

## Create your own "Old Time" memories with MFJ'S 8100 Shortwave Regenerative Receiver

Not many of us were around in the early days of broadcast radio, but we've all heard stories about the regenerative receiver and the impact it had on the fledgling radio industry. The thrill of listening to the local radio station on a crystal set soon gave way to the urge to hear distant stations. It was discovered that, using an amplifying tube and feeding the detected signal back into the tube's input, and controlling the ensuing *regeneration*, the receiver became much more sensitive. Now it was possible to tune in stations from far away, and the never ending search for DX began.

However, just as with today's computer engineers, yesterday's radio engineers were not happy with the regenerative receiver. Before long there was the Regenerative Receiver 1.1: The Superheterodyne receiver. The general radio industry never looked back. But, because of its simple design – basically an amplified crystal set – the regenerative receiver retained a place among radio hobbyists who enjoyed building and using them throughout the decades.

One of the reasons for the regenerative's popularity today is that it's the easiest way to receive CW and SSB transmissions used by amateur radio operators. This is in addition to being able to pick up the powerhouse AM broadcasters on the shortwave bands. In short, the old regenerative receiver is still the simplest, all-purpose radio for today's listener which also happens to be the smallest and cheapest radio of its kind on the market.

### ◆ The MFJ-8100

Virtually buried in its amazing inventory of products lies MFJ's 8100 World Band Shortwave Radio. This unassuming radio, with its tiny footprint and homespun look, gets overlooked by most radio enthusiasts because it's, well, too simple. Sporting just four knobs and one button, this radio is easy to miss. Who would believe that with just twenty feet of wire attached to the back, this radio could

bring in the world's shortwave voices on the 49, 31, 21, 19, and 16 meter broadcast bands and the 80/75, 40, 30, 20, 17, and 15 meter ham bands? It's amazing.

With its simple, silk-screened, semi-circle dial and plastic slide rule indicator attached to a 6:1 vernier tuning knob, surfing the shortwave bands is incredibly easy. The five position band switch allows you to quickly jump from 80 meter CW to 16 meter shortwave broadcasts with little effort. Yet the precision of the knob and clean separation in the tuning circuit makes distinguishing individual CW transmissions on the congested ham

bands a breeze.

Of course, the main attraction of this radio is the regeneration knob, and I'll admit it took me a few minutes to get the hang of it. My wife had to come in and ask what all the howling and squealing was for, "Does it have to make that noise?" she asked. Well, no. With a little practice it's possible to set the regeneration once in one band and tune all the broadcasters in that band without retouching the regeneration dial – no more howling.

At only 7" x 6" x 2-1/2" and just under 2 pounds, the 8100 takes up very little desk space. In fact, it could be an excellent travel radio. Powered by an in-board 9 volt battery, this radio would take up very little luggage or backpack space as well. With 10 or 20 feet of hook-up wire and a clothes pin you can still tune in the BBC World Service in the middle of nowhere with no access to power.

### ◆ What's Missing

You're missing the point if you're looking for bells and whistles from this little rig, but I'll detail the shortcomings anyway. It doesn't have a signal strength meter (Who cares? You can tell whether or not you can hear the signals), no digital tuning indicator (Well, we're all spoiled by knowing exactly where we are at all times, big deal!), no AM broadcast band (So? Don't you already have one?), no FM band (Are you kidding?), no speaker (That's right, you have to plug in your own Walkman style headphones or small speaker), and no power supply (It doesn't need one, it runs for hours on one 9 volt battery).

I also found that this unit was susceptible to interference from nearby computers, so it's not a good candidate for tuning in digital transmissions such as WEFAX, RTTY, or SSTV. But, that's alright because you would need a much better receiver for that anyway. And, while you can run a small Walkman style speaker set from the audio output, you'll be much happier using a pair of amplified speakers for non-headphone listening.

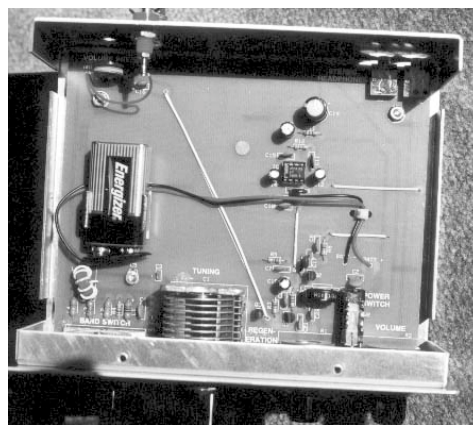
### ◆ Using the 8100

Once I got the 8100 out of its box, I scrounged up a pair of headphones, opened the 8100's enclosure and slipped a fresh 9 volt battery into the convenient holder. It's recommended that, for extensive use, you mount the battery holder on the back of the receiver. Taking off and replacing the 8 screws on the cabinet just to change the battery is inconvenient.

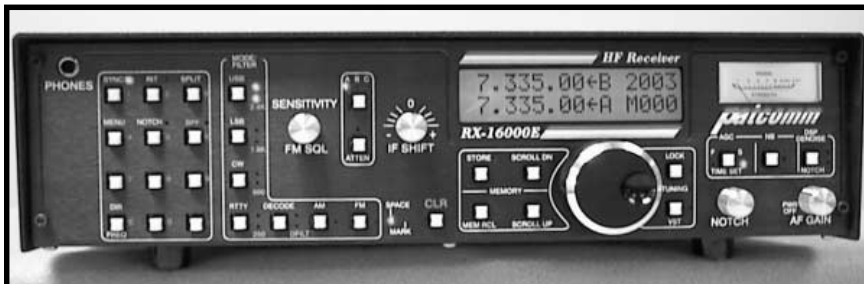
Now to put this little receiver through its paces. For indoor test purposes I used a Grundig AN-03 Compact Antenna and for outside antenna testing I used a 137-ft. all band ham antenna. Reception was obviously better on the large outdoor antenna, but I was impressed with what



*The MFJ 8100 World Band Shortwave Radio: small, simple to use and inexpensive it tunes 49-16 meters broadcast bands and 80-15 meters on the ham bands. (Courtesy MFJ Enterprises)*



*Inside the MFJ 8100 as wired by the pros. Tempted by the small number of parts and easy layout? You can wire it yourself with the kit version and save \$20! (Courtesy Ken Reitz)*



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I was hearing on the AN-03. There was plenty of action on the ham bands and good listening on the broadcast bands as well. Still, even with the outdoor antenna the 8100 could not match the capabilities of the receiver portion of my Kenwood TS-140, nor should we expect it to. The 8100 costs hundreds less.

There's a little bit of a knack to tuning a regenerative receiver. It takes a steady hand making very small adjustments to zero in on the signal. Once you get used to it, it's actually kind of fun. You'll notice that the print on the dial is very small and you may have to invest in a pair of reading glasses to see where you are.

### 8100's Two Options

One of the great things about the 8100 is that it's offered by MFJ as a fully wired and tested unit or as a kit. The big advantage of the kit is that it's \$20 less. The big disadvantage with the kit is that it's a kit. If you're not handy with a soldering iron; can't tell which end is up in a pictorial diagram; have difficulty picking up tiny little components with big fingers; are prone to confusion or have poor eyesight, my advice is to let MFJ do the wiring. Give them the extra \$20 with a smile on your face. This is not the kit on which a raw beginner should start out.

If, on the other hand, you enjoy putting kits together this is a great radio to add to your collection. This is especially true if you are a ham and have already put together one of the numerous QRP transmitter kits available today. You will need a transmit/receive switch to avoid damaging the receiver when keying up.

Either way, the 8100 comes with a well-written 20-page 8-1/2 x 11-in. instruction manual which explains in complete detail how the regenerative receiver works. Receiver controls and connections are thoroughly explained as is exactly how to use the regenera-

tion feature on this radio. There's an informative description of the various bands tuned by this radio for the shortwave newcomer as well as a sample SWL logging page which can be duplicated to keep track of your own DX journeys. A complete parts list, parts diagram, and schematic diagram are also included. For advanced experimenters there are tips on modifications for adding the 12 and 10 meter ham bands to the unit.

### The Last Word

Innovations in electronic communications have taken amazing twists throughout the last 100 years. At a time when stand-alone Internet radio and satellite-delivered radio wow the techno-savvy crowds at the Consumer Electronics Show, here's a radio brandishing 80 year old technology and doing an amazing thing: delivering the voices of the world in real time, 24/7, with no user fees, and it's even wireless! You get all this for about the price of a couple of months on your local ISP.

If you've been looking for a radio to get started in the shortwave listening hobby, the MFJ 8100 is a great place to start. Compact and easy to use, the 8100's ability to tune CW and SSB make it a versatile receiver. At \$89.95 for the prewired version (MFJ-8100W) and \$69.95 for the kit (MFJ-8100K), this radio represents an excellent listening value. You could easily spend much more for a radio with AM/CW/SSB tuning capability. Yet, the 8100's size and weight easily lend it to portable operation for SWL or in an amateur radio station configuration. That makes it a great little radio for the beginner and old hand alike.

For more information on the MFJ-8100 visit their web site at <http://www.mfjenterprises.com>, call 800-647-1800 or write MFJ Enterprises, Box 494, Mississippi State, MS 39762.

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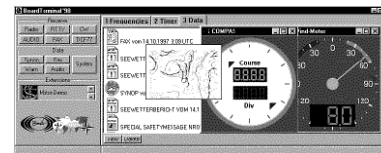
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