | - 583 | 190 | - 758 | 150 | - 864 | 256 |
| | 1.2 | | | - 446 | 150 | - 566 | 210 | - 751 | 167 | - 853 | 277 |

| | | 3.5db GAIN R | 3.5db GAIN X | 4.0db GAIN R | 4.0db GAIN X | 4.5 db GAIN R | 4.5 db GAIN X | 5.0db GAIN R | 5.0db GAIN X | 5.5db GAIN R | 5.5db GAIN X |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | .3 | -1050 | - 25 | -1140 | 0 | -1223 | - 89 | -1352 | - 92 | -1494 | -111 |
| | .4 | -1045 | + 22 | -1138 | 38 | -1246 | - 63 | -1329 | - 55 | -1475 | - 69 |
| | .6 | -1042 | 86 | -1129 | 115 | -1251 | + 23 | -1330 | + 36 | -1475 | + 43 |
| | .7 | -1042 | 86 | -1129 | 115 | -1248 | 63 | -1328 | 80 | -1474 | 97 |
| | .8 | -1034 | 149 | -1114 | 184 | -1241 | 116 | -1321 | 133 | -1467 | 148 |
| | .9 | -1011 | 206 | -1114 | 184 | -1234 | 153 | -1314 | 172 | -1455 | 195 |
| | 1.0 | -1011 | 206 | -1086 | 247 | -1223 | 202 | -1301 | 211 | -1434 | 261 |
| | 1.1 | - 988 | 257 | -1050 | 313 | -1211 | 235 | -1285 | 257 | -1409 | 311 |
| | 1.2 | - 988 | 257 | -1050 | 313 | -1193 | 276 | -1265 | 299 | -1388 | 371 |

| | | 6.0db GAIN R | 6.0db GAIN X | 6.5db GAIN R | 6.5db GAIN X | 7.0db GAIN R | 7.0db GAIN X | 7.5db GAIN R | 7.5db GAIN X | 8.0db GAIN R | 8.0db GAIN X |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | .3 | -1552 | - 68 | -1632 | - 67 | -1724 | - 57 | -1805 | - 18 | -1904 | -106 |
| | .4 | -1558 | - 49 | -1630 | - 13 | -1731 | - 44 | -1820 | - 17 | -1918 | 0 |
| | .6 | -1557 | + 68 | -1625 | +107 | -1727 | +115 | -1815 | +121 | -1912 | 97 |
| | .7 | -1552 | 131 | -1620 | 165 | -1721 | 160 | -1804 | 192 | -1912 | 97 |
| | .8 | -1541 | 177 | -1610 | 208 | -1705 | 228 | -1790 | 231 | -1893 | 207 |
| | .9 | -1529 | 232 | -1588 | 286 | -1687 | 288 | -1767 | 310 | -1893 | 207 |
| | 1.0 | -1509 | 281 | -1564 | 335 | -1666 | 349 | -1736 | 380 | -1865 | 302 |
| | 1.1 | -1485 | 337 | -1540 | 386 | -1622 | 428 | -1722 | 412 | -1825 | 399 |
| | 1.2 | -1458 | 391 | -1501 | 447 | -1606 | 444 | -1666 | 495 | -1825 | 399 |

# TABLE 2

NEGATIVE IMPEDANCE AT 1 KC FOR OTHER SECTIONS (3X AND 4X)
(USING STRAPPING CHARTS)

| Met No. | Sec. | 1.0db GAIN R | 1.0db GAIN X | 1.5db GAIN R | 1.5db GAIN X | 2.0db GAIN R | 2.0db GAIN X | 2.5db GAIN R | 2.5db GAIN X | 3.0db GAIN R | 3.0db GAIN X |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3X | .3 | | | - 387 | - 5 | - 500 | 0 | - 600 | -12 | - 700 | - 5 |
| 19 CNB-D88 | .4 | | | - 378 | + 4 | - 492 | 11 | - 594 | + 3 | - 694 | +13 |
| | .6 | | | - 378 | 44 | - 489 | 61 | - 591 | 65 | - 683 | 97 |
| | .7 | | | - 376 | 62 | - 487 | 86 | - 587 | 102 | - 674 | 131 |
| | .8 | | | - 372 | 79 | - 476 | 110 | - 571 | 136 | - 658 | 169 |
| | .9 | | | - 367 | 94 | - 470 | 125 | - 566 | 154 | - 638 | 201 |
| | 1.0 | | | - 358 | 111 | - 456 | 144 | - 544 | 182 | - 616 | 226 |
| | 1.1 | | | - 350 | 125 | - 443 | 164 | - 524 | 209 | - 594 | 254 |
| | 1.2 | | | - 341 | 137 | - 434 | 178 | - 512 | 221 | - 566 | 277 |

| | | 3.5db GAIN R | 3.5db GAIN X | 4.0db GAIN R | 4.0db GAIN X | 4.5db GAIN R | 4.5db GAIN X | 5.0db GAIN R | 5.0db GAIN X | 5.5db GAIN R | 5.5db GAIN X |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | .3 | - 800 | - 31 | - 900 | -30 | - 970 | -19 | -1011 | -45 | -1102 | -86 |
| | .4 | - 793 | - 17 | - 866 | 0 | - 958 | 0 | -1020 | 0 | -1077 | -43 |
| | .6 | - 791 | + 71 | - 862 | 86 | - 944 | 114 | -1010 | 110 | -1075 | +97 |
| | .7 | - 787 | 107 | - 849 | 151 | - 929 | 179 | - 996 | 161 | -1068 | 147 |
| | .8 | - 777 | 140 | - 833 | 186 | - 906 | 225 | - 971 | 223 | -1050 | 203 |
| | .9 | - 756 | 186 | - 814 | 223 | - 868 | 286 | - 944 | 270 | -1004 | 290 |
| | 1.0 | - 741 | 215 | - 792 | 256 | - 843 | 321 | - 913 | 317 | -1004 | 290 |
| | 1.1 | - 724 | 243 | - 768 | 288 | - 811 | 351 | - 881 | 354 | - 969 | 340 |
| | 1.2 | - 706 | 267 | - 730 | 322 | - 776 | 381 | - 845 | 387 | - 933 | 388 |

| | | 6.0db GAIN R | 6.0db GAIN X | 6.5db GAIN R | 6.5db GAIN X | 7.0db GAIN R | 7.0db GAIN X | 7.5db GAIN R | 7.5db GAIN X | 8.0db GAIN R | 8.0db GAIN X |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | .3 | -1202 | -115 | -1211 | -44 | -1310 | -45 | -1326 | -111 | -1412 | -93 |
| | .4 | -1168 | - 45 | -1210 | + 5 | -1256 | -17 | -1323 | - 69 | -1413 | -40 |
| | .6 | -1170 | + 82 | -1206 | 94 | -1247 | +114 | -1323 | + 93 | -1401 | +139 |
| | .7 | -1157 | 153 | -1195 | 161 | -1238 | 156 | -1316 | 143 | -1389 | 194 |
| | .8 | -1143 | 206 | -1177 | 214 | -1225 | 200 | -1302 | 198 | -1374 | 249 |
| | .9 | -1119 | 257 | -1151 | 276 | -1196 | 282 | -1273 | 265 | -1328 | 346 |
| | 1.0 | -1094 | 308 | -1124 | 321 | -1173 | 316 | -1247 | 325 | -1303 | 395 |
| | 1.1 | -1051 | 367 | -1078 | 383 | -1125 | 388 | -1206 | 379 | -1235 | 468 |
| | 1.2 | -1033 | 392 | -1051 | 404 | -1096 | 416 | -1122 | 479 | -1191 | 509 |

| | | 1.0db GAIN R | 1.0db GAIN X | 1.5db GAIN R | 1.5db GAIN X | 2.0db GAIN R | 2.0db GAIN X | 2.5db GAIN R | 2.5db GAIN X | 3.0db GAIN R | 3.0db GAIN X |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4X | .3 | | | - 447 | - 5 | - 552 | - 13 | - 681 | - 46 | - 800 | - 28 |
| 19 DNB-D88 | .4 | | | - 439 | + 9 | - 537 | + 11 | - 633 | - 14 | - 728 | - 6 |
| | .6 | | | - 435 | 54 | - 537 | 52 | - 636 | + 33 | - 727 | + 51 |
| | .7 | | | - 430 | 75 | - 535 | 74 | - 635 | 55 | - 729 | 82 |
| | .8 | | | - 429 | 88 | - 528 | 96 | - 631 | 88 | - 721 | 110 |
| | .9 | | | - 423 | 106 | - 522 | 115 | - 625 | 108 | - 716 | 138 |
| | 1.0 | | | - 415 | 124 | - 516 | 131 | - 621 | 127 | - 705 | 163 |
| | 1.1 | | | - 403 | 140 | - 506 | 149 | - 610 | 149 | - 693 | 188 |
| | 1.2 | | | - 400 | 145 | - 490 | 170 | - 602 | 169 | - 677 | 215 |

| | | 3.5db GAIN R | 3.5db GAIN X | 4.0db GAIN R | 4.0db GAIN X | 4.5db GAIN R | 4.5db GAIN X | 5.0db GAIN R | 5.0db GAIN X | 5.5db GAIN R | 5.5db GAIN X |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | .3 | - 870 | - 14 | - 991 | -42 | -1102 | -101 | -1201 | - 49 | -1222 | -107 |
| | .4 | - 856 | + 24 | - 956 | -25 | -1041 | - 37 | -1150 | - 4 | -1212 | - 50 |
| | .6 | - 848 | 111 | - 955 | +80 | -1040 | + 58 | -1142 | +103 | -1215 | + 53 |
| | .7 | - 839 | 148 | - 951 | 105 | -1038 | 89 | -1125 | 162 | -1208 | 107 |
| | .8 | - 824 | 185 | - 943 | 155 | -1029 | 143 | -1104 | 219 | -1193 | 180 |
| | .9 | - 806 | 218 | - 933 | 177 | -1020 | 174 | -1088 | 266 | -1182 | 214 |
| | 1.0 | - 791 | 251 | - 909 | 226 | -1002 | 211 | -1056 | 321 | -1158 | 269 |
| | 1.1 | - 766 | 276 | - 884 | 261 | - 986 | 251 | -1025 | 365 | -1141 | 305 |
| | 1.2 | - 741 | 303 | - 878 | 290 | - 959 | 287 | - 976 | 410 | -1104 | 352 |

| | | 6.0db GAIN R | 6.0db GAIN X | 6.5db GAIN R | 6.5db GAIN X | 7.0db GAIN R | 7.0db GAIN X | 7.5db GAIN R | 7.5db GAIN X | 8.0db GAIN R | 8.0db GAIN X |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | .3 | -1274 | -121 | -1401 | -61 | -1410 | - 45 | -1485 | - 35 | -1550 | - 41 |
| | .4 | -1248 | - 49 | -1391 | -25 | -1422 | - 29 | -1466 | - 33 | -1560 | - 5 |
| | .6 | -1250 | + 63 | -1386 | +89 | -1421 | + 85 | -1466 | + 83 | -1553 | +118 |
| | .7 | -1242 | 132 | -1373 | 151 | -1411 | 145 | -1456 | 142 | -1542 | 191 |
| | .8 | -1233 | 176 | -1346 | 243 | -1389 | 218 | -1443 | 188 | -1521 | 247 |
| | .9 | -1218 | 220 | -1328 | 291 | -1372 | 270 | -1427 | 254 | -1478 | 354 |
| | 1.0 | -1204 | 269 | -1307 | 333 | -1346 | 319 | -1405 | 310 | -1472 | 366 |
| | 1.1 | -1175 | 320 | -1280 | 381 | -1327 | 360 | -1377 | 359 | -1417 | 453 |
| | 1.2 | -1154 | 356 | -1248 | 427 | -1295 | 412 | -1348 | 398 | -1384 | 496 |

# TABLE 2

NEGATIVE IMPEDANCE AT 1 KC FOR OTHER SECTIONS (5X AND 6X)
(USING STRAPPING CHARTS)

| Net No. | Sec. | 1.0db GAIN R | 1.0db GAIN X | 1.5db GAIN R | 1.5db GAIN X | 2.0db GAIN R | 2.0db GAIN X | 2.5db GAIN R | 2.5db GAIN X | 3.0db GAIN R | 3.0db GAIN X |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 5X | .3 | | | - 361 | - 39 | - 420 | - 21 | - 508 | - 21 | - 632 | - 61 |
| 19 CNB-H88 | .4 | | | - 338 | - 11 | - 415 | 0 | - 505 | + 3 | - 616 | + 20 |
| | .6 | | | - 337 | + 48 | - 415 | 43 | - 502 | 64 | - 614 | 92 |
| | .7 | | | - 333 | 68 | - 417 | 73 | - 492 | 94 | - 605 | 128 |
| | .8 | | | - 328 | 83 | - 409 | 86 | - 486 | 115 | - 590 | 163 |
| | .9 | | | - 318 | 101 | - 401 | 109 | - 471 | 143 | - 571 | 190 |
| | 1.0 | | | - 311 | 113 | - 393 | 124 | - 458 | 164 | - 557 | 212 |
| | 1.1 | | | - 299 | 126 | - 386 | 136 | - 440 | 183 | - 539 | 234 |
| | 1.2 | | | - 290 | 136 | - 368 | 158 | - 423 | 201 | - 509 | 254 |

| | | 3.5db GAIN R | 3.5db GAIN X | 4.0db GAIN R | 4.0db GAIN X | 4.5db GAIN R | 4.5db GAIN X | 5.0db GAIN R | 5.0db GAIN X | 5.5db GAIN R | 5.5db GAIN X |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | .3 | - 710 | - 33 | - 750 | - 14 | - 851 | - 60 | - 941 | - 52 | - 951 | - 58 |
| | .4 | - 702 | - 3 | - 754 | - 9 | - 837 | 0 | - 931 | - 16 | - 941 | - 10 |
| | .6 | - 702 | + 72 | - 752 | + 78 | - 828 | 102 | - 931 | + 77 | - 937 | + 97 |
| | .7 | - 692 | 112 | - 743 | 123 | - 818 | 156 | - 919 | 126 | - 925 | 147 |
| | .8 | - 677 | 150 | - 732 | 154 | - 801 | 192 | - 898 | 196 | - 902 | 205 |
| | .9 | - 664 | 185 | - 709 | 195 | - 783 | 224 | - 877 | 236 | - 880 | 250 |
| | 1.0 | - 640 | 219 | - 685 | 230 | - 744 | 284 | - 848 | 280 | - 855 | 289 |
| | 1.1 | - 618 | 245 | - 664 | 262 | - 724 | 306 | - 822 | 312 | - 831 | 323 |
| | 1.2 | - 593 | 272 | - 631 | 288 | - 697 | 332 | - 795 | 340 | - 797 | 348 |

| | | 6.0db GAIN R | 6.0db GAIN X | 6.5db GAIN R | 6.5db GAIN X | 7.0db GAIN R | 7.0db GAIN X | 7.5db GAIN R | 7.5db GAIN X | 8.0db GAIN R | 8.0db GAIN X |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | .3 | -1022 | - 86 | -1103 | -142 | -1155 | -129 | -1203 | -150 | -1304 | -219 |
| | .4 | -1031 | - 33 | -1073 | - 61 | -1138 | - 79 | -1181 | - 37 | -1253 | - 82 |
| | .6 | -1027 | + 83 | -1076 | + 76 | -1142 | + 99 | -1167 | + 93 | -1247 | + 61 |
| | .7 | -1021 | 154 | -1066 | 139 | -1126 | 168 | -1149 | 157 | -1227 | 142 |
| | .8 | -1001 | 207 | -1047 | 203 | -1120 | 202 | -1133 | 216 | -1216 | 199 |
| | .9 | - 974 | 256 | -1019 | 264 | -1082 | 271 | -1097 | 291 | -1194 | 257 |
| | 1.0 | - 948 | 304 | - 990 | 314 | -1051 | 321 | -1062 | 350 | -1166 | 322 |
| | 1.1 | - 914 | 345 | - 957 | 361 | -1017 | 377 | -1018 | 396 | -1122 | 389 |
| | 1.2 | - 873 | 377 | - 915 | 399 | - 966 | 421 | - 969 | 446 | -1097 | 417 |

| Net No. | Sec. | 1.0db GAIN R | 1.0db GAIN X | 1.5db GAIN R | 1.5db GAIN X | 2.0db GAIN R | 2.0db GAIN X | 2.5db GAIN R | 2.5db GAIN X | 3.0db GAIN R | 3.0db GAIN X |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 6X | .3 | | | - 371 | - 2 | - 454 | - 4 | - 551 | - 31 | - 700 | - 21 |
| 19 DNB-H88 | .4 | | | - 379 | 0 | - 454 | - 2 | - 557 | 0 | - 695 | 0 |
| | .6 | | | - 380 | 45 | - 456 | + 33 | - 555 | 60 | - 687 | 86 |
| | .7 | | | - 376 | 64 | - 454 | 55 | - 549 | 93 | - 680 | 122 |
| | .8 | | | - 370 | 82 | - 452 | 79 | - 539 | 126 | - 670 | 147 |
| | .9 | | | - 362 | 91 | - 446 | 99 | - 529 | 154 | - 651 | 182 |
| | 1.0 | | | - 354 | 110 | - 435 | 117 | - 507 | 176 | - 631 | 210 |
| | 1.1 | | | - 341 | 125 | - 428 | 133 | - 486 | 199 | - 610 | 239 |
| | 1.2 | | | - 335 | 137 | - 416 | 150 | - 468 | 211 | - 586 | 264 |

| | | 3.5db GAIN R | 3.5db GAIN X | 4.0db GAIN R | 4.0db GAIN X | 4.5db GAIN R | 4.5db GAIN X | 5.0db GAIN R | 5.0db GAIN X | 5.5db GAIN R | 5.5db GAIN X |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | .3 | - 762 | - 59 | - 901 | - 65 | - 955 | -143 | -1053 | -128 | -1105 | -162 |
| | .4 | - 752 | - 33 | - 870 | + 8 | - 922 | - 33 | -1017 | - 29 | -1052 | -152 |
| | .6 | - 759 | + 68 | - 869 | 88 | - 925 | + 63 | -1016 | + 78 | -1050 | + 83 |
| | .7 | - 757 | 98 | - 860 | 133 | - 917 | 110 | -1011 | 126 | -1045 | 119 |
| | .8 | - 743 | 145 | - 838 | 191 | - 916 | 151 | - 998 | 170 | -1032 | 171 |
| | .9 | - 730 | 171 | - 820 | 224 | - 891 | 210 | - 977 | 223 | -1019 | 211 |
| | 1.0 | - 709 | 212 | - 797 | 257 | - 867 | 250 | - 953 | 276 | -1000 | 251 |
| | 1.1 | - 689 | 236 | - 766 | 290 | - 867 | 250 | - 923 | 316 | - 960 | 313 |
| | 1.2 | - 663 | 267 | - 752 | 310 | - 845 | 290 | - 889 | 358 | - 960 | 313 |

| | | 6.0db GAIN R | 6.0db GAIN X | 6.5db GAIN R | 6.5db GAIN X | 7.0db GAIN R | 7.0db GAIN X | 7.5db GAIN R | 7.5db GAIN X | 8.0db GAIN R | 8.0db GAIN X |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | .3 | -1182 | - 95 | -1206 | - 45 | -1282 | - 95 | -1471 | -458 | -1418 | -236 |
| | .4 | -1160 | + 18 | -1210 | + 10 | -1261 | - 23 | -1306 | -142 | -1385 | - 45 |
| | .6 | -1147 | 148 | -1216 | 98 | -1249 | +131 | -1287 | + 87 | -1375 | +136 |
| | .7 | -1132 | 204 | -1202 | 164 | -1241 | 176 | -1273 | 168 | -1360 | 189 |
| | .8 | -1106 | 256 | -1181 | 225 | -1224 | 248 | -1262 | 214 | -1338 | 246 |
| | .9 | -1069 | 325 | -1162 | 282 | -1197 | 302 | -1243 | 266 | -1309 | 317 |
| | 1.0 | -1034 | 378 | -1137 | 336 | -1164 | 359 | -1220 | 313 | -1274 | 383 |
| | 1.1 | - 987 | 423 | -1118 | 356 | -1155 | 389 | -1186 | 362 | -1236 | 439 |
| | 1.2 | - 937 | 464 | -1068 | 417 | -1095 | 443 | -1163 | 402 | -1199 | 472 |

# TABLE 2

NEGATIVE IMPEDANCE AT 1 KC FOR OTHER SECTIONS (7X AND 8X)
(USING STRAPPING CHARTS)

| Net No. | Sec. | 1.0db GAIN R | 1.0db GAIN X | 1.5db GAIN R | 1.5db GAIN X | 2.0db GAIN R | 2.0db GAIN X | 2.5db GAIN R | 2.5db GAIN X | 3.0db GAIN R | 3.0db GAIN X |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7X | .3 | | | - 301 | - 35 | - 400 | - 28 | - 500 | 0 | - 580 | - 20 |
| 19 DNB-M88 | .4 | | | - 295 | + 7 | - 380 | + 8 | - 495 | 22 | - 551 | + 24 |
| | .6 | | | - 294 | 42 | - 380 | 51 | - 483 | 100 | - 538 | 107 |
| | .7 | | | - 291 | 60 | - 375 | 72 | - 466 | 135 | - 530 | 139 |
| | .8 | | | - 285 | 77 | - 369 | 92 | - 448 | 163 | - 507 | 178 |
| | .9 | | | - 279 | 91 | - 359 | 112 | - 434 | 179 | - 488 | 199 |
| | 1.0 | | | - 273 | 106 | - 350 | 127 | - 409 | 204 | - 472 | 218 |
| | 1.1 | | | - 262 | 116 | - 336 | 142 | - 384 | 221 | - 440 | 243 |
| | 1.2 | | | - | | - 323 | 159 | - 363 | 236 | - 407 | 262 |

| | | 3.5db GAIN R | 3.5db GAIN X | 4.0db GAIN R | 4.0db GAIN X | 4.5db GAIN R | 4.5db GAIN X | 5.0db GAIN R | 5.0db GAIN X | 5.5db GAIN R | 5.5db GAIN X |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | .3 | - 701 | - 50 | - 700 | - 12 | - 780 | - 3 | - 890 | - 18 | - 901 | - 59 |
| | .4 | - 641 | + 27 | - 719 | + 24 | - 776 | + 20 | - 865 | + 12 | - 872 | - 23 |
| | .6 | - 631 | 119 | - 698 | 78 | - 752 | 146 | - 851 | 125 | - 874 | + 85 |
| | .7 | - 616 | 158 | - 687 | 120 | - 733 | 194 | - 839 | 164 | - 861 | 139 |
| | .8 | - 595 | 198 | - 667 | 168 | - 701 | 247 | - 813 | 219 | - 843 | 201 |
| | .9 | - 570 | 227 | - 652 | 201 | - 671 | 276 | - 790 | 255 | - 810 | 252 |
| | 1.0 | - 537 | 249 | - 633 | 228 | - 628 | 312 | - 759 | 298 | - 791 | 283 |
| | 1.1 | - 513 | 271 | - 606 | 256 | - 582 | 341 | - 718 | 336 | - 752 | 327 |
| | 1.2 | - 481 | 294 | - 580 | 281 | - 551 | 364 | - 695 | 357 | - 724 | 356 |

| | | 6.0db GAIN R | 6.0db GAIN X | 6.5db GAIN R | 6.5db GAIN X | 7.0db GAIN R | 7.0db GAIN X | 7.5db GAIN R | 7.5db GAIN X | 8.0db GAIN R | 8.0db GAIN X |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | .3 | -1001 | - 56 | -1102 | -129 | -1102 | -119 | -1185 | -189 | -1192 | - 89 |
| | .4 | - 977 | - 8 | -1005 | - 14 | -1053 | - 39 | -1075 | - 37 | -1136 | - 23 |
| | .6 | - 968 | +123 | - 998 | +105 | -1033 | +122 | -1074 | + 99 | -1124 | +148 |
| | .7 | - 957 | 167 | - 977 | 193 | -1016 | 184 | -1058 | 175 | -1105 | 210 |
| | .8 | - 916 | 260 | - 954 | 242 | - 996 | 243 | -1034 | 238 | -1065 | 290 |
| | .9 | - 893 | 301 | - 913 | 313 | - 965 | 291 | -1004 | 296 | -1027 | 349 |
| | 1.0 | - 856 | 338 | - 880 | 355 | - 932 | 336 | - 970 | 342 | - 982 | 394 |
| | 1.1 | - 826 | 374 | - 846 | 386 | - 901 | 375 | - 910 | 407 | - 922 | 463 |
| | 1.2 | - 788 | 405 | - 788 | 427 | - 864 | 411 | - 868 | 441 | - 870 | 489 |

| | | 1.0db GAIN R | 1.0db GAIN X | 1.5db GAIN R | 1.5db GAIN X | 2.0db GAIN R | 2.0db GAIN X | 2.5db GAIN R | 2.5db GAIN X | 3.0db GAIN R | 3.0db GAIN X |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 8X | .3 | - 390 | - 2 | - 552 | - 26 | - 711 | - 46 | - 912 | -108 | -1012 | - 23 |
| 19 CNB-B135 | .4 | - 390 | + 6 | - 545 | - 11 | - 709 | - 27 | - 864 | - 21 | -1013 | 0 |
| | .6 | - 388 | 42 | - 547 | + 40 | - 713 | + 40 | - 865 | + 66 | -1004 | 126 |
| | .7 | - 385 | 61 | - 545 | 66 | - 711 | 71 | - 857 | 110 | - 985 | 166 |
| | .8 | - 383 | 76 | - 539 | 95 | - 700 | 113 | - 850 | 150 | - 962 | 242 |
| | .9 | - 378 | 95 | - 533 | 119 | - 693 | 140 | - 836 | 189 | - 940 | 288 |
| | 1.0 | - 371 | 109 | - 520 | 140 | - 683 | 164 | - 818 | 226 | - 907 | 329 |
| | 1.1 | - 366 | 120 | - 514 | 159 | - 663 | 199 | - 799 | 262 | - 925 | 308 |
| | 1.2 | - 356 | 138 | - 500 | 180 | - 650 | 223 | - 783 | 299 | - 838 | 398 |

| | | 3.5db GAIN R | 3.5db GAIN X | 4.0db GAIN R | 4.0db GAIN X | 4.5db GAIN R | 4.5db GAIN X | 5.0db GAIN R | 5.0db GAIN X | 5.5db GAIN R | 5.5db GAIN X |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | .3 | -1175 | - 90 | -1303 | - 61 | -1400 | - 37 | -1561 | - 77 | -1601 | - 84 |
| | .4 | -1180 | - 14 | -1307 | - 31 | -1390 | - 18 | -1544 | - 50 | -1592 | - 65 |
| | .6 | -1174 | + 97 | -1298 | +114 | -1376 | +131 | -1544 | + 79 | -1591 | + 63 |
| | .7 | -1167 | 138 | -1288 | 166 | -1364 | 200 | -1535 | 163 | -1583 | 141 |
| | .8 | -1149 | 211 | -1257 | 252 | -1336 | 281 | -1496 | 277 | -1563 | 230 |
| | .9 | -1133 | 252 | -1241 | 298 | -1304 | 347 | -1474 | 335 | -1533 | 308 |
| | 1.0 | -1095 | 318 | -1192 | 375 | -1264 | 397 | -1450 | 384 | -1486 | 407 |
| | 1.1 | -1055 | 379 | -1163 | 416 | -1228 | 453 | -1411 | 443 | -1458 | 449 |
| | 1.2 | -1028 | 402 | -1129 | 451 | -1171 | 501 | -1370 | 502 | -1412 | 505 |

| | | 6.0db GAIN R | 6.0db GAIN X | 6.5db GAIN R | 6.5db GAIN X | 7.0db GAIN R | 7.0db GAIN X | 7.5db GAIN R | 7.5db GAIN X | 8.0db GAIN R | 8.0db GAIN X |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | .3 | -1803 | -163 | -1803 | -132 | -2003 | -175 | | | | |
| | .4 | -1768 | -114 | -1806 | -119 | -1952 | -127 | | | | |
| | .6 | -1766 | + 72 | -1813 | + 72 | -1962 | + 71 | | | | |
| | .7 | -1755 | 164 | -1802 | 166 | -1948 | 167 | | | | |
| | .8 | -1730 | 260 | -1775 | 268 | -1919 | 281 | | | | |
| | .9 | -1697 | 343 | -1743 | 354 | -1893 | 367 | | | | |
| | 1.0 | -1666 | 424 | -1706 | 435 | -1854 | 454 | | | | |
| | 1.1 | -1622 | 502 | -1663 | 509 | -1816 | 534 | | | | |
| | 1.2 | -1568 | 563 | -1609 | 580 | -1746 | 615 | | | | |

# TABLE 2

NEGATIVE IMPEDANCE AT 1 KC FOR OTHER SECTIONS (9X AND 10X)
(USING STRAPPING CHARTS)

| Net No. | Sec. | 1.0db GAIN R | 1.0db GAIN X | 1.5db GAIN R | 1.5db GAIN X | 2.0db GAIN R | 2.0db GAIN X | 2.5db GAIN R | 2.5db GAIN X | 3.0db GAIN R | 3.0db GAIN X |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 9X | .3 | - 450 | - 10 | - 640 | 0 | - 810 | - 31 | - 991 | - 46 | -1156 | - 29 |
| 19 DNB-B135 | .4 | - 438 | + 7 | - 630 | 10 | - 795 | 0 | - 971 | - 24 | -1150 | - 9 |
| | .6 | - 434 | 37 | - 623 | 85 | - 792 | 72 | - 973 | + 54 | -1142 | +107 |
| | .7 | - 433 | 48 | - 616 | 126 | - 782 | 123 | - 970 | 84 | -1136 | 142 |
| | .8 | - 430 | 75 | - 603 | 145 | - 770 | 157 | - 956 | 135 | -1114 | 215 |
| | .9 | - 426 | 94 | - 586 | 181 | - 753 | 204 | - 951 | 159 | -1103 | 249 |
| | 1.0 | - 420 | 108 | - 562 | 213 | - 734 | 230 | - 932 | 209 | -1088 | 281 |
| | 1.1 | - 415 | 121 | - 549 | 228 | - 714 | 258 | - 911 | 256 | -1054 | 346 |
| | 1.2 | - 401 | 136 | - 544 | 254 | - 664 | 314 | - 898 | 277 | -1021 | 367 |

| | | 3.5db GAIN R | 3.5db GAIN X | 4.0db GAIN R | 4.0db GAIN X | 4.5db GAIN R | 4.5db GAIN X | 5.0db GAIN R | 5.0db GAIN X | 5.5db GAIN R | 5.5db GAIN X |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | .3 | -1302 | - 84 | -1542 | -114 | -1511 | - 78 | -1703 | -173 | -1809 | -178 |
| | .4 | -1294 | - 42 | -1455 | + 52 | -1534 | - 70 | -1691 | -116 | -1807 | -147 |
| | .6 | -1279 | +117 | -1422 | 241 | -1532 | + 51 | -1699 | + 26 | -1830 | + 6 |
| | .7 | -1254 | 209 | -1403 | 297 | -1528 | 144 | -1696 | 100 | -1826 | 85 |
| | .8 | -1241 | 253 | -1384 | 351 | -1511 | 218 | -1680 | 177 | -1816 | 149 |
| | .9 | -1220 | 293 | -1320 | 448 | -1486 | 279 | -1654 | 280 | -1803 | 230 |
| | 1.0 | -1179 | 370 | -1288 | 487 | -1457 | 339 | -1626 | 355 | -1782 | 309 |
| | 1.1 | -1151 | 408 | -1207 | 563 | -1422 | 412 | -1590 | 424 | -1752 | 381 |
| | 1.2 | -1124 | 444 | -1165 | 595 | -1381 | 458 | -1553 | 471 | -1710 | 452 |

| | | 6.0db GAIN R | 6.0db GAIN X | 6.5db GAIN R | 6.5db GAIN X | 7.0db GAIN R | 7.0db GAIN X | 7.5db GAIN R | 7.5db GAIN X | 8.0db GAIN R | 8.0db GAIN X |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | .3 | -2002 | -119 | | | | | | | | |
| | .4 | -1940 | -119 | | | | | | | | |
| | .6 | -1945 | + 58 | | | | | | | | |
| | .7 | -1938 | 142 | | | | | | | | |
| | .8 | -1919 | 241 | | | | | | | | |
| | .9 | -1898 | 321 | | | | | | | | |
| | 1.0 | -1864 | 397 | | | | | | | | |
| | 1.1 | -1827 | 467 | | | | | | | | |
| | 1.2 | -1774 | 563 | | | | | | | | |

| | | 1.0db GAIN R | 1.0db GAIN X | 1.5db GAIN R | 1.5db GAIN X | 2.0db GAIN R | 2.0db GAIN X | 2.5db GAIN R | 2.5db GAIN X | 3.0db GAIN R | 3.0db GAIN X |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10X | .3 | - 322 | - 13 | - 570 | - 6 | - 610 | - 9 | - 780 | - 5 | - 831 | - 30 |
| 19 CNB-D135 | .4 | - 320 | + 6 | - 453 | 0 | - 604 | 0 | - 759 | - 8 | - 823 | - 31 |
| | .6 | - 324 | 38 | - 454 | 35 | - 598 | 81 | - 756 | + 79 | - 829 | + 83 |
| | .7 | - 322 | 57 | - 450 | 67 | - 588 | 118 | - 745 | 124 | - 821 | 123 |
| | .8 | - 319 | 74 | - 446 | 92 | - 566 | 162 | - 728 | 168 | - 798 | 195 |
| | .9 | - 317 | 81 | - 438 | 110 | - 546 | 193 | - 707 | 209 | - 779 | 229 |
| | 1.0 | - 305 | 104 | - 422 | 135 | - 525 | 219 | - 681 | 245 | - 734 | 285 |
| | 1.1 | - 295 | 117 | - 410 | 154 | - 499 | 242 | - 648 | 277 | - 708 | 305 |
| | 1.2 | - 284 | 127 | - 398 | 177 | - 473 | 264 | - 617 | 302 | - 688 | 335 |

| | | 3.5db GAIN R | 3.5db GAIN X | 4.0db GAIN R | 4.0db GAIN X | 4.5db GAIN R | 4.5db GAIN X | 5.0db GAIN R | 5.0db GAIN X | 5.5db GAIN R | 5.5db GAIN X |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | .3 | - 950 | - 28 | -1100 | - 8 | -1211 | - 80 | -1302 | - 94 | -1404 | -150 |
| | .4 | - 952 | 0 | -1077 | - 22 | -1199 | - 50 | -1285 | - 66 | -1393 | -100 |
| | .6 | - 931 | 145 | -1071 | +110 | -1195 | +112 | -1282 | +101 | -1399 | + 86 |
| | .7 | - 914 | 193 | -1043 | 208 | -1180 | 185 | -1264 | 193 | -1380 | 186 |
| | .8 | - 869 | 278 | -1013 | 272 | -1145 | 277 | -1241 | 264 | -1353 | 267 |
| | .9 | - 840 | 318 | - 983 | 322 | -1109 | 343 | -1199 | 335 | -1326 | 335 |
| | 1.0 | - 779 | 379 | - 945 | 368 | -1065 | 403 | -1157 | 409 | -1277 | 408 |
| | 1.1 | - 745 | 403 | - 904 | 408 | -1016 | 448 | -1098 | 471 | -1214 | 478 |
| | 1.2 | - 698 | 429 | - 838 | 455 | - 964 | 496 | -1035 | 520 | -1144 | 547 |

| | | 6.0db GAIN R | 6.0db GAIN X | 6.5db GAIN R | 6.5db GAIN X | 7.0db GAIN R | 7.0db GAIN X | 7.5db GAIN R | 7.5db GAIN X | 8.0db GAIN R | 8.0db GAIN X |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | .3 | -1504 | -157 | -1602 | -113 | -1686 | -201 | -1706 | -160 | -1700 | - 6 |
| | .4 | -1446 | -116 | -1572 | - 24 | -1623 | - 91 | -1700 | + 10 | -1720 | - 2 |
| | .6 | -1455 | +113 | -1552 | +199 | -1627 | +143 | -1682 | 189 | -1711 | +118 |
| | .7 | -1441 | 171 | -1507 | 333 | -1602 | 230 | -1640 | 333 | -1680 | 232 |
| | .8 | -1415 | 266 | -1445 | 450 | -1563 | 342 | -1599 | 419 | -1632 | 368 |
| | .9 | -1380 | 343 | -1396 | 496 | -1510 | 442 | -1538 | 513 | -1593 | 424 |
| | 1.0 | -1331 | 425 | -1351 | 548 | -1459 | 519 | -1465 | 598 | -1524 | 524 |
| | 1.1 | -1278 | 494 | -1261 | 627 | -1381 | 597 | -1357 | 702 | -1476 | 578 |
| | 1.2 | -1202 | 563 | -1179 | 697 | -1293 | 678 | -1298 | 727 | -1411 | 654 |

# TABLE 2

NEGATIVE IMPEDANCE AT 1 KC FOR OTHER SECTIONS (11X AND 12X)
(USING STRAPPING CHARTS)

| Net No. | Sec. | 1.0db GAIN R | 1.0db GAIN X | 1.5db GAIN R | 1.5db GAIN X | 2.0db GAIN R | 2.0db GAIN X | 2.5db GAIN R | 2.5db GAIN X | 3.0db GAIN R | 3.0db GAIN X |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 11X | .3 | - 370 | 0 | - 552 | - 13 | - 700 | - 23 | - 800 | - 13 | -1012 | - 87 |
| 19 DNB-D135 | .4 | - 355 | 2 | - 541 | + 14 | - 705 | - 3 | - 802 | - 3 | - 971 | - 23 |
| | .6 | - 356 | 30 | - 537 | 79 | - 701 | + 95 | - 797 | + 82 | - 962 | + 92 |
| | .7 | - 353 | 44 | - 526 | 109 | - 690 | 124 | - 786 | 134 | - 958 | 149 |
| | .8 | - 353 | 61 | - 511 | 145 | - 673 | 165 | - 768 | 182 | - 938 | 192 |
| | .9 | - 348 | 76 | - 495 | 169 | - 658 | 196 | - 747 | 212 | - 916 | 235 |
| | 1.0 | - 343 | 92 | - 479 | 188 | - 634 | 227 | - 722 | 255 | - 895 | 278 |
| | 1.1 | - 335 | 105 | - 461 | 213 | - 612 | 255 | - 693 | 286 | - 865 | 316 |
| | 1.2 | - 329 | 121 | - 440 | 231 | - 588 | 279 | - 673 | 314 | - 831 | 353 |

| | | 3.5db GAIN R | 3.5db GAIN X | 4.0db GAIN R | 4.0db GAIN X | 4.5db GAIN R | 4.5db GAIN X | 5.0db GAIN R | 5.0db GAIN X | 5.5db GAIN R | 5.5db GAIN X |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | .3 | -1102 | - 83 | -1203 | -104 | -1324 | -125 | -1422 | - 90 | -1516 | -174 |
| | .4 | -1060 | - 12 | -1188 | - 53 | -1318 | - 73 | -1402 | - 52 | -1530 | -137 |
| | .6 | -1051 | +118 | -1191 | + 77 | -1314 | +110 | -1394 | +133 | -1541 | + 32 |
| | .7 | -1038 | 177 | -1187 | 115 | -1303 | 167 | -1380 | 185 | -1531 | 131 |
| | .8 | -1015 | 236 | -1167 | 194 | -1286 | 238 | -1361 | 246 | -1513 | 207 |
| | .9 | - 987 | 291 | -1140 | 269 | -1254 | 309 | -1337 | 327 | -1477 | 307 |
| | 1.0 | - 953 | 340 | -1122 | 308 | -1218 | 374 | -1297 | 389 | -1449 | 371 |
| | 1.1 | - 918 | 382 | -1079 | 370 | -1175 | 428 | -1260 | 448 | -1410 | 430 |
| | 1.2 | - 874 | 418 | -1054 | 398 | -1118 | 489 | -1190 | 519 | -1358 | 504 |

| | | 6.0db GAIN R | 6.0db GAIN X | 6.5db GAIN R | 6.5db GAIN X | 7.0db GAIN R | 7.0db GAIN X | 7.5db GAIN R | 7.5db GAIN X | 8.0db GAIN R | 8.0db GAIN X |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | .3 | -1683 | -151 | | - | -1807 | -193 | -1907 | -202 | -2000 | - 24 |
| | .4 | -1601 | - 92 | -1703 | -127 | -1788 | -110 | -1873 | - 82 | -1945 | - 58 |
| | .6 | -1604 | + 59 | -1699 | +134 | -1792 | +120 | -1877 | +134 | -1938 | +165 |
| | .7 | -1598 | 153 | -1682 | 215 | -1777 | 194 | -1846 | 246 | -1910 | 280 |
| | .8 | -1565 | 273 | -1628 | 372 | -1732 | 349 | -1791 | 410 | -1855 | 402 |
| | .9 | -1540 | 339 | -1593 | 445 | -1695 | 423 | -1750 | 490 | -1814 | 504 |
| | 1.0 | -1515 | 399 | -1549 | 509 | -1643 | 519 | -1704 | 556 | -1764 | 582 |
| | 1.1 | -1476 | 464 | -1503 | 562 | -1581 | 598 | -1635 | 632 | -1711 | 654 |
| | 1.2 | -1430 | 517 | -1453 | 618 | -1516 | 654 | -1571 | 701 | -1628 | 715 |

| Net No. | Sec. | 1.0db GAIN R | 1.0db GAIN X | 1.5db GAIN R | 1.5db GAIN X | 2.0db GAIN R | 2.0db GAIN X | 2.5db GAIN R | 2.5db GAIN X | 3.0db GAIN R | 3.0db GAIN X |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 12X | .3 | | | - 416 | - 3 | - 531 | - 34 | - 635 | - 60 | - 790 | - 34 |
| 19 CNB-H135 | .4 | | | - 416 | + 10 | - 530 | 0 | - 637 | - 25 | - 755 | + 9 |
| | .6 | | | - 403 | 94 | - 517 | 97 | - 639 | + 90 | - 741 | 136 |
| | .7 | | | - 389 | 124 | - 498 | 143 | - 627 | 129 | - 716 | 192 |
| | .8 | | | - 371 | 146 | - 477 | 177 | - 604 | 177 | - 682 | 240 |
| | .9 | | | - 349 | 170 | - 446 | 211 | - 580 | 212 | - 646 | 281 |
| | 1.0 | | | - 324 | 187 | - 420 | 231 | - 565 | 229 | - 611 | 315 |
| | 1.1 | | | - 298 | 202 | - 389 | 248 | - 508 | 267 | - 567 | 339 |
| | 1.2 | | | | - | - 369 | 259 | - 485 | 292 | - 525 | 358 |

| | | 3.5db GAIN R | 3.5db GAIN X | 4.0db GAIN R | 4.0db GAIN X | 4.5db GAIN R | 4.5db GAIN X | 5.0db GAIN R | 5.0db GAIN X | 5.5db GAIN R | 5.5db GAIN X |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | .3 | - 901 | - 59 | -1003 | -122 | -1093 | - 91 | -1100 | - 27 | -1280 | - 20 |
| | .4 | - 873 | + 30 | - 966 | - 38 | -1076 | - 30 | -1113 | - 48 | -1221 | - 41 |
| | .6 | - 840 | 145 | - 944 | +112 | -1063 | +132 | -1110 | +134 | -1204 | +122 |
| | .7 | - 820 | 203 | - 926 | 181 | -1017 | 252 | -1081 | 221 | -1182 | 208 |
| | .8 | - 790 | 255 | - 902 | 227 | - 989 | 307 | -1049 | 280 | -1135 | 304 |
| | .9 | - 755 | 297 | - 863 | 289 | - 953 | 352 | - 972 | 384 | -1092 | 369 |
| | 1.0 | - 717 | 337 | - 828 | 345 | - 875 | 431 | - 924 | 422 | -1049 | 425 |
| | 1.1 | - 681 | 367 | - 773 | 386 | - 837 | 465 | - 894 | 470 | - 996 | 478 |
| | 1.2 | - 637 | 389 | - 737 | 413 | - 793 | 485 | - 804 | 528 | - 936 | 510 |

| | | 6.0db GAIN R | 6.0db GAIN X | 6.5db GAIN R | 6.5db GAIN X | 7.0db GAIN R | 7.0db GAIN X | 7.5db GAIN R | 7.5db GAIN X | 8.0db GAIN R | 8.0db GAIN X |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | .3 | -1303 | -181 | -1402 | - 91 | -1507 | -188 | -1526 | -173 | -1605 | -183 |
| | .4 | -1301 | - 53 | -1395 | - 12 | -1460 | -105 | -1518 | - 76 | -1544 | - 64 |
| | .6 | -1275 | +130 | -1350 | +241 | -1461 | +122 | -1512 | +192 | -1536 | +186 |
| | .7 | -1246 | 225 | -1303 | 355 | -1434 | 227 | -1471 | 303 | -1496 | 291 |
| | .8 | -1211 | 305 | -1244 | 435 | -1346 | 408 | -1385 | 451 | -1447 | 396 |
| | .9 | -1162 | 382 | -1146 | 535 | -1282 | 498 | -1313 | 537 | -1370 | 489 |
| | 1.0 | -1109 | 442 | -1076 | 592 | -1208 | 566 | -1228 | 615 | -1305 | 578 |
| | 1.1 | -1058 | 500 | -1009 | 631 | -1126 | 627 | -1148 | 670 | -1210 | 639 |
| | 1.2 | - 997 | 543 | - 932 | 659 | -1048 | 675 | -1062 | 704 | -1109 | 705 |

# TABLE 2

NEGATIVE IMPEDANCE AT 1 KC FOR OTHER SECTIONS (13X AND 14X)
(USING STRAPPING CHARTS)

| Net No. | Sec. | 1.0db GAIN R | 1.0db GAIN X | 1.5db GAIN R | 1.5db GAIN X | 2.0db GAIN R | 2.0db GAIN X | 2.5db GAIN R | 2.5db GAIN X | 3.0db GAIN R | 3.0db GAIN X |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 13X | .3 | - 341 | - 54 | - 462 | - 15 | - 626 | - 58 | - 790 | 26 | - 813 | - 83 |
| 19 DNB-H135 | .4 | - 321 | - 34 | - 458 | + 8 | - 612 | - 10 | - 736 | 56 | - 822 | - 40 |
| | .6 | - 309 | + 13 | - 448 | 72 | - 612 | + 72 | - 706 | 170 | - 822 | + 61 |
| | .7 | - 309 | 32 | - 443 | 109 | - 604 | 115 | - 677 | 220 | - 818 | 96 |
| | .8 | - 310 | 47 | - 427 | 136 | - 587 | 153 | - 648 | 261 | - 804 | 152 |
| | .9 | - 308 | 62 | - 412 | 161 | - 572 | 182 | - 613 | 300 | - 791 | 187 |
| | 1.0 | - 303 | 78 | - 393 | 185 | - 551 | 215 | - 579 | 323 | - 767 | 233 |
| | 1.1 | - 294 | 92 | - 375 | 201 | - 524 | 240 | - 538 | 348 | - 737 | 275 |
| | 1.2 | - 290 | 103 | - 350 | 213 | - 497 | 260 | - 497 | 359 | - 714 | 296 |

| | | 3.5db GAIN R | 3.5db GAIN X | 4.0db GAIN R | 4.0db GAIN X | 4.5db GAIN R | 4.5db GAIN X | 5.0db GAIN R | 5.0db GAIN X | 5.5db GAIN R | 5.5db GAIN X |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | .3 | -1002 | -105 | -1102 | - 98 | -1215 | -177 | -1308 | -216 | -1462 | -352 |
| | .4 | - 953 | - 73 | -1063 | - 55 | -1170 | - 81 | -1254 | - 65 | -1313 | - 83 |
| | .6 | - 925 | + 84 | -1072 | + 74 | -1154 | + 88 | -1219 | +137 | -1322 | +120 |
| | .7 | - 915 | 133 | -1057 | 140 | -1142 | 152 | -1202 | 213 | -1305 | 202 |
| | .8 | - 900 | 176 | -1029 | 236 | -1122 | 216 | -1165 | 300 | -1279 | 278 |
| | .9 | - 875 | 236 | - 998 | 287 | -1086 | 296 | -1119 | 367 | -1233 | 365 |
| | 1.0 | - 848 | 278 | - 967 | 339 | -1046 | 354 | -1076 | 424 | -1182 | 438 |
| | 1.1 | - 823 | 310 | - 925 | 382 | -1005 | 409 | -1030 | 478 | -1118 | 497 |
| | 1.2 | - 779 | 353 | - 882 | 420 | - 963 | 450 | - 973 | 512 | -1053 | 548 |

| | | 6.0db GAIN R | 6.0db GAIN X | 6.5db GAIN R | 6.5db GAIN X | 7.0db GAIN R | 7.0db GAIN X | 7.5db GAIN R | 7.5db GAIN X | 8.0db GAIN R | 8.0db GAIN X |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | .3 | -1487 | -220 | -1628 | -243 | -1590 | -253 | -1652 | -110 | -1793 | -142 |
| | .4 | -1456 | -135 | -1509 | + 37 | -1569 | -176 | -1651 | -150 | -1725 | -112 |
| | .6 | -1428 | + 68 | -1488 | 205 | -1576 | + 47 | -1647 | +101 | -1735 | +121 |
| | .7 | -1416 | 168 | -1457 | 323 | -1570 | 144 | -1626 | 201 | -1703 | 271 |
| | .8 | -1396 | 240 | -1403 | 409 | -1537 | 249 | -1585 | 315 | -1674 | 342 |
| | .9 | -1359 | 335 | -1341 | 494 | -1515 | 319 | -1553 | 388 | -1625 | 437 |
| | 1.0 | -1323 | 394 | -1261 | 572 | -1476 | 410 | -1494 | 493 | -1564 | 539 |
| | 1.1 | -1299 | 446 | -1261 | 572 | -1412 | 488 | -1429 | 561 | -1511 | 600 |
| | 1.2 | -1232 | 520 | -1186 | 639 | -1403 | 514 | -1411 | 582 | -1424 | 680 |

| | | 1.0db GAIN R | 1.0db GAIN X | 1.5db GAIN R | 1.5db GAIN X | 2.0db GAIN R | 2.0db GAIN X | 2.5db GAIN R | 2.5db GAIN X | 3.0db GAIN R | 3.0db GAIN X |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 14X | .3 | - 510 | - 6 | - 701 | - 49 | - 921 | - 47 | -1129 | -126 | -1412 | -220 |
| 19 DNB-B175 | .4 | - 490 | 0 | - 693 | - 42 | - 920 | 0 | -1114 | - 74 | -1332 | - 18 |
| | .6 | - 485 | 37 | - 703 | + 22 | - 915 | 107 | -1123 | + 90 | -1323 | +154 |
| | .7 | - 486 | 56 | - 695 | 54 | - 903 | 156 | -1117 | 126 | -1315 | 208 |
| | .8 | - 483 | 82 | - 696 | 99 | - 873 | 221 | -1100 | 193 | -1303 | 252 |
| | .9 | - 477 | 100 | - 689 | 125 | - 849 | 265 | -1091 | 225 | -1266 | 342 |
| | 1.0 | - 469 | 117 | - 681 | 152 | - 827 | 302 | -1060 | 290 | -1237 | 390 |
| | 1.1 | - 463 | 131 | - 663 | 187 | - 783 | 350 | -1045 | 320 | -1191 | 458 |
| | 1.2 | - 448 | 154 | - 646 | 206 | - 750 | 378 | -1012 | 375 | -1160 | 494 |

| | | 3.5db GAIN R | 3.5db GAIN X | 4.0db GAIN R | 4.0db GAIN X | 4.5db GAIN R | 4.5db GAIN X | 5.0db GAIN R | 5.0db GAIN X | 5.5db GAIN R | 5.5db GAIN X |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | .3 | -1502 | - 79 | -1603 | - 98 | -1807 | -188 | -2009 | -244 | -2088 | -296 |
| | .4 | -1504 | 0 | -1591 | + 22 | -1781 | -116 | -1944 | -102 | -2065 | -208 |
| | .6 | -1496 | 126 | -1573 | 174 | -1784 | +116 | -1945 | +136 | -2080 | + 15 |
| | .7 | -1496 | 126 | -1573 | 174 | -1750 | 259 | -1923 | 245 | -2075 | 140 |
| | .8 | -1464 | 258 | -1532 | 309 | -1723 | 342 | -1890 | 354 | -2052 | 243 |
| | .9 | -1411 | 370 | -1532 | 309 | -1686 | 433 | -1850 | 455 | -2020 | 368 |
| | 1.0 | -1411 | 370 | -1480 | 435 | -1624 | 518 | -1805 | 550 | -1985 | 455 |
| | 1.1 | -1344 | 473 | -1480 | 435 | -1566 | 609 | -1738 | 624 | -1928 | 556 |
| | 1.2 | -1344 | 473 | -1390 | 547 | -1504 | 668 | -1675 | 699 | -1868 | 655 |

| | | 6.0db GAIN R | 6.0db GAIN X | 6.5db GAIN R | 6.5db GAIN X | 7.0db GAIN R | 7.0db GAIN X | 7.5db GAIN R | 7.5db GAIN X | 8.0db GAIN R | 8.0db GAIN X |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | .3 | -2218 | -257 | | | | | | | | |
| | .4 | -2209 | -177 | | | | | | | | |
| | .6 | -2226 | + 58 | | | | | | | | |
| | .7 | -2216 | 192 | | | | | | | | |
| | .8 | -2196 | 290 | | | | | | | | |
| | .9 | -2167 | 408 | | | | | | | | |
| | 1.0 | -2115 | 511 | | | | | | | | |
| | 1.1 | -2059 | 607 | | | | | | | | |
| | 1.2 | -1991 | 706 | | | | | | | | |

# TABLE 2

NEGATIVE IMPEDANCE AT 1 KC FOR OTHER SECTIONS (15X AND 16X)
(USING STRAPPING CHARTS)

| Net No. | Sec. | 1.0db GAIN R | 1.0db GAIN X | 1.5db GAIN R | 1.5db GAIN X | 2.0db GAIN R | 2.0db GAIN X | 2.5db GAIN R | 2.5db GAIN X | 3.0db GAIN R | 3.0db GAIN X |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 15X | .3 | - 420 | - 31 | - 611 | - 35 | - 821 | - 52 | - 993 | -105 | -1101 | - 84 |
| 19 DNB-D175 | .4 | - 403 | + 7 | - 590 | + 4 | - 771 | + 57 | - 945 | + 37 | -1071 | - 27 |
| | .6 | - 401 | 68 | - 593 | 83 | - 752 | 172 | - 926 | 165 | -1068 | +107 |
| | .7 | - 395 | 94 | - 581 | 122 | - 728 | 213 | - 905 | 210 | -1052 | 173 |
| | .8 | - 375 | 129 | - 562 | 165 | - 693 | 265 | - 871 | 276 | -1030 | 235 |
| | .9 | - 368 | 144 | - 546 | 197 | - 651 | 307 | - 829 | 331 | -1004 | 290 |
| | 1.0 | - 354 | 162 | - 525 | 224 | - 615 | 336 | - 799 | 361 | - 971 | 340 |
| | 1.1 | - 336 | 176 | - 499 | 246 | - 572 | 364 | - 753 | 403 | - 930 | 385 |
| | 1.2 | - 314 | 191 | - 475 | 268 | - 540 | 373 | - 714 | 419 | - 887 | 424 |

| | | 3.5db GAIN R | 3.5db GAIN X | 4.0db GAIN R | 4.0db GAIN X | 4.5db GAIN R | 4.5db GAIN X | 5.0db GAIN R | 5.0db GAIN X | 5.5db GAIN R | 5.5db GAIN X |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | .3 | -1271 | - 60 | -1386 | -183 | -1505 | -166 | -1626 | -166 | -1745 | -129 |
| | .4 | -1235 | + 41 | -1358 | -102 | -1483 | - 38 | -1612 | - 78 | -1743 | - 41 |
| | .6 | -1205 | 217 | -1365 | + 65 | -1460 | +212 | -1605 | +146 | -1740 | +150 |
| | .7 | -1171 | 295 | -1349 | 173 | -1429 | 301 | -1564 | 279 | -1697 | 330 |
| | .8 | -1131 | 371 | -1317 | 272 | -1375 | 416 | -1537 | 365 | -1661 | 404 |
| | .9 | -1084 | 432 | -1268 | 371 | -1343 | 457 | -1486 | 459 | -1624 | 481 |
| | 1.0 | -1033 | 487 | -1243 | 411 | -1270 | 540 | -1412 | 547 | -1532 | 599 |
| | 1.1 | - 973 | 527 | -1179 | 484 | -1192 | 605 | -1324 | 638 | -1476 | 659 |
| | 1.2 | - 911 | 558 | -1144 | 518 | -1107 | 663 | -1265 | 669 | -1406 | 708 |

| | | 6.0db GAIN R | 6.0db GAIN X | 6.5db GAIN R | 6.5db GAIN X | 7.0db GAIN R | 7.0db GAIN X | 7.5db GAIN R | 7.5db GAIN X | 8.0db GAIN R | 8.0db GAIN X |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | .3 | -1911 | -321 | -1922 | -320 | -2055 | -136 | -2118 | -236 | -2286 | -296 |
| | .4 | -1864 | -143 | -1933 | -168 | -2060 | -106 | -2089 | - 74 | -2213 | -104 |
| | .6 | -1845 | +110 | -1922 | +129 | -1959 | +235 | -2081 | +198 | -2198 | +196 |
| | .7 | -1816 | 262 | -1897 | 261 | -1990 | 370 | -2041 | 337 | -2161 | 357 |
| | .8 | -1783 | 350 | -1859 | 377 | -1938 | 485 | -1955 | 530 | -2062 | 571 |
| | .9 | -1740 | 450 | -1790 | 519 | -1866 | 608 | -1891 | 635 | -1970 | 683 |
| | 1.0 | -1681 | 541 | -1732 | 603 | -1787 | 701 | -1832 | 704 | -1922 | 767 |
| | 1.1 | -1602 | 642 | -1657 | 703 | -1678 | 805 | -1781 | 765 | -1817 | 862 |
| | 1.2 | -1554 | 700 | -1571 | 774 | -1594 | 875 | -1653 | 878 | -1714 | 920 |

| | | 1.0db GAIN R | 1.0db GAIN X | 1.5db GAIN R | 1.5db GAIN X | 2.0db GAIN R | 2.0db GAIN X | 2.5db GAIN R | 2.5db GAIN X | 3.0db GAIN R | 3.0db GAIN X |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 16X | .3 | - 363 | - 82 | - 521 | - 38 | - 688 | - 64 | - 824 | - 89 | - 983 | -132 |
| 19 DNB-H175 | .4 | - 343 | - 15 | - 511 | - 23 | - 689 | - 7 | - 825 | - 6 | - 977 | - 87 |
| | .6 | - 352 | + 34 | - 517 | + 52 | - 673 | +126 | - 809 | +129 | - 941 | +107 |
| | .7 | - 348 | 57 | - 511 | 91 | - 651 | 184 | - 791 | 187 | - 920 | 178 |
| | .8 | - 342 | 75 | - 501 | 116 | - 624 | 228 | - 753 | 247 | - 904 | 229 |
| | .9 | - 339 | 91 | - 483 | 156 | - 588 | 266 | - 709 | 300 | - 865 | 286 |
| | 1.0 | - 326 | 113 | - 471 | 178 | - 535 | 309 | - 676 | 336 | - 822 | 342 |
| | 1.1 | - 313 | 126 | - 451 | 201 | - 496 | 325 | - 624 | 369 | - 773 | 385 |
| | 1.2 | - 303 | 138 | - 424 | 218 | - 451 | 348 | - 588 | 391 | - 722 | 416 |

| | | 3.5db GAIN R | 3.5db GAIN X | 4.0db GAIN R | 4.0db GAIN X | 4.5db GAIN R | 4.5db GAIN X | 5.0db GAIN R | 5.0db GAIN X | 5.5db GAIN R | 5.5db GAIN X |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | .3 | -1101 | - 66 | -1303 | -118 | -1398 | -110 | -1502 | - 92 | -1604 | -156 |
| | .4 | -1080 | - 15 | -1253 | 0 | -1390 | + 21 | -1492 | + 79 | -1570 | - 52 |
| | .6 | -1049 | +189 | -1231 | 184 | -1337 | 260 | -1440 | 187 | -1528 | +216 |
| | .7 | -1009 | 280 | -1180 | 315 | -1262 | 399 | -1401 | 306 | -1499 | 298 |
| | .8 | - 972 | 328 | -1140 | 386 | -1202 | 477 | -1371 | 363 | -1447 | 408 |
| | .9 | - 918 | 395 | -1053 | 477 | -1137 | 539 | -1313 | 461 | -1389 | 497 |
| | 1.0 | - 850 | 440 | - 994 | 520 | -1028 | 608 | -1244 | 544 | -1273 | 606 |
| | 1.1 | - 792 | 486 | - 939 | 556 | - 954 | 639 | -1146 | 615 | -1175 | 667 |
| | 1.2 | - 727 | 516 | - 841 | 600 | - 896 | 671 | -1076 | 648 | -1175 | 667 |

| | | 6.0db GAIN R | 6.0db GAIN X | 6.5db GAIN R | 6.5db GAIN X | 7.0db GAIN R | 7.0db GAIN X | 7.5db GAIN R | 7.5db GAIN X | 8.0db GAIN R | 8.0db GAIN X |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | .3 | -1664 | -168 | -1705 | -171 | -1908 | -298 | -1903 | -178 | -2010 | -218 |
| | .4 | -1625 | -102 | -1701 | + 42 | -1813 | - 79 | -1891 | - 48 | -2002 | - 31 |
| | .6 | -1586 | +188 | -1657 | 259 | -1805 | 220 | -1856 | +226 | -1943 | +357 |
| | .7 | -1559 | 297 | -1619 | 365 | -1774 | 311 | -1831 | 325 | -1889 | 464 |
| | .8 | -1515 | 400 | -1541 | 467 | -1695 | 479 | -1750 | 480 | -1780 | 631 |
| | .9 | -1441 | 503 | -1465 | 574 | -1645 | 547 | -1690 | 560 | -1701 | 714 |
| | 1.0 | -1400 | 559 | -1332 | 692 | -1536 | 676 | -1619 | 660 | -1617 | 758 |
| | 1.1 | -1305 | 636 | -1332 | 692 | -1390 | 767 | -1522 | 751 | -1546 | 828 |
| | 1.2 | -1185 | 709 | -1216 | 757 | -1365 | 798 | -1409 | 807 | -1365 | 903 |

TABLE 2

NEGATIVE IMPEDANCE AT 1 KC FOR OTHER SECTIONS
(USING STRAPPING CHART 17X)

| Net No. 17X | End Sec. | 1.0db GAIN R | 1.0db GAIN X | 1.5db GAIN R | 1.5db GAIN X | 2.0db GAIN R | 2.0db GAIN X | 2.5db GAIN R | 2.5db GAIN X | 3.0db GAIN R | 3.0db GAIN X |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 19 CNB-H44 | .3 | | | | | | | -320 | + 29 | -429 | + 9 |
| | .4 | | | | | | | -363 | + 12 | -428 | + 38 |
| | .5 | | | | | | | -362 | + 12 | -428 | + 38 |
| | .6 | | | | | | | -374 | + 52 | -427 | + 68 |
| | .7 | | | | | | | -371 | + 58 | -421 | + 85 |
| | .8 | | | | | | | -365 | + 71 | -414 | +104 |
| | .9 | | | | | | | -361 | + 91 | -404 | +122 |
| | 1.0 | | | | | | | -354 | +106 | -392 | +137 |
| | 1.1 | | | | | | | -347 | +121 | -383 | +155 |
| | 1.2 | | | | | | | -340 | +131 | -370 | +168 |

| | 3.5db GAIN R | 3.5db GAIN X | 4.0db GAIN R | 4.0db GAIN X | 4.5db GAIN R | 4.5db GAIN X | 5.0db GAIN R | 5.0db GAIN X | 5.5db GAIN R | 5.5db GAIN X |
|---|---|---|---|---|---|---|---|---|---|---|
| .3 | -420 | 0 | -530 | 0 | -550 | 0 | -971 | + 36 | -650 | 0 |
| .4 | -492 | + 11 | -522 | 0 | -582 | 0 | -755 | + 39 | -678 | - 11 |
| .5 | -486 | + 30 | -523 | + 14 | -582 | + 29 | -624 | + 20 | -686 | 0 |
| .6 | -474 | + 8 | -524 | + 34 | -580 | + 51 | -620 | + 40 | -680 | + 34 |
| .7 | -472 | + 74 | -518 | + 63 | -580 | + 76 | -626 | + 73 | -675 | + 69 |
| .8 | -469 | + 84 | -519 | + 75 | -572 | +102 | -614 | + 75 | -668 | + 95 |
| .9 | -469 | +120 | -520 | + 91 | -565 | +120 | -614 | +111 | -652 | +127 |
| 1.0 | -453 | +115 | -506 | +119 | -551 | +144 | -595 | +151 | -653 | +155 |
| 1.1 | -445 | +136 | -500 | +133 | -546 | +159 | -586 | +176 | -644 | +182 |
| 1.2 | -450 | +172 | -494 | +149 | -529 | +190 | -574 | +194 | -631 | +196 |

TABLE 3
REPEATER IMPEDANCE WITH NETWORK 1X
FOR 3 db GAIN AND VARIOUS END SECTIONS
19CNB)
22BSA) B88
24DSM)

| | .3 END SECTION | | .4 END SECTION | | .5 END SECTION | | .6 END SECTION | | .7 END SECTION | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Measured | | Measured | | Measured | | Measured | | Measured | |
| F | R | X | R | X | R | X | R | X | R | X |
| 200 | -799 | -j361 | -793 | -j332 | -793 | -j331 | -799 | -j332 | -797 | -j319 |
| 300 | -820 | -j226 | -822 | -j205 | -819 | -j201 | -819 | -j187 | -826 | -j180 |
| 500 | -831 | -j98 | -831 | -j98 | -832 | -j89 | -834 | -j70 | -838 | -j59 |
| 1000 | -849 | +j0 | -849 | +j0 | -844 | +j16 | -842 | +j62 | -840 | +j82 |
| 1500 | -850 | +j22 | -854 | +j59 | -863 | +j85 | -851 | +j149 | -839 | +j178 |
| 2000 | -890 | +j32 | -888 | +j101 | -888 | +j141 | -861 | +j231 | -844 | +j269 |
| 2500 | -902 | +j63 | -935 | +j146 | -926 | +j197 | -882 | +j318 | -862 | +j369 |
| 2800 | -990 | +j21 | -982 | +j159 | -965 | +j234 | -907 | +j378 | -861 | +j433 |
| 3000 | -1000 | +j31 | -1020 | +j174 | -1000 | +j261 | -923 | +j416 | -873 | +j485 |
| 3500 | -1111 | +j42 | -1151 | +j233 | -1117 | +j358 | -970 | +j570 | -884 | +j647 |
| 3800 | -1253 | +j73 | -1278 | +j288 | -1219 | +j461 | -1005 | +j703 | -872 | +j773 |
| *3900 | -1300 | +j78 | -1328 | +j316 | -1263 | +j496 | -1007 | +j764 | -865 | +j830 |
| 4000 | -1356 | +j108 | -1401 | +j352 | -1300 | +j555 | -1014 | +j840 | -843 | +j891 |
| 4500 | -1862 | +j219 | -1836 | +j773 | -1509 | +j1083 | -855 | +j1243 | -640 | +j1173 |
| 4900 | -3020 | +j125 | -1876 | +j1826 | -1176 | +j1826 | -461 | +j1419 | -328 | +j1245 |
| 5000 | -3619 | +j172 | -1572 | +j2157 | -907 | +j1944 | -309 | +j1436 | -211 | +j1257 |
| 5200 | -4634 | +j1679 | -863 | +j2459 | -481 | +j1951 | -153 | +j1340 | -89 | +j1151 |
| 5400 | -3180 | +j4481 | -306 | +j2286 | -123 | +j1783 | -23 | +j1227 | -11 | +j1071 |

| | .8 END SECTION | | .9 END SECTION | | FULL SECTION | | 1.1 END SECTION | | 1.2 END SECTION | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Measured | | Measured | | Measured | | Measured | | Measured | |
| F | R | X | R | X | R | X | R | X | R | X |
| 200 | -796 | -j309 | -807 | -j304 | -805 | -j296 | -808 | -j291 | -817 | -j289 |
| 300 | -830 | -j170 | -832 | -j157 | -832 | -j151 | -832 | -j141 | -866 | -j201 |
| 500 | -835 | -j38 | -835 | -j12 | -836 | -j3 | -832 | +j12 | -832 | +j25 |
| 1000 | -830 | +j123 | -820 | +j180 | -813 | +j181 | -793 | +j214 | -791 | +j231 |
| 1500 | -819 | +j240 | -788 | +j291 | -771 | +j316 | -726 | +j357 | -716 | +j371 |
| 2000 | -801 | +j341 | -739 | +j403 | -715 | +j423 | -655 | +j466 | -628 | +j480 |
| 2500 | -777 | +j453 | -691 | +j509 | -653 | +j528 | -571 | +j557 | -530 | +j562 |
| 2800 | -763 | +j521 | -654 | +j571 | -606 | +j594 | -512 | +j598 | -475 | +j598 |
| 3000 | -754 | +j571 | -633 | +j619 | -571 | +j629 | -471 | +j625 | -438 | +j617 |
| 3500 | -701 | +j713 | -543 | +j730 | -493 | +j707 | -376 | +j682 | -339 | +j685 |
| 3800 | -646 | +j821 | -477 | +j803 | -422 | +j778 | | | | |
| *3900 | -648 | +j834 | -450 | +j804 | -409 | +j764 | -270 | +j726 | -237 | +j699 |
| 4000 | -590 | +j904 | -436 | +j819 | -349 | +j802 | -251 | +j734 | -229 | +j705 |
| 4500 | -382 | +j1010 | -234 | +j870 | -197 | +j827 | -122 | +j727 | -104 | +j698 |
| 4900 | -166 | +j1016 | -94 | +j852 | -68 | +j807 | -69 | +j680 | -60 | +j645 |
| 5000 | -105 | +j1010 | -67 | +j823 | -39 | +j783 | -31 | +j675 | -40 | +j630 |
| 5200 | -43 | +j954 | -26 | +j780 | | | | | | |
| 5400 | +14 | +j882 | 0 | +j741 | +12 | +j700 | +24 | +j637 | +17 | +j607 |

* .8 of cut-off frequency of facility

TABLE 3
REPEATER IMPEDANCE WITH NETWORK 2X
FOR 3 db GAIN AND VARIOUS END SECTIONS
19DNB)
24CSM) B88

| | .3 END SECTION | | .4 END SECTION | | .5 END SECTION | | .6 END SECTION | | .7 END SECTION | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Measured | | Measured | | Measured | | Measured | | Measured | |
| F | R | X | R | X | R | X | R | X | R | X |
| 200 | -869 | -j416 | -880 | -j381 | -887 | -j369 | -897 | -j362 | -891 | -j368 |
| 300 | -921 | -j266 | -910 | -j230 | -923 | -j219 | -921 | -j203 | -918 | -j202 |
| 500 | -909 | -j118 | -923 | -j101 | -931 | -j88 | -928 | -j57 | -927 | -j48 |
| 1000 | -951 | -j58 | -929 | +j19 | -932 | +j50 | -927 | +j105 | -914 | +j124 |
| 1500 | -950 | +j0 | -929 | +j96 | -931 | +j132 | -911 | +j206 | -891 | +j237 |
| 2000 | -950 | +j29 | -935 | +j141 | -930 | +j195 | -898 | +j292 | -868 | +j332 |
| 2400 | -990 | +j28 | -953 | +j170 | -941 | +j236 | -889 | +j352 | -852 | +j400 |
| 2800 | -991 | +j56 | -984 | +j195 | -966 | +j274 | -900 | +j413 | -848 | +j467 |
| 3000 | -1002 | +j84 | -1005 | +j206 | -988 | +j291 | -915 | +j447 | -846 | +j497 |
| 3500 | -1092 | +j79 | -1098 | +j228 | -1077 | +j350 | -951 | +j546 | -861 | +j612 |
| 4000 | -1214 | +j104 | -1288 | +j270 | -1237 | +j460 | -1019 | +j728 | -867 | +j804 |
| 4200 | -1308 | +j157 | -1404 | +j313 | -1333 | +j544 | -1032 | +j834 | -864 | +j899 |
| *4300 | -1404 | +j196 | -1477 | +j341 | -1393 | +j606 | -1038 | +j913 | -844 | +j957 |
| 4500 | -1527 | +j272 | -1667 | +j442 | -1506 | +j776 | -1006 | +j1060 | -793 | +j1088 |
| 5000 | -2330 | +j492 | -2140 | +j1343 | -1463 | +j1632 | -670 | +j1383 | -495 | +j1289 |
| 5400 | -4101 | +j38 | -1505 | +j2402 | -690 | +j2014 | -309 | +j1405 | -222 | +j1262 |
| 5500 | -4705 | +j495 | -1157 | +j2525 | -512 | +j1982 | -241 | +j1355 | -189 | +j1234 |
| 5600 | -5229 | +j1507 | -910 | +j2544 | -327 | +j1943 | -183 | +j1308 | -105 | +j1195 |
| 6000 | -1722 | +j4979 | -345 | +j2352 | +13 | +j1594 | -39 | +j1155 | -5 | +j1086 |
| 6100 | -960 | +j4528 | -49 | +j2057 | +54 | +j1527 | -17 | +j1115 | +23 | +j1052 |

| | .8 END SECTION | | .9 END SECTION | | FULL SECTION | | 1.1 END SECTION | | 1.2 END SECTION | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Measured | | Measured | | Measured | | Measured | | Measured | |
| F | R | X | R | X | R | X | R | X | R | X |
| 200 | -898 | -j354 | -901 | -j343 | -905 | -j340 | -914 | -j335 | -910 | -j328 |
| 300 | -924 | -j190 | -930 | -j175 | -929 | -j170 | -932 | -j155 | -932 | -j146 |
| 500 | -932 | -j83 | -930 | -j9 | -930 | +j5 | -929 | +j28 | -923 | +j39 |
| 1000 | -914 | +j149 | -896 | +j193 | -887 | +j215 | -869 | +j259 | -846 | +j278 |
| 1500 | -878 | +j270 | -839 | +j331 | -823 | +j358 | -779 | +j406 | -754 | +j431 |
| 2000 | -844 | +j368 | -782 | +j433 | -748 | +j468 | -691 | +j509 | -652 | +j520 |
| 2400 | -822 | +j443 | -737 | +j505 | -696 | +j531 | -616 | +j563 | -573 | +j574 |
| 2800 | -803 | +j508 | -701 | +j574 | -653 | +j597 | -554 | +j619 | -509 | +j622 |
| 3000 | -796 | +j547 | -680 | +j608 | -626 | +j627 | -529 | +j644 | -477 | +j639 |
| 3500 | -787 | +j661 | -627 | +j707 | -563 | +j707 | -478 | +j692 | -402 | +j682 |
| 4000 | -755 | +j837 | -567 | +j825 | -485 | +j823 | -374 | +j757 | -319 | +j739 |
| 4200 | -724 | +j902 | -526 | +j869 | -451 | +j832 | | | | |
| *4300 | -684 | +j971 | -465 | +j923 | -400 | +j888 | -308 | +j803 | -260 | +j761 |
| 4500 | -618 | +j1050 | -416 | +j935 | -367 | +j878 | -252 | +j815 | -207 | +j776 |
| 5000 | -365 | +j1149 | -210 | +j990 | -192 | +j898 | -146 | +j794 | -120 | +j742 |
| 5400 | -158 | +j1079 | | | | | | | | |
| 5500 | -132 | +j1068 | -96 | +j894 | -75 | +j833 | -54 | +j750 | -57 | +j700 |
| 5600 | | | | | | | | | | |
| 6000 | -18 | +j923 | -23 | +j794 | | | | | | |
| 6100 | -10 | +j913 | -23 | +j794 | -15 | +j746 | -5 | +j690 | -15 | +j646 |

* .8 of cut-off frequency of facility

TABLE 3
REPEATER IMPEDANCE WITH NETWORK 5X
FOR 2 db GAIN AND VARIOUS END SECTIONS
19CNB)
22BSA) H88
24DSM)

| | .3 END SECTION | | .4 END SECTION | | .5 END SECTION | | .6 END SECTION | | .7 END SECTION | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Measured | | Measured | | Measured | | Measured | | Measured | |
| F | R | X | R | X | R | X | R | X | R | X |
| 200 | -390 | -j136 | -380 | -j138 | -385 | -j127 | -383 | -j128 | -383 | -j128 |
| 300 | -403 | -j77 | -387 | -j86 | -386 | -j80 | -387 | -j66 | -387 | -j66 |
| 500 | -400 | -j0 | -394 | -j40 | -401 | -j21 | -400 | -j3 | -400 | -j3 |
| 1000 | -400 | -j0 | -410 | +j0 | -411 | +j25 | -406 | +j63 | -406 | +j63 |
| 1500 | -410 | -j0 | -431 | +j21 | -437 | +j66 | -414 | +j136 | -414 | +j136 |
| 2000 | -460 | -j0 | -473 | +j39 | -477 | +j100 | -431 | +j209 | -431 | +j209 |
| 2400 | -500 | +j17 | -527 | +j43 | -538 | +j135 | -443 | +j286 | -443 | +j286 |
| 2600 | -550 | +j25 | -573 | +j41 | | | -447 | +j335 | -447 | +j335 |
| *2800 | -582 | +j64 | -641 | +j38 | -657 | +j206 | -445 | +j410 | -445 | +j410 |
| 3000 | -655 | +j116 | -749 | +j41 | -753 | +j291 | -418 | +j494 | -418 | +j494 |
| 3200 | -785 | +j203 | -938 | +j66 | -836 | +j464 | -341 | +j579 | -341 | +j579 |
| 3400 | -1055 | +j301 | -1250 | +j237 | -793 | +j773 | -230 | +j631 | -230 | +j631 |
| 3500 | -1288 | +j346 | -1430 | +j495 | -658 | +j940 | -162 | +j630 | -162 | +j630 |
| 3600 | -1655 | +j354 | -1470 | +j922 | -446 | +j1019 | -120 | +j610 | -120 | +j610 |
| 3700 | -2321 | +j80 | -1122 | +j1362 | | | -76 | +j566 | -76 | +j566 |
| 3800 | -2880 | +j755 | -773 | +j1543 | -158 | +j951 | -61 | +j545 | -61 | +j545 |
| 3900 | -2396 | +j2208 | -375 | +j1471 | -79 | +j889 | -43 | +j515 | -43 | +j515 |
| 4000 | -958 | +j2490 | -168 | +j1286 | -35 | +j795 | -25 | +j485 | -25 | +j485 |

| | .8 END SECTION | | .9 END SECTION | | FULL SECTION | | 1.1 END SECTION | | 1.2 END SECTION | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Measured | | Measured | | Measured | | Measured | | Measured | |
| F | R | X | R | X | R | X | R | X | R | X |
| 200 | -384 | -j126 | -384 | -j125 | -381 | -j117 | -381 | -j117 | -385 | -j111 |
| 300 | -394 | -j61 | -390 | -j55 | -392 | -j49 | -391 | -j46 | -390 | -j33 |
| 500 | -398 | +j0 | -395 | +j0 | -392 | +j5 | -389 | +j16 | -387 | +j33 |
| 1000 | -399 | +j82 | -395 | +j102 | -381 | +j119 | -375 | +j131 | -353 | +j155 |
| 1500 | -399 | +j159 | -380 | +j185 | -354 | +j205 | -340 | +j216 | -304 | +j233 |
| 2000 | -397 | +j238 | -360 | +j266 | -313 | +j283 | -295 | +j294 | -238 | +j289 |
| 2400 | -393 | +j318 | -336 | +j338 | -261 | +j331 | -245 | +j343 | -193 | +j330 |
| 2600 | -380 | +j371 | -308 | +j379 | -229 | +j355 | -216 | +j371 | -165 | +j347 |
| *2800 | -360 | +j432 | -276 | +j424 | -193 | +j382 | -186 | +j394 | -137 | +j359 |
| 3000 | -318 | +j489 | -231 | +j453 | -168 | +j423 | -145 | +j403 | -105 | +j365 |
| 3200 | -246 | +j541 | -169 | +j478 | -125 | +j433 | -105 | +j409 | -75 | +j361 |
| 3400 | -160 | +j549 | -109 | +j478 | -75 | +j429 | -65 | +j400 | -47 | +j347 |
| 3500 | -120 | +j551 | -77 | +j469 | | | | | | |
| 3600 | -80 | +j529 | -57 | +j459 | -40 | +j412 | -33 | +j385 | -27 | +j343 |
| 3700 | -52 | +j506 | -38 | +j446 | | | | | | |
| 3800 | -29 | +j488 | -24 | +j424 | -14 | +j380 | -13 | +j365 | -17 | +j333 |
| 3900 | -12 | +j464 | -14 | +j412 | | | | | | |
| 4000 | -6 | +j451 | -7 | +j400 | -10 | +j367 | -7 | +j353 | -6 | +j309 |

* .8 of cut-off frequency of facility.

TABLE 3
REPEATER IMPEDANCE WITH NETWORK 6X
FOR 2 db GAIN AND VARIOUS END SECTIONS
19DNB) H88
24CSM)

| | .3 END SECTION | | .4 END SECTION | | .5 END SECTION | | .6 END SECTION | | .7 END SECTION | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Measured | | Measured | | Measured | | Measured | | Measured | |
| F | R | X | R | X | R | X | R | X | R | X |
| 200 | -406 | -j169 | -409 | -j155 | -413 | -j151 | -411 | -j148 | -415 | -j145 |
| 300 | -418 | -j110 | -418 | -j103 | -423 | -j92 | -420 | -j88 | -423 | -j81 |
| 500 | -422 | -j54 | -426 | -j68 | -432 | -j42 | -429 | -j30 | -431 | -j19 |
| 1000 | -440 | -j13 | -448 | -j7 | -449 | +j11 | -446 | +j33 | -444 | +j57 |
| 1500 | -465 | +j13 | -470 | +j12 | -477 | +j48 | -475 | +j87 | -463 | +j124 |
| 2000 | -500 | +j18 | -523 | +j34 | -526 | +j95 | -509 | +j155 | -483 | +j204 |
| 2400 | -550 | +j23 | -580 | +j55 | -583 | +j147 | -548 | +j225 | -494 | +j292 |
| 2800 | -626 | +j45 | -677 | +j89 | -657 | +j229 | -576 | +j340 | -483 | +j408 |
| *3000 | -684 | +j63 | -740 | +j114 | -698 | +j233 | -585 | +j416 | -468 | +j476 |
| 3100 | -717 | +j72 | -780 | +j134 | -722 | +j336 | -584 | +j465 | -448 | +j511 |
| 3500 | -957 | +j123 | -1017 | +j298 | -771 | +j606 | -478 | +j664 | -319 | +j622 |
| 3800 | -1348 | +j114 | -1183 | +j690 | -616 | +j875 | -328 | +j781 | | |
| 3900 | -1595 | +j102 | -1173 | +j912 | -553 | +j917 | -271 | +j791 | -159 | +j656 |
| 4000 | -1894 | +j108 | -1049 | +j1148 | -420 | +j946 | -193 | +j795 | -118 | +j647 |
| 4100 | -2209 | +j451 | -853 | +j1289 | -303 | +j977 | -143 | +j767 | | |
| 4300 | -2105 | +j1897 | -383 | +j1350 | -137 | +j863 | -63 | +j707 | -33 | +j590 |
| 4400 | -1455 | +j2316 | -251 | +j1253 | -86 | +j853 | -28 | +j672 | -18 | +j572 |

| | .8 END SECTION | | .9 END SECTION | | FULL SECTION | | 1.1 END SECTION | | 1.2 END SECTION | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Measured | | Measured | | Measured | | Measured | | Measured | |
| F | R | X | R | X | R | X | R | X | R | X |
| 200 | -418 | -j140 | -415 | -j136 | -414 | -j135 | -417 | -j131 | -418 | -j124 |
| 300 | -425 | -j74 | -424 | -j71 | -421 | -j65 | -425 | -j59 | -427 | -j51 |
| 500 | -430 | -j6 | -430 | +j0 | -428 | -j6 | -426 | +j18 | -425 | +j31 |
| 1000 | -438 | +j79 | -434 | +j96 | -425 | +j116 | -413 | +j134 | -404 | +j150 |
| 1500 | -447 | +j158 | -433 | +j186 | -409 | +j208 | -385 | +j234 | -361 | +j249 |
| 2000 | -451 | +j249 | -410 | +j282 | -371 | +j303 | -331 | +j320 | -304 | +j328 |
| 2400 | -433 | +j342 | -372 | +j365 | -322 | +j376 | -280 | +j374 | -243 | +j364 |
| 2800 | -391 | +j439 | -315 | +j439 | | | | | | |
| *3000 | -358 | +j485 | -278 | +j477 | -221 | +j452 | -176 | +j424 | -146 | +j395 |
| 3100 | -333 | +j513 | | | | | | | | |
| 3500 | -219 | +j565 | -157 | +j509 | -118 | +j465 | -94 | +j424 | -81 | +j391 |
| 3800 | | | | | | | | | | |
| 3900 | -98 | +j557 | -68 | +j488 | -54 | +j450 | -42 | +j406 | -43 | +j376 |
| 4000 | -78 | +j550 | | | -41 | +j437 | | | | |
| 4100 | | | | | | | | | | |
| 4300 | -32 | +j511 | -21 | +j453 | -14 | +j410 | -13 | +j381 | -21 | +j358 |
| 4400 | -15 | +j491 | | | | | | | | |

* .8 of cut-off frequency of facility.

TABLE 3
REPEATER IMPEDANCE WITH NETWORK 8X
FOR 3.5 db GAIN AND VARIOUS END SECTIONS
19CNB) B135
22BSA)

| | .3 END SECTION | | .4 END SECTION | | .5 END SECTION | | .6 END SECTION | | .7 END SECTION | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Measured | | Measured | | Measured | | Measured | | Measured | |
| F | R | X | R | X | R | X | R | X | R | X |
| 200 | -1047 | -j528 | -1053 | -j496 | -1063 | -j490 | -1076 | -j481 | -1075 | -j473 |
| 300 | -1104 | -j344 | -1101 | -j309 | -1119 | -j307 | -1120 | -j280 | -1119 | -j271 |
| 500 | -1123 | -j202 | -1131 | -j157 | -1141 | -j144 | -1148 | -j102 | -1143 | -j83 |
| 1000 | -1158 | -j118 | -1171 | -j24 | -1171 | +j8 | -1170 | +j98 | -1162 | +j132 |
| 1500 | -1213 | +j93 | -1235 | +j47 | -1229 | +j107 | -1200 | +j240 | -1172 | +j303 |
| 2000 | -1312 | +j104 | -1341 | +j116 | -1320 | +j214 | -1249 | +j405 | -1191 | +j487 |
| 2400 | -1444 | +j120 | -1485 | +j189 | -1439 | +j333 | -1290 | +j583 | -1194 | +j675 |
| 2800 | -1660 | +j160 | -1702 | +j330 | -1599 | +j539 | -1301 | +j854 | -1153 | +j917 |
| 3000 | -1829 | +j185 | -1859 | +j457 | -1677 | +j709 | -1284 | +j1018 | -1074 | +j1079 |
| 3100 | -1936 | +j187 | -1934 | +j543 | -1737 | +j808 | -1247 | +j1111 | -1006 | +j1156 |
| *3200 | -2071 | +j191 | -2017 | +j667 | -1765 | +j941 | -1192 | +j1197 | -947 | +j1227 |
| 3500 | -2633 | +j89 | -2192 | +j1197 | -1712 | +j1418 | -939 | +j1430 | -729 | +j1342 |
| 3800 | -3513 | +j430 | -1912 | +j2054 | -1321 | +j1929 | -583 | +j1537 | | |
| 4000 | -4137 | +j1455 | -1361 | +j2367 | -873 | +j2083 | -362 | +j1486 | -233 | +j1320 |
| 4200 | -3845 | +j3081 | -841 | +j2380 | -529 | +j1992 | -171 | +j1425 | | |
| 4400 | -2100 | +j4157 | -398 | +j2223 | -225 | +j1841 | -50 | +j1299 | -55 | +j1123 |

| | .8 END SECTION | | .9 END SECTION | | FULL SECTION | | 1.1 END SECTION | | 1.2 END SECTION | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Measured | | Measured | | Measured | | Measured | | Measured | |
| F | R | X | R | X | R | X | R | X | R | X |
| 200 | -1079 | -j459 | -1088 | -j453 | -1100 | -j437 | -1107 | -j418 | -1110 | -j414 |
| 300 | -1125 | -j248 | -1134 | -j240 | -1136 | -j214 | -1142 | -j189 | -1144 | -j179 |
| 500 | -1143 | -j41 | -1146 | -j18 | -1142 | +j9 | -1138 | +j56 | -1139 | +j75 |
| 1000 | -1133 | +j210 | -1125 | +j248 | -1088 | +j312 | -1051 | +j374 | -1026 | +j404 |
| 1500 | -1105 | +j406 | -1077 | +j458 | -986 | +j530 | -908 | +j586 | -861 | +j609 |
| 2000 | -1058 | +j611 | -998 | +j657 | -856 | +j717 | -738 | +j736 | -696 | +j727 |
| 2400 | -985 | +j788 | -894 | +j816 | -733 | +j824 | -629 | +j798 | -527 | +j809 |
| 2800 | -858 | +j956 | -740 | +j978 | -583 | +j892 | -429 | +j865 | -390 | +j818 |
| 3000 | -769 | +j1064 | -642 | +j1044 | -474 | +j926 | -392 | +j837 | -322 | +j812 |
| 3100 | | | | | | | | | | |
| *3200 | -626 | +j1141 | -529 | +j1083 | -363 | +j940 | -292 | +j856 | -253 | +j803 |
| 3500 | -454 | +j1146 | -358 | +j1079 | -218 | +j923 | -173 | +j828 | -162 | +j774 |
| 3800 | | | | | | | | | | |
| 4000 | -144 | +j1058 | -131 | +j974 | -77 | +j827 | -79 | +j732 | -69 | +j693 |
| 4200 | | | | | | | | | | |
| 4400 | -32 | +j905 | -35 | +j853 | -5 | +j742 | -38 | +j664 | -36 | +j636 |

* .8 of cut-off frequency of facility.

TABLE 3
REPEATER IMPEDANCE WITH NETWORK 9X
FOR 3.5 db GAIN AND VARIOUS END SECTIONS
19DNB B135

| | .3 END SECTION | | .4 END SECTION | | .5 END SECTION | | .6 END SECTION | | .7 END SECTION | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Measured | | Measured | | Measured | | Measured | | Measured | |
| F | R | X | R | X | R | X | R | X | R | X |
| 200 | -1177 | -j629 | -1173 | -j579 | -1185 | -j560 | -1174 | -j545 | -1200 | -j534 |
| 300 | -1224 | -j348 | -1233 | -j366 | -1241 | -j334 | -1244 | -j319 | -1255 | -j297 |
| 500 | -1253 | -j128 | -1264 | -j190 | -1267 | -j136 | -1270 | -j109 | -1273 | -j62 |
| 1000 | -1290 | +j0 | -1270 | -j25 | -1273 | +j64 | -1263 | +j111 | -1246 | +j204 |
| 1500 | -1300 | +j21 | -1290 | +j6 | -1277 | +j179 | -1254 | +j247 | -1200 | +j375 |
| 2000 | -1300 | +j21 | -1341 | +j29 | -1309 | +j259 | -1268 | +j356 | -1151 | +j511 |
| 2400 | -1400 | +j40 | -1411 | +j30 | -1381 | +j325 | -1325 | +j438 | -1168 | +j636 |
| 2800 | -1503 | +j120 | -1565 | +j14 | -1521 | +j404 | -1439 | +j555 | -1159 | +j806 |
| 3000 | -1600 | +j212 | -1680 | +j18 | -1630 | +j479 | -1521 | +j662 | -1202 | +j903 |
| 3500 | -2093 | +j601 | -2282 | +j64 | -2024 | +j961 | -1632 | +j1230 | -1039 | j1352 |
| *3600 | -2221 | +j684 | -2521 | +j36 | -2099 | +j1164 | -1595 | +j1394 | -967 | j1456 |
| 3800 | -2721 | +j822 | | | -2084 | +j1691 | | | | |
| 3920 | | | -3629 | +j553 | | | | | | |
| 4000 | -3646 | +j911 | -3925 | +j927 | -1711 | +j2296 | -963 | +j1982 | -514 | +j1725 |
| 4200 | -5016 | +j638 | -4208 | +j2382 | -1181 | +j2529 | -592 | +j2036 | -337 | +j1586 |
| 4350 | -6638 | +j773 | | | | | | | | |
| 4500 | -6884 | +j4075 | -1850 | +j4240 | -442 | +j2338 | -218 | +j1895 | -182 | +j1502 |
| 4600 | -5256 | +j5938 | -1145 | +j3999 | -402 | +j2298 | -114 | +j1725 | | |
| 4900 | -826 | +j5234 | -185 | +j3078 | -111 | +j1881 | -2 | +j1485 | -47 | +j1402 |
| 5000 | -318 | +j4466 | -5 | +j2809 | -79 | +j1801 | -2 | +j1485 | -1 | +j1267 |

| | .8 END SECTION | | .9 END SECTION | | FULL SECTION | | 1.1 END SECTION | | 1.2 END SECTION | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Measured | | Measured | | Measured | | Measured | | Measured | |
| F | R | X | R | X | R | X | R | X | R | X |
| 200 | -1201 | -j524 | -1210 | -j516 | -1218 | -j501 | -1220 | -j493 | -1225 | -j481 |
| 300 | -1259 | -j282 | -1264 | -j267 | -1271 | -j237 | -1270 | -j225 | -1273 | -j402 |
| 500 | -1271 | -j39 | -1271 | -j14 | -1263 | +j29 | -1262 | +j59 | -1258 | +j82 |
| 1000 | -1224 | +j243 | -1207 | +j286 | -1172 | +j365 | -1134 | +j394 | -1109 | +j431 |
| 1500 | -1161 | +j430 | -1121 | +j483 | -1045 | +j568 | -984 | +j595 | -931 | +j623 |
| 2000 | -1105 | +j579 | -1046 | +j633 | -907 | +j704 | -834 | +j725 | -776 | +j743 |
| 2400 | -1083 | +j736 | -986 | +j754 | -832 | +j811 | -739 | +j816 | -664 | +j817 |
| 2800 | -1073 | +j951 | -928 | +j887 | -742 | +j906 | -629 | +j919 | -544 | +j856 |
| 3000 | -1081 | +j1050 | -889 | +j974 | -672 | +j966 | -557 | +j936 | -481 | +j919 |
| 3500 | -803 | +j1362 | | | | | | | | |
| *3600 | -719 | +j1416 | -583 | +j1258 | -377 | +j1097 | -268 | +j984 | -251 | +j964 |
| 3800 | | | | | | | | | | |
| 3920 | | | | | | | | | | |
| 4000 | -389 | +j1450 | -254 | +j1229 | -174 | +j1028 | -114 | +j935 | -130 | +j889 |
| 4200 | -251 | +j1408 | | | | | | | | |
| 4350 | | | | | | | | | | |
| 4500 | -109 | +j1302 | -79 | +j1070 | -74 | +j895 | -29 | +j824 | -23 | +j795 |
| 4600 | | | | | | | | | | |
| 4900 | -44 | +j1154 | -32 | +j958 | -29 | +j824 | 13 | +j751 | -1 | +j713 |
| 5000 | -25 | +j1104 | -16 | +j934 | -14 | +j800 | | | | |

* .8 of cut-off frequency of facility.