

Two Receiver Reviews

by Don Moman

(These originally appeared in the CIDX Messenger. Although the reviews are of most interest to the SWL, the MW DXer should get some idea of these sets' capabilities from them. As we've mentioned before, all-band sets are generally a poor buy for MW-only DXing, and these are no exception. But if you like SWL'ing also.....)

The Panasonic RF-3100

One of Panasonic's latest additions to their Command line of SW receivers is the model RF3100. It's a general coverage PLL type of set that tunes MW, FM and SW. A "no frills" type of set, it lacks such luxuries as a clock, timers, memories and such things. I compared this set with the Sony ICF 2001, the Panasonic RF 6300, the Yaesu FRG 7700 and the Drake R-7, under a variety of situations. Let's see how it fared against this rather unequal competition...

Physical Features.....15" wide, 5" high and 10" deep. Weight is about 7 lbs. without batteries. Plastic case. Runs on 117 VAC (built in AC supply) or 8 "D" cells. Current draw is 260 mA, 290 with the pilot light on. This is a fairly high current consumption for a battery set, but fortunately the 3100 functions normally on 8 D size NiCads, even with their reduced voltage output. Convenient tilt up stand for a better viewing angle. 3½" front mounted speaker.

Internal Construction.....Typical well packed Japanese insides. Much easier to work on than the Sony 2001. Uses a 6¼ x 3/8" ferrite loop for MW reception, running parallel to the back of the set. The 455 kHz filters are the inexpensive type and due to the construction and layout of the board it would be very hard to install better (and larger!) IF filters. The digital counter circuitry is enclosed in a metal shield and did not seem to cause any digital noise to be introduced in other sets or antennas.

Tuning.....Like most recent sets, the 3100 uses a broad band front end employing band pass filters instead of a manually tuned preselector. PLL tuning is used to eliminate the drifting problem found in some earlier Panasonic models. A 31 position switch is used to select either MW, FM or 1-29 MHz SW bands. A conventional VFO is used to tune within these ranges. An interesting feature is that the MW band is not broken in the middle like the R-1000, FRG-7700 etc. Tuning is continuous from 525 to 1610 kHz. The tuning rate is reasonable, a little fast for SSB, and has some backlash in the reduction system to make it even harder. However, for a set in this price range, it is nothing to complain about! Resolution of the counter is to the nearest kHz (.1 MHz on FM). Measuring the frequency of an unknown signal is easy and no offset is needed--unlike the R-1000 and FRG-7700 where you have to allow for an offset in either sideband position.

Selectivity.....Two positions are available; the manual does not have any specifications in it, but the wide is likely 6 kHz wide @-6 dB, while the narrow is likely 3.4 kHz. General listening indicated the narrow filter was equal to or slightly better than the 4 kHz R-7 filter, but significantly wider than the 2.3 kHz R-7 filter. Of course, the skirt and ultimate selectivity of these inexpensive filters are considerably inferior to those of the R-7, but under a variety of DX situations amid heavy interference the 3100 did a decent job. In fact, I was most impressed by the readability of its audio under heavy interference compared with the R-7. As a convenience feature, the narrow filter is automatically engaged

when you press the BFO button. For SSB reception in the ham bands the narrow filter is inadequate. However, you need to go to more expensive sets before you get really good filters (and then, not always!)

Sensitivity and Overloading.....Reception using the built-in antenna on SW is good, depending to a slight degree on the actual frequency involved. It certainly is on a par with most other portables. In fact, during the testing I was surprised to pick up R. Chinchaycocha, Peru on 4860 kHz. Not a common catch up here, and for a 36" whip in the basement, a good catch indeed! Connecting the 3100 to an outside 85' random wire through a 3 MHz hi pass filter (to prevent overload from local MW stations) improved reception a great deal, as it should. On all SW frequencies tested it was equal to the R-7 and in some cases was more readable due to better audio. Also surprising was that the S-meter reading compared very closely to the R-7 (at least to 20+S9 which is the maximum on the 3100).

MW pickup on the internal loop was good, with several 1000 km plus daytime MW stations heard. Locals can be nulled quite effectively to attenuate splashover. The loop is not defeatable even though the manual leads one to believe otherwise. No improvement in MW reception was noted with the outside antenna. No doubt due to the internal low frequency roll-off purposely built in to prevent overloading! However, there are several ways to get around it--like a couple of turns around the ferrite bar to couple the signal from your external antenna into the set.

FM sensitivity was adequate, but not as good as the 2001. Several stations just above the noise level on the 3100 were received quite clearly on the 2001. It might be significant to note that this was on the internal whip, and the Sony has a much longer whip aerial. FM overload was not noticed; however with all the cable FM leakage, it's hard to tell what is overload or leakage!

Overload on MW was not too bad; 930 appeared on 950 also (2x930-2x455) and 1480 was heard on 570 (IF image). However, if you coupled much more signal into the set through the method mentioned above, I'm sure you would have a problem. That is, if you are blessed with a goodly number of super close local stations like I am.

On SW the set showed none of the 4 MHz image problems the older Panasonic radios had. But it did produce spurs in the 20-30 MHz range due to very strong VOA and AFRTS signals in 11 and 13 meters. The tropical bands were also subject to overload from MW signals, but a resonant SW antenna or a 3 MHz hi pass filter helped greatly.

Overall Conclusions.....Even though I've been pretty tough on the set, I think that, in its price range, the 3100 is a pretty good value. While it can't be expected to be an R-7, it does provide a good level of performance. Other sets in this range suffer from many of the same problems, some to a worse degree. It's worthwhile to note that all sets under \$1000 (and some over...) suffer poor selectivity due to the cheap filters used. I know the economic reasons for their use, but it shouldn't be too much to ask just for them to leave a little room for us to add a better filter.

(ed note: R. West price \$319, SW Horizons C\$475)

