



capacitor are chosen so that you have a reasonable tuning range. Attempting to make the tuning range too wide will result in instability. Keeping the range to 1-1.5% of a given frequency is a good rule of thumb. Also be sure to use high-quality capacitors and inductors for all circuits. Their overall stability will be directly reflected in the stability of the entire receiver.

The 270  $\mu$ H coil and 390 pF capacitor connected to pins 10 and 11 form a quadrature detector that detects an incoming FM signal and provides recovered audio at pin 8. Pin 7 is usually used for a received signal strength meter. As a result, its output level is a voltage that is directly proportional to the incoming signal amplitude. Since AM is a variation in signal amplitude, this output makes a neat AM detector. Two pre-set potentiometers are included at the AM and FM audio outputs of the NE605. These are used to equalize the outputs so that switching from one mode to the other provides a roughly equivalent signal. An LM386 audio amplifier completes the circuit, providing adequate drive for a small speaker or headphones. The entire receiver operates from 5 to 6 volts, which is derived from a 9 volt transistor-radio battery and a low-power three-terminal regulator. Current drain is a function of the audio output level.

When building the circuit, take care to use high-frequency layout techniques. This means short leads, keeping input and output components away from each other, and building everything over a good ground plane. So-called "dead-bug or ugly" construction methods are fine as long as you are careful. Overall results are dependent to a great degree on layout, so be careful.

The completed receiver can be mounted in the enclosure (metal preferred) of your choice. Since it is a single-conversion circuit, strong signals at 455 kHz below as well as above the local oscillator frequency may leak through. This is the price you have to pay for single conversion. A more elaborate bandpass-type input tuned circuit with higher Q that "tracks" the local oscillator can reduce this effect, but that's something you will have to "play" with. Regardless of what your final design is, the NE605 is a chip worth experimenting with.

As a final note, we have not purposely described exact layouts or bills of material for this project, as it is experimental. The whole point of building such a circuit is to "cut and try" until you achieve results with which you are happy. If you need more details, request the data sheet for the NE605 from Phillips Signetics Company, 811 East Arques Avenue, Sunnyvale, CA 94088-3409. Good luck and let me know of your results.

73, Irwin, WA2NDM

## If you enjoy Amateur Radio, you'll enjoy CQ

It's a different kind of ham magazine.

Fun to read, interesting from cover to cover, written so you can understand it. That's CQ. Read by over 90,000 people each month in 116 countries around the world.

It's more than just a magazine. It's an institution.

CQ also sponsors these fourteen world-famous award programs and contests: The CQ World-Wide DX Phone and CW Contests, the CQ WAZ Award, the CQ World-Wide WPX Phone and CW Contests, the CQ World-Wide VHF Contest, the CQ USA-CA Award, the CQ WPX Award, the CQ World-Wide 160 Meter Phone and CW Contests, The CQ World-Wide RTTY Contest, the CQ 5 Band WAZ Award, the CQ DX Award, and the highly acclaimed CQ DX Hall of Fame.

Also available in the Spanish language edition. Write for rates and details.

	USA	VE/XE	Foreign Air Post
1 Year	27.95	40.95	52.95
2 Years	49.95	75.95	99.95
3 Years	71.95	110.95	146.95

Please allow 6-8 weeks for delivery of first issue

**CQ Magazine, 25 Newbridge Road  
Hicksville, NY 11801  
Phone 516-681-2922  
FAX 516-681-2926**

# SGC®

"No Compromise Communications"

## Take a Smartuner™ on the road.

# Q M S



Quick Mount System  
for mobile HF/VHF use



The QMS is rated for use on moving vehicles up to 75 miles (120km) per hour.

## GO-MOBILE with QMS

The QMS - a mobile system which is easy to install, improves radiation efficiency and provides frequency agility without manual adjustments. The QMS can be quickly installed for permanent or temporary use without damaging the vehicle's finish. No drilling or modifications are required, and industrial suction cups, high strength straps and buckles give structural integrity to the installation. All QMS systems include an exclusive weather resistant case, SGC Smartuner and a dual resonant whip antenna. For 100, 200 or 500 watts, choose the QMS which fits your requirements:

**QMS-b2** cat. #55-47 includes the SG-230 (200W), 1.8 to 30 MHz - SG-303 9 ft. antenna

**QMS-a7** cat. #55-49 includes the SG-231 (100W), 1.0 to 60 MHz - SG-307 7 ft. antenna

**QMS-b3** cat. #55-48 includes the SG-235 (500W), 3.0 to 30 MHz - SG-303 9 ft. antenna



Call Today!

**1-800-259-7331**

**Internet**

Website  
<http://www.sgworld.com>  
E-mail  
[SGC@SGCWORLD.COM](mailto:SGC@SGCWORLD.COM)

SGC Inc., P.O. Box 3526, Bellevue, 98009 USA  
Tel: 425-746-6310 Fax: 425-746-6384 or 425-746-7173