



Tivoli 'Model Satellite' Sirius Table Radio

By John Figliozzi

Tivoli Audio has introduced what it terms “the world’s first satellite table radio designed exclusively for home use with Sirius Satellite Radio.” Promotional material from Tivoli describes the partnership between itself and Sirius as an effort “to bring to market elegantly simple, yet technologically sophisticated satellite radios for home use.”

Designed by Tivoli’s CEO Tom DeVesto and based on the company’s popular and award-winning Model One, Two and Three table radios engineered by the late, legendary Henry Kloss, the radio is indeed eye catching. It’s also more compact than one initially expects, measuring only 8-3/8” W x 4-1/2” H x 5-1/4” D and weighing in at a mere 3.7 pounds. But how does it work and sound?

Tivoli supplied me with one of its two prototype radios over last summer’s Independence Day weekend and I put it through its paces. (The prototype differed in some minor respects – mostly cosmetic – from the finished unit now provided by Tivoli.) In short, I was quite impressed; but it was obvious that some shortcomings were still to be addressed before the radio would be ready for general release around the first of the year.

❖ The Tivoli Look

As with all of Tivoli’s line, the design is straightforward and handsome with a rich wood cabinet – in this case, cherry. The audio is true and powerful, something that is all the more impressive when one beholds the size of the instrument that’s producing it.

This is a three band radio – AM, FM and Sirius. It resembles most the Model Three clock radio, with a top mounted speaker and a screen display replacing the analog clock. The display is surrounded by a number of small silver function buttons. To the right of the display (when facing the radio) are a remote control signal receive port, a light sensor and two LEDs, one green that glows to indicate that the radio is turned on and one amber that glows according to the relative strength of the AM or FM radio signal being received.

Above and below the LEDs are two “champagne-toned” knobs. The upper one

raises and lowers the volume of the audio; the lower one selects the band (Sirius, FM, AM in that order left to right) or an auxiliary audio source if one is used. My prototype also used this knob to turn the radio on and required the user to rotate through the FM and AM bands if one wanted to choose Sirius. It appears from Tivoli’s supplied photos that production models will not be hampered as such.

On the right side of the radio’s “beige metallic” faceplate is a simple, smooth as silk, geared down five-to-one ratio, analog FM and AM tuning knob. As with all Tivoli Audio products, there is no treble or bass control on offer. That is in keeping with the company’s commitment to simple operation. The Sirius display, however, provides something of a challenge to that tradition.

The display carries only the time – in a choice of numerical digital or digital analog clock format – and the date, when the Sirius band is not selected or the unit is turned off. Time can be in a 12 or 24 hour arrangement and the initial setting asks for time zone and whether DST is in effect. Once set, the clock is self-correcting if one decides to disconnect the radio from mains and move it to another location. The display on the production model is a “cool blue.” Other time-related features include an alarm, program alert time, auto shut-down and a 20 minute lull to sleep mode.

❖ In Sirius Mode

When Sirius is selected, the display (at least on the prototype) looks identical to the one adorning the Audiovox line of Sirius receivers. The screen on the prototype was

most visible only from a straight-on angle. One hopes that the display on the production version will be visible from a wider perspective. There are settings for display contrast, dimming, auto-dimming, along with a choice of four print font types.

The display gives the user feedback on the many options available when accessing the Sirius band. There are four banks (A, B, C and D) of memory with five in each, giving up to 20 presets. One can engage an auto search mode or “clear all” function in conjunction with those presets. Streams can be locked out as a parental security feature. A user also can add or skip presets from auto search. A tone to confirm that a function has been implemented can be utilized or deactivated.

There are other helpful features as well. Each of the now over 120 individual Sirius satellite program streams can be directly tuned. The user can also carousel in either direction through each stream or through the dozen or so stream categories (e.g.: pop, rock, jazz, news, sports, etc.) in sequence. As an aid to antenna placement, there’s a ten step signal strength indicator that can be dialed up. There’s also a ten step general volume control feature that adjusts modulation levels to maximize audio fidelity and avoid distortion. All of these functions can be controlled directly by use of buttons surrounding the Sirius display screen or by using the supplied remote control device.

❖ Impressive Sound

One need not fear weak or distorted audio in a Tivoli engineered radio. A heavy magnet, long throw, three inch driver is allied

to a multi-stage frequency contouring circuit that adjusts the speaker’s output over half octave increments. Tivoli claims this approach produces “musically accurate total balance and bass response.” Hearing is believing, I say, and I was more than impressed. Even at full volume, there was absolutely no hint of distortion and the radio was easily heard in my back yard to a range of up to 100 feet, even over the din of the interstate traffic through the woods behind my house.

Instead of a standard off-the-shelf integrated circuit, Tivoli uses state-of-the-art discrete-component FM tuner



technology featuring GaAs MES-FET mixers, originally developed for cellular telephones. Without making this a technical training exercise, let's just say that the technology as implemented by Tivoli provides for superb FM reception and increased clarity of closely spaced stations. Tuning through the FM band accurately is greatly assisted by the combination of a large geared down 5:1 tuning analog tuning knob and a variably lit amber tuning indicator.

❖ Options

While this table radio works and sounds fine all on its own, the rear of the set features inputs for other compatible Tivoli Audio components including a companion speaker, a CD player and a subwoofer that can turn the unit into a small, diverse and powerful audio entertainment center. There also are inputs for the 12 volt adapter, the supplied satellite antenna and an FM external antenna for enhanced reception in weak signal areas. In my experience, use of some sort of external antenna appears advisable – even the supplied short length of insulated wire – as only the strongest stations locally (within 25 miles of my listening location) gave optimum results. A jack for headphones (not supplied), a time set button, plus switches optimizing the radio for use of the internal or external FM antenna and monaural or stereo (with optional companion speaker) output round out the roster of back side controls and inputs.

As good a performer as the Tivoli

Model Satellite Sirius table radio is, there are some relatively minor concerns. One is heat. The Sirius microprocessors generate a considerable amount of it. The incorporated heatsink appears adequate to dissipate it, but one wonders if the life of the unit as a whole might eventually be affected. (I own several other Sirius receivers – some for nearly two years now – and can report that similar heat generation hasn't been a problem for them yet. In any event, the Model Satellite carries a one year warranty.)

Another concern is AM/MW performance. One should not purchase this radio expecting a DX machine on that band. To be perfectly frank, AM/MW performance (at least without use of the supplied "AM loop" antenna, which was not available for this review) is substandard, with only local stations showing up and skywave reception at night wholly unimpressive. Apparently, ALL of the effort with this model has gone into FM and satellite reception.

Finally, the satellite receiver components of the unit generate considerable "hash" in the proximity of the unit itself. Therefore, it is recommended that the supplied external AM and FM antennae be located as far away from the unit as possible.

❖ The Verdict

With those minimal caveats, the Tivoli Model Satellite Sirius table radio – retailing for \$299.95 – is an impressive looker and per-

former and can be heartily recommended for those seeking truly superior audio as well as impressive FM and Sirius satellite reception in a deceptively small and attractive case. Packed with the unit are a short length of insulated wire to serve as an external FM antenna, a Sirius satellite antenna, a simple external AM loop antenna, a power supply and a remote control with battery.

For more information on the Tivoli Model Satellite and a pdf file of the receiver's owner's manual, refer to <http://www.tivoliaudio.com>. For more information on Sirius Satellite Radio, as well as this and other Sirius-inspired products (an entirely new line went on sale for the holidays), refer to <http://www.sirius-radio.com>.



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Four-Forty and More for Very Few Pfennigs

By Alan Bosch

The antennas described here were born after an e-mail exchange with Al Lowe/ N01MW of Arrow Antennas, who graciously explained how his excellent OSJ coax-fed open stub J-poles work – and why they are so broad-banded.

That was the "Eureka!" moment. Why not build one and see if it might cover both the 440 and GMRS/FRS bands? It would certainly be a useful item for Amateur Radio Emergency Service types working with local Citizens Emergency Response Teams.

Below are two versions: one junkbox special made from chunks of an old K-40 whip and a piece of 1-inch aluminum angle, good for portable use and light enough to be installed on a collapsible mast; and one much more elegant unit made of 3/8-inch aluminum rod and a heavy dipole bracket, suitable for base installation.

Both rely on the equation that a quarter-wave equals 2808 divided by the desired frequency in MHz.

They are tuned to 455 MHz to straddle the range from 442-468 and snag the repeaters in both bands, which means a stub a smidge over 6 inches long (6.17, to be exact) and a radiator 3 times that. I rounded them up to 6-1/4 and 18-3/4 inches, to favor 440 a bit. Happily, this

configuration is not picky: both resonate between 1.2 and 1.5:1, depending on the band and which segment you're checking. (Make sure the feed line drops straight away from their mounts for at least a couple feet.)

Now for construction –

Construction is a cinch, since each version has under half a dozen parts: the two elements, a mounting bracket, a 3/8x24-to-SO-239 mount adaptor (Lakeview-Hamstick's #275 <http://www.hamstick.com>; 864-226-6990), and a washer or two. (Don't forget to allow for the length of the elements' anchors when you're cutting them, and be careful with any washers so you don't create a short to ground.)

As for the junkbox version, the aluminum angle is 4" long and needs be drilled with its 3/8" radiator and stub holes 2" apart. While you're at it, make two more holes in the other portion of the angle for a standard 1-1/4" mast clamp, centering them on the radiator hole. Attach the radiator with one of the SO-239 adaptors, using a star washer underneath to make it snug, and the stub with a

3/8x24 mobile mount nipple. (The rod tips are wire nuts stuck on with cyanoacrylate gel.)

As for the elegant version, be prepared to thread the aluminum rod with a 3/8x24 tap you can also get at the hardware store, cutting the threads down 3/4". That's surprisingly easy to do, provided you go slowly and keep the tap plumb on the rod. The dipole bracket I used for mounting is from Eagle1Communications (eagle1com@adelphia.net; 304-264-9069). It comes with two 3/8x24 mounts, pointed in opposite directions. You can either flip the grounded one and use it for the stub, or anchor that with two hex nuts like I did.

Finally, there are at least three ways to install this J-pole: on a mast, from the ceiling or a tree with nylon line, and – the light one, anyway – on a window using the suction cup hooks from sun-catchers at the base, the top of the stub, and 2/3 of the way up the radiator. (Be sure to get cups with liftoff tabs, or they can be the very devil to detach.)

So, go ahead and roll your own and add another arrow to your em-comm quiver.



Small Space FM Reception Solutions: Terk's Artful Indoor Antennas

By Ken Reitz

Office workers and apartment dwellers can face a daunting challenge trying to pick up AM and FM signals where they live and work. At work, signals bounce crazily off dozens of tall buildings, creating a bouquet of multi-path distortion. Banks of fluorescent lights flicker and sputter, computers and monitors of every age and condition, packed side by side and wall to wall, create a din of RF hash which might have made Marconi think twice about bothering at all with his invention.

An on-line computer might be a good FM solution, but not everyone working in a cubicle will have a high speed line or a computer with speakers. And, having a satellite radio boom-box on your desk a la those XM commercials is not as easy as it seems. Many desks and cubicles aren't close enough to a window to allow the satellite signal near the antenna, even if you felt comfortable keeping a pricey item like that on your desk.

In the apartment, space is at a premium, and often without a balcony or other way to set up an outdoor FM antenna. And, it's often impossible to get an adequate signal from either of the two satellite radio services. In both cases, office workers and apartment dwellers have to make the best of a bad situation.

❖ Radios for Work While You Work

The first step is to try to get a radio which will work in either or both situations, so, it's back to the store for a suitable radio, but which one? Here are some things to look for in a good desktop radio for work.

Portability. The radio should be able to be stuffed into a locked desk drawer or popped easily into a tote bag or back pack.

Cheap but not junk. It should be inexpensive enough so that you won't get hysterical if it's lost or stolen.

Antenna friendly. It should have an external antenna connection (screw terminals, FM coax connection or small antenna jack).

Among the likely candidates are the old faithful GE Superadio (\$60); the Sangean ATSS05P (\$110); or the Grundig Yacht Boy 400 PE (\$130). These radios are available at most electronic retail outlets or through the Grove mail order catalog.

❖ Help for the Desktop Radio

Many small AM/FM radios have either inadequate power cord antennas or dinky telescoping whips which are usually the first things to break. If you can't put up an effective outdoor antenna, you have to do whatever you can to improve reception. That's where two products from Terk

Technologies might help.

I've got to hand it to the design team at Terk. Their desk top, indoor FM antennas are truly works of art. With glowing LEDs, imaginative shapes, and attractive finishes, the AM/FM Q and the AM/FM Pi-B are worth the price as object d'art. But, how do they perform?

First, let's be under no illusions: no antenna that sits on your desktop will replace an outdoor multi-element antenna. Second, the AM portions of these antennas are small non-tunable loops which do help to bring in AM signals but are no match against larger tunable AM loop antennas such as the Select-A-Tenna or the Radio Shack AM loop antenna (no longer in production).

Both Terk antennas feature individual AM and FM antenna leads and are powered by wall cube style power supplies (included). Both come with a 1:1 75 ohm balun. Both units feature a built-in antenna amplifier with an unobtrusive gain control on the back. The Terk Q also has an antenna tuner in addition to the amplifier. The amplifiers on each are active only on the FM band.

The Terk Pi-B

The Terk Pi-B looks like a 5-1/2" diameter graphite black disc balanced on a small, round, brushed aluminum base. An LED at the bottom of the disc, which indicates when the unit is plugged in the wall, casts a purplish light on the aluminum surface. An outer loop with only a small gap between it and the disk is the AM part of the antenna. The AM receive position is tipped 90 degrees away from the FM antenna. When you do this, the LED turns from purple to blue. I found the AM antenna of marginal use.

On the FM band the Pi-B's gain control, hidden on the backside at the top of the disc, could remove FM hiss from a weak signal and make it listenable. Further, setting the antenna as high above the radio as possible and rotating it for strongest signal, helps turn a poor signal into one that you could listen to for hours without straining your ears. The "B" in the model name indicates the color black. An identical model called the Pi-W was made in white but is no longer available.



Did that thing just land on your desk? It's Terk's Pi-B AM/FM desktop antenna. The "disk on-edge" silhouette, perched on a brushed aluminum base, has an eerie light from its LED which will get stares and comments from fellow workers. Retail: \$44.95 (Courtesy Terk Technologies)

The Terk Q

The Terk Q is essentially an amplified, tunable, FM antenna just 5" by 5-1/2". The FM antenna sits off-center on a heavy brushed aluminum foot with rubber, non-slip, and non-marring strips on the bottom. The black rippled piece of plastic behind the gray FM antenna is the unamplified, non-tunable AM antenna.

The execution of the design of the Terk Q antenna is beautifully done. The unit is very well built and looks like it could take a tumble off your desk and not even blink its little LEDs. There are eight of them in a bright green hue at the lower left of the antenna. As with the Pi-B, the Q's AM antenna works best when pushed down 90 degrees to the FM antenna. I found it brought marginal improvement and couldn't compare to the Radio Shack loop.

When the amplifier is turned off, there is only one red LED which indicates the portion of the band to which the antenna is tuned. Control of both the amp and the tuning is done with two small thumb wheels which are hidden on the lower right hand side of the antenna.

As the amp is turned on, the LEDs get brighter to indicate how much gain is being used. With the tuning control turned off, all LEDs turn red to indicate "wide band" mode. In this mode the antenna cannot be tuned to peak the signal. You would use this mode in an environment where signals are fairly strong to begin with.

Bottom Line

Of the two, the Terk Q is the better performer. Success with these antennas depends on your own location and assorted local reception difficulties. Remember these tuning tips: Place these antennas as far away as possible from stereos, TV sets, and other sources of high density electric fields to avoid amplifying the noise and not the signals, and carefully rotate the antenna for best signal. Buy only from a company with a good return policy in case it provides no improvement for your situation.

Both antennas come with a small sheet with operating instructions and tips on better reception. Both are available from Universal Radio (800-431-3939 or <http://www.universal-radio.com>). These antennas are made in China.



A design from the future for a technology out of the past. It's the Terk Q AM/FM desktop antenna with modern, understated styling and packed with unseen features Retail: \$69.95. (Courtesy Terk Technologies)