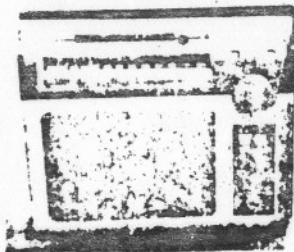


by Gerry Thomas and Charlie Barfield

When we first read the flyer on General Electric's new "Superadio" (model 7-2880), we thought, "This is too good to be true!" Here, according to the brochure, was a radio designed to not only produce "extraordinary" quality audio from "favorite stations in distant cities", but also pull in "weaker, hard-to-receive stations adjacent to strong stations." These were not just casual catch-phrases either. The brochure backed them up with mentions of a 7-7/8" ferrite rod antenna, an air-gap variable capacitor, TRF stages on both AM and FM, and four (!) tuned IF circuits on AM (3 on FM plus a ceramic filter). As if this weren't enough, the brochure also boasted of a 6 1/2" speaker, 460 (!) hours on a set of alkaline batteries, separate bass and treble AF controls, and "careful quality control." As the opening paragraph of the flyer stated, the objective of GE's engineers was to design the best performance portable in their history....we had to get our hands on one. A few phone calls revealed that the Superadios were enroute to the warehouses and weren't yet available. Luckily, Mr. Ray Douglas, the local GE rep, had one he was willing to let us test for a couple of days. We thank him and present the following results. Please realize that these results are based on a sample size of one. Other Superadios may differ from the one tested but hopefully the following performance findings will be fairly generalizable. Also, because a schematic was not available (and because we were reluctant to dismantle the circuitry of our "loaner" Superadio (hi)), this review will be limited to operating and performance considerations.)



Outward appearances: First impression? It's Big. Measuring 12" wide by 10 1/2" high (handle up) by 4" deep and weighing nearly 9 pounds (with its 6 D cells), the Superadio has to be one of the more substantial AM/FM portables on the market. Its cabinet is black and silver in color and sports a rugged-seeming fold-down handle. All controls are on the right side and include separate loudness, bass, and treble controls (all rotary pots), an AM/FM selector switch (flipper-toggle), defeatable AFC for FM (also a flipper-toggle), a vernier tuning knob, and a push-on/push-off power switch. There is an earphone jack and a collapsible, fold-down 38" FM whip antenna (with insulated grip) but no provision for an external antenna connection. Also eye-catching: a large, expanded steel speaker grill; a frequency scale that is "tilted back" for easier table-top readability; and those musical words, "long range" and "high selectivity" on the dial face (ahhh).

Turning it on: For a second we thought we had a Wurlitzer. Audio quality was astounding for a portable and audio gain was almost ridiculous. Never were we able to open the gain control above 1/3 on a daytime AM or FM local (at least not in an enclosed area)..this has to be one of the higher efficiency speakers around. The separate bass and treble controls allow audio shaping to taste and, combined with its juke box-sized sound, the Superadio is one excellent listening/entertainment portable.

But what about DX? Since the Realistic TRF has become the standard of comparison for portable MW DX, we spent a few hours comparing the TRF and Superadio in side-by-side tests.

Sensitivity: Differentiating sensitivity from audio gain in simple listening tests is always a little tricky. With its strong audio output the Superadio certainly gave the impression of being much "hotter" than the TRF, but real differences in pure sensitivity were less overwhelming. Sunset skip did occur a minute or two earlier on the GE but daytime DX produced nothing on the GE that wasn't also audible on the TRF. Like the TRF, the sensitivity of the Superadio below about 600 kHz was poor. Nonetheless, the edge in sensitivity has to go to the GE.

Selectivity: This comparison was very interesting due to the fact that the two radios use different methods of attaining selectivity. The TRF's 2-IF plus single tuned resonator system produced a narrow-nosed, broad-skirted passband, whereas the GE uses four conventional tuned circuits coupled together between the mixer and IF amplifier which resulted in a broader-nosed but steeper-skirted passband. The performance results of this were that the TRF tended to give slightly cleaner split frequency (i.e. foreign) reception while the GE tended to better reject strong splash that was originating at least 5 kHz distant (i.e. domestic channels). As an example of the latter condition, distant WFLA-970 can be heard during daylight next to WBOP-980 (a moderately strong local) on the TRF only if the TRF is positioned to null WBOP. Rotating the TRF out of its null results in intelligible WBOP audio splash. The Superadio, on the other hand, need not be rotated to null the local in order to hear distant WFLA. Interference from WBOP is still present but is at a lower level and is unintelligible. It seems as though the GE's passband has a superior shape factor but its width is designed for domestic (i.e. 10 kHz separation) selectivity and for optimal fidelity. As a result, the TRF's narrower peak performs better on most splits despite its less selective, broader skirts. This is not to say that the GE is incapable of split-frequency reception, far from it. Every split that was audible on the TRF was also audible on the GE albeit at a slightly reduced quality.

The selectivity question, then, is just about a toss-up--the GE seems a little better for domestic DX, the TRF for foreign splits.

Frequency read-out: Like the TRF, frequency calibration is poor on the GE. Unlike the TRF, a fairly high resolution logging scale is provided on the GE which, by means of a self-constructed conversion chart, can easily provide 10 kHz determinations (parallax error is insignificant). For those who like re-calibrated custom dials, the Superadio appears to be a far easier project than was the TRF (e.g. easier access scale, 5 1/2" dial as opposed to the TRF's 3 1/2" scale, etc.)

FM Performance: Neither of the authors feels qualified to make definitive statements regarding the FM section of the Superadio. Our impression, however, is that the GE's FM performance is very good. Apparently the TRF circuit in the FM section is at least partially responsible for our stronger locals appearing only on their designated frequencies (and not all over the band) and for the establishment of several New Orleans stations (about 175 miles to the west) as new "locals" here. A more intelligent evaluation of the FM performance of the Superadio is needed, though.

Some closing thoughts: The new GE Superadio has a lot going for it. Besides being a capable MW DX device, it also provides excellent audio fidelity (hearing distant clear channel stations in hi-fi is a disarming experience) and an FM section that also appears to be DX-able. Probably its principal drawback, from a DXer's standpoint, is its weight. A few minutes of tilting and rotating to null and peak stations gives the impression that the Superadio is gaining weight by the minute. A rotatable external antenna like the Panasonic RF-2200 has would have been nice, but a turntable arrangement could be devised to reduce arm-weariness. (see "An Outboard Ferrite Loop for the Superadio" p. 90.) The only other thing that might be considered a shortcoming is the lack of an external antenna terminal. However, any number of plans for external antenna coupling are in the DX literature so this is a minor complaint.

All in all, GE's new Superadio fills a niche in the market and, at a list price of "about \$72", does it quite reasonably.

#### More Thoughts on the GE Superadio by Ed Satterthwaite

I've been comparing my GE TRF to the Realistic TRF, and have the following to add to the Thomas/Barfield conclusions:

Getting reasonable copy on channels adjacent to strong locals is much easier on the GE, as described above. In very few cases, however, has the difference affected my ability to log a station.

The GE has separate bass and treble controls. This allows limited shaping of the audio pass band which, in my experience, can improve readability. (I find I usually set the TRF for maximum bass, which cuts out a fair amount of splatter and electrical noise but leaves rather muddy audio.)

As others have pointed out, later examples of the Superadio (model 7-2880B) come with external antenna terminals (AM and FM). In my limited experiments with relatively short, random-length wires, attaching an external antenna has actually decreased apparent AM sensitivity. I suspect that a good outboard antenna tuner is essential.

I often listen to KNEW-910. Harmonics of the IF are noticeable and somewhat annoying here on both the TRF and the Superadio. The only bothersome spur (weak KCBS audio on 880 during the day) also appears on the TRF and may well originate at KGO's nearby transmitter.

FM performance of the Superadio is good enough for me. Because the FM spectrum is so full in this area (San Francisco), sensitivity is hard to judge (and not necessarily desirable), but I did note a Fresno station for the first time on FM. Selectivity seems very good, especially compared to other portables, and the sound quality is nice.

Looking at the schematic, it appears that the RF transistor is bipolar, and that the entire AM mixer, oscillator and IF amplifier (as well as the power audio amp) are all in one IC. The first point suggests that overloading might be a problem with a good external antenna. My neighborhood suffers from a great deal of locally-generated RF noise at all hours, so I have never required more sensitivity and have never seriously considered a long wire here. Using the internal antenna, I have had no serious problems with spurious responses in this strong-signal area; the extent to which such signals block adjacent channels is harder to judge.

The second point probably means that opportunities for worthwhile modification of the Superadio are very limited. One might imagine replacing or augmenting the multi-transformer IF filter with a mechanical one (or perhaps a good ceramic), but achieving good deep-skirt selectivity seems doubtful--the input and output signals would be separated by just one pin on the IC. Because of the IC packaging, it's not even obvious how or where transformers could be added.

Here's a possible tip for other users of portables with those abominable ear plugs. GE and others market a stereo headphone adaptor (GE part no. 5-1277, \$3.25). On one end, it has a 3.5 mm earphone plug; on the other, a phone jack wired to feed the same audio to both channels of stereo headphones.

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REVIEW OF G.E. SUPER-RADIO, MODEL 7-2880. By: Albert S. Lobel

The G.E. Super-Radio has been out for sometime and a lot has been said about it. The receiver is a very inexpensive and fine piece of DX gear with a few simple modifications & adjustments. More will be said about this later.

About a year ago I was looking for a small and very inexpensive portable that could be carried around the house and even out to the yard while I was doing the yard work. I looked at several receivers before I settled on the G.E. Super-Radio. At the time I did not have DX'ing in mind. All I wanted was something to mainly pick up my local AM as well as FM stations so I could listen to them while doing other things. I went to the local G.E. outlet in San Diego and found a completely re-conditioned G.E. Super-Radio on sale for only \$46.95 with a complete 90 day warranty on all parts and labor direct from G.E. I came home with the G.E. Super-Radio. It was a very wise investment.

When I got the G.E. Super-Radio home and installed batteries I was quite amazed at not only the sound quality of this receiver but at its pulling power. The receiver was set on FM and as soon as I turned it on I heard an identification of KDB-FM from Santa Barbara at approximately 190 miles north. Turning the dial really amazed me at what the G.E. Super-Radio could do on FM. That night I did some AM DX'ing with the G.E. Super-Radio and made comparisons to my much more expensive Yaesu FRG-7. In some instances the G.E. Super-Radio either met or exceeded the Yaesu FRG-7. Infact it was even better on some frequencies. And the ferrite loop in the G.E. Super-Radio was great on the AM band; it was almost as sensitive as the Radio West ferrite loop and just as directional.

My G.E. Super-Radio did come with one very slight factory defect. Maybe they just did not adjust it correctly when reconditioning it. However, as I said, the defect was only very slight. The tuning dial was a little hard to turn. However, a shot of TV tuner cleaner and it was repaired. The G.E. Super-Radio has performed flawlessly ever since. It has become not only a casual listening receiver but has often been used as a DX receiver. Those of you who read my recent descriptions of my vacation to Yosemite and other places know how well my G.E. Super-Radio performed. Except for the car receiver (a very poor excuse for a receiver) the G.E. Super-Radio was the only real receiver I had with me on that vacation.

I have made a few modifications to my G.E. Super-Radio to make an even better DX receiver. As it comes from the factory the G.E. Super-Radio has an output for transistor radio type earphones. This is fine if you want to listen that way. It lacks an tape out jack which most DX'ers will find quite useful. Using a schematic provided a long time ago by Grant Manning I installed a tape out jack. The jack itself was placed on the back panel just below the antenna screws. I used an RCA phono type jack; however, you can use any convenient type jack for the tape out connection. I also installed dial lights. This is very simple to do and very inexpensive. I drilled two small holes at each end of the dial just above the "log" scale. Then installed a 3-volt grain of wheat bulb in these holes. One lead of the bulb at the left side of the dial was soldered to the cold side of the on/off switch. This way the lights would not work with the receiver off! The other lead of this bulb was connected in series with one of the leads of the other bulb. In order that the lights would not be on when I did not want them on to conserve battery power I installed a normally open momentary push-button switch by connecting the other lead of the right bulb to one terminal of the switch then soldered a lead from the switch to a nearby ground connection. One more thing to make the bulbs shine down the dial and not glare was to cut small strips of 3/8 inch black dymo labeling tape and attach them to the sides of the dial covering up the bulbs. This was done on the plastic lens covering the dial. The bulbs would then shine down the dial to the middle. Note that I said the bulbs were only 3-volt bulbs. The G.E. Super-Radio operates on 9-volts. Connecting the two bulbs in series would allow them to operate on 6-volts; but what about the extra 3-volts? This problem was overcome by installing a small resistor in between the two bulbs. I do not recall the ohm rating of the resistor but any small ohm resistor should do the job. You could even use 4.5-volt bulbs if you find them and you will not even need the resistor.

A few weeks later I sent the G.E. Super-Radio to Bruce Elving of FM Atlas for installation of an FM-SCA decoder. When I got the G.E. Super-Radio back I now had a receiver that was very very good on FM, FM-SCA as well as AM. I have often used it to DX on all three bands. It does very well on all three bands and has been a fine investment.

I would highly recommend the purchase of a good G.E. Super-Radio to anyone. It is a very fine piece of portable DX equipment. They retail at around \$90.00 new. However, you can often find them at much less than that price as I did. With the parts used to install the tape out jack and the dial lights plus the shipping both ways to Bruce Elving for the FM-SCA decoder and the cost of the decoder my G.E. Super-Radio wound up costing me about \$65.00. That was \$65.00 very well invested.

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If you don't DX in the summer, that is the time to dig out your receiver manual and align the RF, IF and oscillator sections. Several good articles have been written on the subject. Remember, to hear that exotic DX, a well tweaked receiver is your best friend.