

Lab Receiver Test Data Comparisons

(ARRL QST Review Data, plus some data from Sherwood Engineering)

XX/YY = (preamp-off) / (preamp-on); 14Mhz operation, 500 Hz CW filter, AGC off, High Ip mode.

All measurements in dB. Lab tests and rigs can vary by several dB, so results within 2-3 dB are roughly equivalent.

*Numbers in **RED** indicate data that is 10 dB or more worse than for the K3. (A factor of ten signal power difference.)*

| RIG | MDS (dBm) Sensitivity pre off / on | BDR 'Desense' 5 kHz spacing pre-amp off | BDR 'Desense' 20 kHz spacing pre off / on | IMD DR3 'Intermod' 5 kHz spacing pre-amp off | IMD DR3 'Intermod' 20 kHz spacing pre off / on | Ip3 (dBm) 20 kHz spacing 5 kHz spacing pre off / on | Ip2 (dBm) Out of band Signal Rejection pre off / on | Phase Noise (dBc at +4 kHz) | Receive Current |
|-------------------------------------|--|---|---|--|--|--|---|--------------------------------|-----------------|
| K3 (ARRL) | -130/-137 | 139 (2 kHz) | 139/134 | 102 (2 kHz) | 103/99 | +26/+14 +26 (2 kHz) | +79/+79 | -133 (4 kHz) | 800 mA |
| K3 (Sherwood Eng.) | -130/-138 | | 140 (100 kHz) | 101 (2 kHz) | 104 | | | -139 (10 kHz) | |
| K2 | -130/-136 | 135 | 134 / 126 | 91 | 97 / 95 | +21/+8 (20kHz) +21/+8 (5kHz) | +80 / +79 | -124 | 150-200 mA |
| Ten-Tec Orion II | -127/-137 | 136 | 136/134 | 96 | 92/90 | +20/+6 (20kHz) +20 (5 kHz pre off) | +82/+80 | -138 | 3.6A |
| FTdx9000D | -122/-134 | 127 | 138/137 | 95 | 99/99 | +27/+15 (20kHz) +20/+10 (5 kHz) | +64/+66 | -120 | 110 V Supply |
| IC-7800 See Note 2 | -127/-138/-142 | 115 | 137/138/135 | 89 | 104/103/102 | +37/+21/+11 (20kHz) +22/+7.7/+0.5 (5 kHz) | +98/+87/+84 | -120 | 110 V Supply |
| Ten-Tec Omni6+ See Note 1 | -133 | 119 | 123 (nl) | 86 | 97 | +12 (20kHz) | +58 | -117 | 2A |
| Ten-Tec OMNI VII | -130/-140 | 135 | 137/134 | 84 | 91/91 | +11/-0.5 +6.5 (5 kHz) | +73/+75 | -110 | 2.2A |
| FT-1000MP | -128 /-135 | 119 | 142 / 137 | 83 | 97 / 94 | +15 / +5 (20kHz) | +86/+88 | -118 | 2.8A |
| SDR-5000 (Sherwood Eng.) | -123/-135 | | 123 | 96 (2 kHz) | 96 | | | -123 (10 kHz) | |
| SDR-3000 | -121/-135 | 113 | 113 | 98 | 99/99 | +26/+14 +22 (2 kHz) | +69/+45 | -120 | 2.8A |

| | | | | | | | | | |
|---|---------------------------|-------------------|--------------------------|---------------------------------|----------------|---|------------------------|-------------------|-------------|
| IC-7600 | -131/-139 | 113 | 122 | 94 (5 kHz) 88 (2 kHz) | 106/102 | +28/+12 +10 (5 kHz pre-off) | +63/+59 | -118 | 2.4A |
| IC-756PRO III See Note 2 | -131/-139/-141 | 101 | 121/119/113 | 77 | 103/100/99 | +25/+14/+5 (20kHz) -17/-29/-35 (5 kHz) | +73/+71/+68 | -126 | 3.4A |
| IC-756PRO II See Note 2 | -131/-139/-141 | 100 | 118/116/107 | 76 | 97/95/91 | +20.2/+10.2/-4.1 (20kHz) | ^{+75/+71/+59} | -130 | 3.5A |
| IC-756PRO See Note 2 | -128 / -136 / -140 | 104 | 127 / 125 / 120 | 80 | 95 / 92 / 88 | +15.4 / +4.3 / -6.9 | +64 / +63 / +43 | -130 | 3A |
| IC-746PRO See Note 2 | -132/-140/-142 | 100 | 125/123/118 | 75 | 97/96/92 | +13.5/+3.7/-4 | +72/70/ +54 | -123 | 1.9A |
| TS-870 | -129 / -139 | <i>not tested</i> | 127 / 123 | <i>not tested</i> | 97 / 95 | +16 / +4 | +63 / +63 | -118 | 2A |
| TS-930 See Note 1 | -139 | <i>not tested</i> | noise limited | <i>not tested</i> | 86.5 | -7.75 | <i>not tested</i> | <i>not tested</i> | 110V supply |
| Ten Tec Argo V Model 516 See Note 1 | -132 | 67 | 118 | 62 | 85 | -3.4 | +47 | -108 | 1A |
| Ten-Tec Jupiter See Note 1 | -135 | <i>not tested</i> | 123(nl) | <i>not tested</i> | 85(nl) | +7.3 | +53.6 | -115 | 1.5A |
| Ten-Tec Scout See Note 1 | -125 | <i>not tested</i> | 119 | <i>not tested</i> | 87 | +5.5 | <i>not tested</i> | -95 | 600 mA |
| Ten Tec Pegasus See Note 1 | -132 | <i>not tested</i> | 110 (nl) | <i>not tested</i> | 77 | +7.2 | +44.3 | -104 | 1A |
| TS-50 | -132/-139 | <i>not tested</i> | 113 / 109 | <i>not tested</i> | 90 / 88 | +3 / -7 | <i>not tested</i> | -115 | 800 mA |
| FT-100 See Note 3 | -133/-137 | ~100 | +130/+125 | ~70 | 94/91 | +10/+4.2 | +51.7/+52.8 | -118 | 1.5A |
| FT-817 | -126/-134 | <i>not tested</i> | 106/104 | <i>not tested</i> | 87/84 | +5/-5.6 | +84/+88.4 | -103 | 450 mA |
| FT-897 | -133/-137 | 96 (nl) | 109/106 | 67 | 89/86 | -1.3/-6.7 | +67/+62 | -102 | 900 mA |
| IC-703 | -131/-141 | 95 | 121(nl)/122(nl) | 76 | 89/91 | +11/+1.9 | +56/+47 | -118 | 320-580 mA |
| IC-706MKIIG | -136/-142 | 86 | 122(nl) / 120(nl) | 74 | 89 / 86 | -1.3 / -11 | +36.4 / +38.5 | -118 | 2A |
| Kachina 505DSP | -133 / -142 | <i>not tested</i> | 103 / 103 | <i>not tested</i> | 99 / 97 | +15.5 / +3.5 | +49 / +30 | -117 | 2A |

Note 1: Only one set of numbers is listed because these radios use a fixed gain front end which is not switchable. Compare their dynamic range and IP3 numbers to other rig's by using similar MDS figures to determine which set of numbers to use (pre-on / pre-off) for comparison.

Note 2: The IC-7800, IC-756PRO & PROII and IC-746PRO have two different gain preamps. Numbers are for Pre-Off / Pre #1 / Pre #2. Pre #2 adds more RX gain than Pre #1 at the expense of dynamic range. Higher preamp gain reduces strong signal dynamic range. For comparison, Pre-Off and Pre #1 most closely match the K2's and other radio's settings and are the most commonly used positions.

Note 3: FT-100 5 kHz dynamic range numbers taken from swept dynamic range graphs in ARRL expanded test report.

ARRL Results are from QST rig reviews (K2, 2/04 (K2/100) and 3/00 (K2) reviews); IC756 PRO, 6/00; Omni6+, 11/97; FT1000MP, 4/96; Scout, 12/93; TS-50, 9/93; SGC-2020, 10/98; IC706MKII, 7/99; Ten Tec Pegasus, 2/00; Ten Tec Jupiter, 6/01; TS-930, 1/84; Kachina 505DSP, 5/98; Patcom PC-1600A, 12/00; FT817, 4/01; FT-100, 6/99, Argo V 4/2003; FT-897, 5/2003; IC-703, 7/2003; Orion II 9/06; IC-7800, 8/04; 756PRO-III, 3/05; FTdx9000D, 8/05; SDR-3000, 10/09; IC-7600, 11/09). Sherwood Engineering results are from their [receiver test results page](#). K3 (QST, 4/08) (Sherwood Engineering, 2/08); SDR-5000 (Sherwood Engineering, 2/08); OMNI VII, 7/2007