



SONY.

FM/AM PLL SYNTHESIZED RECEIVER

ICF-2001

by Pete Taylor

I saw my first ICF 2001 in London last summer in a hifi shop, and smugly went about punching up all the local MW stations for the sales clerk, who was impressed, but not to the point of dropping the \$370 price (included VAT.) I bought it here in San Francisco in November for about \$300. It lists for about \$325, but has been had for as little as \$280 in New York.

The ICF 2001 weighs about 4 lbs with batteries, is 12½" wide, 6 ¾" high, and 2½" thick. It comes with mini-earphone, shoulder strap, external AM antenna, and 120v AC adapter. AM coverage is 150-29,999kHz; FM goes from 76-108MHz, which takes in the Japanese FM band but not the eastern Europeans. The computer takes two AA batteries, and the radio takes 3 D batteries. Scanning may be done up or down the band and has two speeds. The "L" buttons determine the upper and lower frequency limits when you use the automatic scan mechanism. The built-in ferrite antenna covers 360-2143 kHz. There are six memory buttons. It has a BFO (1 kHz increments), a "DX" switch which varies sensitivity (3 position), and an antenna tuner. (It also has manual BFO). Five sequential LEDs are used to show signal strength. You may depress a button and light up the frequency display. It is ideal for checking //s on SW (or elsewhere on AM). It has a "sleep" switch which allows you to leave it on for up to 90 minutes before it turns itself off.

I am a practical DXer and not an engineer, and my experience with it ranges from the beaches of Cabo San Lucas to the mudflats of Tacoma in December. Here are some of the things I have run into with the ICF 2001:

(1) Poor battery life. I must be averaging 5-6 hours on the D batteries. The computer batteries died in Mexico after maybe 30 hours. Specs call for 9-10 hours and a year, respectively.

(2) Physical instability. It is a slim unit, but the back half must be loaded because it falls over very easily. On some tufted carpeting, it won't stand up at all. It does have about an inch wide extension which when it's on its back, raises the top about 15° off of horizontal. (I'd like about 45°).

(3) Some-type antenna connection. And recessed at that (not good for chubby fingers.) I prefer the depress-and-insert type for expediency.

(4) Overloads easily. While listening to KNX the other night (not a shabby signal) in maximum sensitivity, I inserted the external antenna and was then listening to KKIS-990. I had to back down the "DX" switch to lesser sensitivity.

(5) Award scanning. If you scan slowly, it takes forever. With fast scan, it is most difficult not to bypass a mystery signal and then having to slow scan back to where you think it was. This is mostly applicable to SW DXing.

(6) Memory limitations. There are six memory buttons which can be used on either AM or FM, but not both, for a total of 12 (6 AM, 6 FM). If buttons 1 & 2 are on 93.1 and 104.1, but the unit is on AM, you get nothing when you depress them.

(7) Power switch vulnerability. More than once, the unit has turned itself on inside my suitcase. I use large rubber bands (or tape) to keep it off.

(8) Slide pots - no big deal. It requires more physical movement to move the volume, bass, and treble slide pots up and down than it would to turn a knob. Due to the unit's instability (#2 above) you have to hold the unit with one hand to use these pots, or put it on its back, lurching over it as you use them.

(9) Other/miscellaneous. The manual display light barely makes the frequency display readable, and does not provide enough light to write by. The BFO is not terribly stable. And to quote its own manual, "Reception of 299, 350, 400, 5760, 11520, 10700 and 21400kHz may be difficult because of internal spurious signals generated by the built-in oscillators."

Another problem I had with it is the fact that it does not take large earphone jacks, but I think this is a key to the overall problem. The unit is caught in that gray area between being a handy portable and a serious communications receiver. It is pretty expensive for a portable, but not quite up to snuff as a serious DX unit. Overlooking the battery problem and its not-so-hot image rejection in busy signal areas (LW DX here is impossible, unless I go hide behind some mountain) I think we just have to regard it as one of the better compact units which as the first of its kind, will surely undergo improvement modifications in the years to come. If suitcase room is a factor, I'd take it. If not, I'd revert to the ICF 6700W.



the irca technical column

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R30-4000

In the Mar. 28/81 DX Monitor, there was a review of the Sony ICF-2001 by Pete Taylor. Since then, Don Moman has written an article on this radio for the CIDX Messenger. Following is an edited version of that article, which adds to the information given in Pete Taylor's review:

To say this receiver is unconventional is an understatement! No conventional meter or tuning dial or even a tuning knob. One is faced with a calculator style key pad and sliding controls for volume, bass and treble. Two thumbwheel knobs for SSR and antenna trim are the closest thing to conventional knobs that you will find.

The tuning system is very flexible and allows the user to tune a station by several different methods. To start, one has to punch in the frequency and press "execute". You are now tuned to that frequency! You may then choose to enter this station in any of the 6 memory locations for instant recall later or as one of the frequency limits for the scanning function. To scan a band, all you do is enter both the upper and lower limits of the band in L1 and L2 and press "scan". The receiver will scan in 3 kHz increments. A slide switch on the side allows the receiver to stop on strong signals if desired. In practise, the auto stop performs poorly as it often misses stations that are in a fade or stops off frequency due to the odd 3 kHz scanning rate. 5 kHz would have been much nicer for the SWL. On FM the rate is .1 MHz. A 3 button system of manual tuning is also provided. The displayed frequency can be changed by 1 kHz (.1 MHz on FM) by pressing either the "up" or "down" button. Depressing either of these along with "fast" increases the rate to 10 kHz (.2 MHz FM). One annoying feature is that the fast scan does not occur instantly when the button is pressed. Say you are scanning the BCE and are tuned to 910 kHz. Since a rate of 10 kHz is very convenient on BC³, you press both "up" and "fast". The display first goes to 911 then 921, 931 etc. Each time you stop you wind up another 1 kHz off the channel spacing.

Like most 3-meter circuits, the 5 LED tuning indicator will light all LEDs on an average signal. And, of course, if you use the receiver outside the sunlight will make them very hard to see. A bar graph display built into the main LCD panel would have been better. Unattended recording is no problem as the set "remembers" the last frequency it was tuned to. This is unlike the Drake R-7 which returns to a predetermined band when power is applied, and not usually the band you want!

Since power consumption is quite high and alkaline batteries are not cheap it would be desirable to use the more economical rechargeable Ni-Cad battery. According to Larry Magne in the 1981 WRTVH "using a trio of rechargeable Ni-Cad cells results in suboptimal performance". This was due to the .25 volt/cell less output that Ni-Cads are known for. However, I have found that no loss in performance occurs with these cells; quite a lot of signal seems to come in on the AC adaptor line, which might cause battery operation to be less sensitive than AC operation unless one is using an external antenna. So Ni-Cads weren't a problem with my radio. With the normal 1.2 amp/hour cells you may expect about 5-6 hours of operation. When the cells die however, it only takes about 5 seconds, so one would be advised to carry a spare set under DX conditions.

Without performance to match all these nice features, the set isn't worth much! The main receiver here is the Drake R-7, and even though the two sets aren't intended to be in the same category, some interesting observations were made. The R-7 has excellent sensitivity, selectivity and signal handling, but has "communications" style audio and a relatively slow and confusing tuning system. Rapid frequency shifts are much faster on the 2001 and even memory operation is quicker. Other sets with memory require you to select which memory channel with a rotary switch and then press a memory recall. Since the 2001 has separate buttons for each memory only one touch is needed.

SW sensitivity can be quite good, especially using an external antenna, but the antenna trimmer doesn't always peak the signal, resulting in poorer sensitivity. On weak tropical band signals, the 2001 can produce a more readable signal than the R-7 due to better audio. On higher SW bands, the sensitivity equals the R-7 when the antenna control peaks properly. Perhaps a good matching tuner/preselector is needed. Selectivity is provided by a 10.7 MHz 2nd IF (borrowed from the FM section) and is rather broad to say the least! Strong signals seem to take up about 10 kHz in total and hearing

a weak station 5 kHz from a strong one is a problem, so it's no contest with the R-7. A wide/narrow switch would be a very welcome modification.

The 2001 is fairly capable of handling spurious signals on SW. Careful adjustment of the antenna control reduces most spurs to the point where they are no problem, and I can usually leave the attenuator control at its most sensitive. With several 50 kw BCB stations nearby, my random wire puts out about 2 volts across a 50 ohm load, yet the 2001 handles the higher SW bands better than the Kenwood R-1000; the tropical bands require a 3 MHz high pass filter for spurious free reception on either receiver. SSR reception is surprisingly non-critical for a portable; the wide selectivity means it's a poor ham band performer, but it's not bad for utility DX. FM performance is hampered by overloading in this urban area.

As a MW DX set however, the 2001 leaves a lot to be desired. The internal ferrite loop is small and directivity is reduced because the whip antenna is connected as well. The internal loop will also defeat the purpose of a good external loop, so some major surgery would have to be done to make it even acceptable for MW DX. A good tuned loop or preselector is badly needed to reduce overload on the MW and LW bands. Perhaps the nicest feature it has for the MW DXer is the ease at which it can check for SW parallels, propagation forecasts etc.

Audio quality is good from the 4 inch speaker. The separate tone controls can improve readability on weak signals. 1.2 watts of relatively undistorted output is claimed. A low level (-60 dB) tape output suitable for connecting to the microphone input on a cassette is provided. I would prefer the standard 0 dB high level output found on most sets, but since many manufacturers have eliminated the "aux" input from their recorders, such an output is not compatible without an external attenuator.

Quality control is somewhat lacking on this set. Dan Robinson (Oct. 80 FRENEX) noted quite a few variations between different sets, and the first 2001 I got would only produce weak and distorted audio. My present one has developed an intermittent in the RF section, and the "execute" key now requires quite a hard push to activate it. Moral: check it over carefully before you buy one, and compare as many as possible for variations in sensitivity and selectivity.

This set would appear to be well suited to the visually impaired listener due to the key pad entry system. The "5" has a raised dot and the "execute" has a raised dash on those keys.

Like any product, the 2001 will no doubt be followed by a "new and improved" version. For my money, a new version should incorporate the following: A second, narrower bandwidth for AM and even a third one for SSB. The ability to scan the memory channels would be nice especially for utility DXers. Auto scanning in 5 kHz steps instead of 3 kHz. Incorporate a decent MW loop (like the Panasonic RF-2200) and make it possible to remove it from the circuit so other external loops and directive antenna systems may be used to their fullest advantage. And of course, make the front end a little more "crunch proof"!

As usual, your comments and/or questions (SASE appreciated) are welcome. My address: Don Moman, 6815-12 Ave., Edmonton, Alberta T6K 3J6 Canada