Wouxun's low-priced handheld radios have already established a foothold in the U.S. amateur market. Now, the company has introduced a dual-band mobile rig, and Contributing Editor WB6NOA has our review.

CQ Reviews:

Wouxun Electronics KG-UV 920P-A Dual Band 50-Watt Mobile

BY GORDON WEST,* WB6NOA

Wouxun Electronics Company, from Fujian, China, has become a well-respected name in low-cost amateur radio and land-mobile radio equipment in a relatively short period of time. We have seen multiple varieties of the Wouxun handheld transceivers, and heard that Wouxun would soon be announcing a 50-watt VHF/40-watt UHF true dual-band mobile, the KG-UV 920P-A. We had the factory in China send us one for review. We were ready for it to go on the air as soon as it hit our classroom test bench (photo A).

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Like most of the Wouxun handhelds, this powerful dual-band mobile radio carries FCC Part 90 (land mobile) certification, offering an inexpensive mobile transceiver to authorized volunteer firefighters and volunteer rescue squad members. If these same firefighters and EMTs are also ham radio operators, this same radio might do double-duty on the 2-meter and 440 MHz ham bands. I could see ten preprogrammed channels of volunteer fire and medical land-mobile channels, plus 50 or more channels loaded with area ham radio frequencies.

The key word I would emphasize is "pre-programmed" (i.e., programmed using your computer and software

before your field activities), as most of the Wouxun commercial transceivers are not designed for field programming. Even the ham version with the programming keypad is more easily preprogrammed from a computer, as opposed to trying to figure out the complex programming sequence that these radios exhibit.

For testing this equipment in the Amateur Radio Service, we enlisted software from Karin, K0RTX, and Rod, KU0HP, of RT Systems (www.RTSystemsInc.com), plus the computer programming savvy of Jason Gant, W6AUX, with whom we work on communications matters in our local United States Coast Guard Auxiliary flotillas.
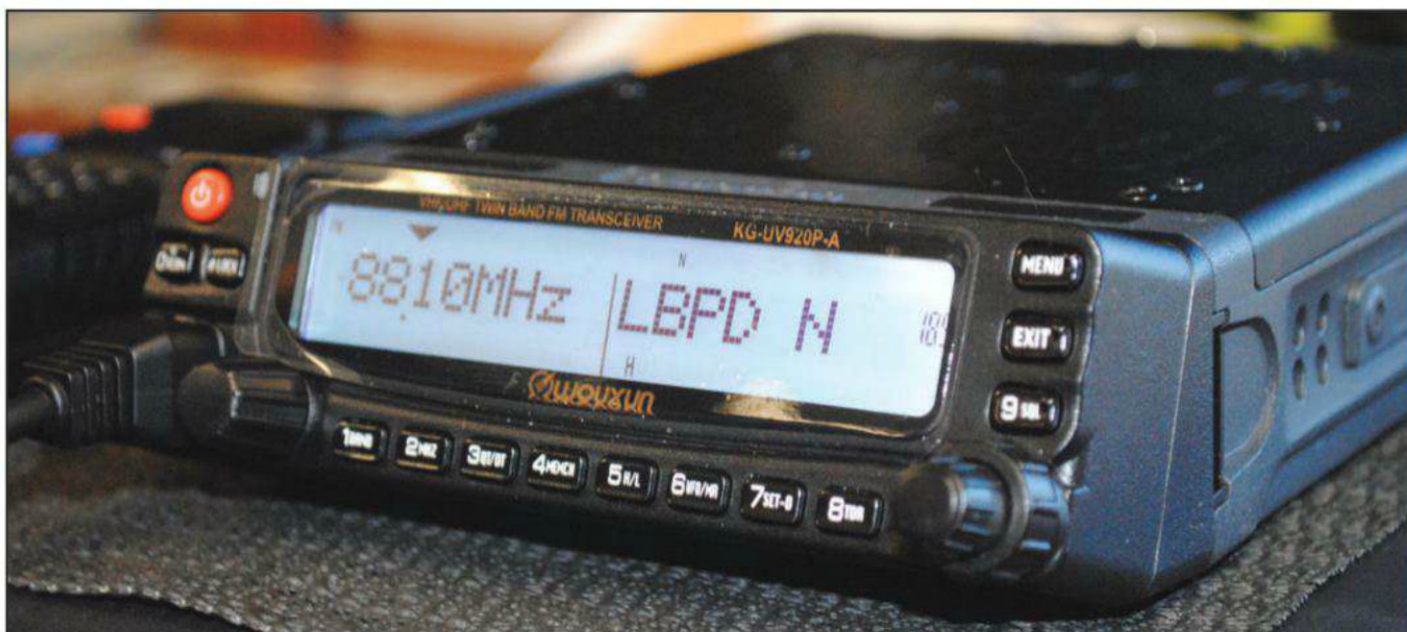

Photo A– The Wouxun KG/UV920P-A is a true dual band radio, with twin displays and dual band reception at the same time.
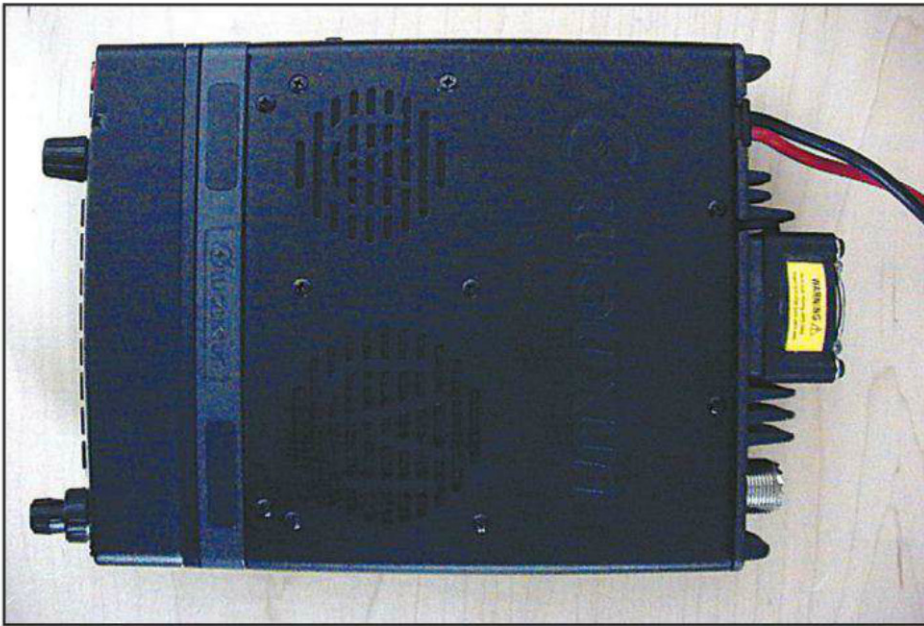
Photo B– The 920 is built for heavy-duty use, and includes dual speakers mounted beneath the top cover.

"The KG-UV 920 P-A is a powerful 12-volt VHF/UHF mobile transceiver, capable of simultaneous dual band reception, duplex cross-band repeat operation, plus simultaneous operation on both VFOs on VHF (VV) or UHF (UU)," commented Jason, who was also impressed with the heavy feel of this mobile dual-bander, plus the ability to remote the radio's head with a common RJ-45 Ethernet cable, giving mounting possibilities beyond that of the cable supplied with the equipment.

"The case of this dual band transceiver is ultra-heavy duty (see Photo B). The heavy feel of this radio will make it nearly indestructible in an off–road vehicle," said Gant, adding, "However, using the radio with gloved hands, or using the radio on a bumpy road, may cause errant keystrokes, mainly because there is a multitude of very small buttons, and it's easy to press the wrong one."

We used the radio on several repeaters and received excellent audio reports. The heavy weight of this unit evenly distributes the heat, and even on high power, the unit ran relatively cool for extended transmit periods. A fan helps keep the innards ventilated, too.

There are two top-mounted speakers (see photo B), with plenty of loud output. We couldn't understand the need for two speakers, but, nonetheless, you've got them. The audio on TX and RX was excellent. There was plenty of receive volume, so even in a noisy vehicle, this dual -band mobile really pumps out nice, clear, crisp audio. Of course,

you can add left and right channel individual speakers, too.

An observation concerns the left/right volume control for the dual display. They are nested into a single concentric configuration on the right side of the radio (photo C), and, because the knobs are relatively small, it was difficult to quickly adjust the audio when using the outer ring knob. You need small fingers to get at these regularly-adjusted controls. The Wouxun factory indicates it has improved the tactile feel to the soft buttons, and has extended the volume control knobs for easier adjustments.

We liked the mounting hardware that came with the transceiver. You could mount the unit in almost any position, and then angle the display so you could easily see it.

A Very Informative Display

The LCD display was amazing with all its different symbols. Although quite small, there are more than two dozen possible indicators at the top of the display, along with the left band and right band frequencies in a bold (but not large) contrast at the center of the display. At the bottom of the display, you can see power settings for transmit, along with an LCD bar showing both transmit and receive signal strength.

There is just one antenna output, so the duplexer is built in. This is good.

The KV-UV 920 P-A can be programmed to receive narrow band FM from 136 MHz to 174 MHz, and from 400 MHz to 470 MHZ. It also transmits

throughout this range for those who hold a valid land-mobile radio license. For the ham 2 meter and 70 cm bands, where your amateur radio license covers you, the radio can be programmed for "normal" or narrow FM transmission and reception.

The radio also receives the wide FM broadcast music band, from 88 MHz to 108 MHz. "I enjoyed the ability to monitor a local FM broadcast station, and still be able to hear any activity on the 2 meter or 440 MHz side that OVER-RIDES the FM broadcast band reception," said Jason. "However, access to an FM broadcast station is tedious. To dial in an FM music station, I would first press MENU +4 +3 +MENU +UP +MENU +EXIT on the keypad of the speaker mic. Then, rotate the frequency knob on the front of the radio to select an FM memory location. Not easy," he added.

The Wouxun mobile radio features 999 memory channels. Scan and skip options let you configure scanning to include just those channels that you want to hear. The 999 memory channels let you program 2-meter, 70-centimeter and commercial frequencies in any order.

Keypad and Hotkey Entry

From the face of the radio you enter a frequency using the keypad on the heavy-duty microphone (photo D). You can also change the frequency in VFO mode by rotating the tuning control knob. We did not find any built-in capability for automatic repeater offset. This is a major omission for ease of newcomers programming this radio!

The radio simplifies more-common keystrokes by allowing them to be memorized as "hotkey" functions (photo E). We found this greatly speeds up using the equipment from the front panel. Pressing the #2/MHz hotkey allowed us to enter a frequency with the transceiver recognizing 6.25-, 25-, 50- and 75-kHz steps. Realize that the 6.25-kHz steps may not access some of the new land-mobile narrow band splinter channels (see sidebar).

CTCSS/DCS is assigned to the #3 hotkey and it is possible to scan and decode a repeater input frequency with a ham transmitting the tone. It scans lightning fast, so you shouldn't have a problem decoding the specific tone that another ham is transmitting.

Cross-Band Repeat

Because this radio is frequency-managed by two completely independent

Photo C– The volume controls for the two receivers are nested on a single knob, sometimes making quick adjustments difficult. The company says it has improved the design.

Photo D– The keys on the speaker mic are backlit and easy to use for simple programming of simplex channels. However, any more-complex programming should be done by computer. Also, the speaker is on the back of the mic, rather than in front, as is more common.

operating systems, it can operate as a cross-band repeater, including separate CTCSS tones for each band. This will help minimize its own transmitter from activating the receiver circuit during transmit, with different CTCSS tones for each side of this unique dual band radio.

This Wouxun mobile radio makes a dandy cross-band repeater, but without an ID'er in the radio, the unattended cross-band mode lacks the required ten-minute identification. I caution ham operators to use cross-band only sparingly, with proper identification technique, and not to leave a cross-band system up indefinitely.

Computer Programming

This feature-rich mobile transceiver is best programmed by computer, and I strongly recommend using RT Systems software. "Users should be cautious in selecting their programming cable and software suppliers," says Gant. "I found several cable kits with a unique chip set, which caused driver installation problems in Windows 7™ and Vista™. My recommendation is the RT Systems RPS-KGUV920-USB Programming system with user friendly software and the USB-W5R cable." See <http:// bit.ly/10WoYjy>.

During our review of this transceiver, we explored several different internet "free" versions of software capable of working some, but not all, functions of this dual-band mobile. But every time, we came back to RT Systems software, where Karin and Rod have devoted their ham radio business *specifically* to two-way radio software features.

Menu Items

While you are programming the radio, Gant recommends the following: "Let's hope ham operators will *not* go to MENU 5, and turn on the 'Roger beep' feature! This annoying beep could begin at key-down, at the end of transmission, or both start and stop of transmissions, or hopefully, turned OFF! This is easily done in the software."

We would also remind ham operators that installing the optional scrambler would not be legal on ham frequencies.

MENU 22 may allow you to name a specific channel frequency. This could work well for business radio use, but I never recommend naming a ham frequency with an alphanumeric. The reason is simple—you might have every known simplex channel in your radio—but in an emergency, you may need to switch to simplex frequency 146.580. You know it's there in the radio, but the names for simplex use don't tell you the actual frequency. While there is a way to check which frequency is where, it requires added keystrokes (and time). The good emergency responder keeps the ham radio in the frequency mode so you always know where you are on the radio dial! This, too,is done very easily in the program with a Name field right on the main screen and an option to turn the names on in the menu settings file.

Stock Microphone

The Wouxun mobile transceiver comes with a microphone that feels substantial, and offers many features, including: transmit/receive LED indicators, mic lock key, large push-to-talk lever, frequency/channel up and down keys, scanning key, channel selection hotkey, save channel to hotkey, output power key, VFO/memory recall (MR) toggle key, squelch level adjustment key and single or dual display key. The keys are backlit for easy nighttime navigation. The overall feel of this heavyweight mic is excellent.

A Few Minor Issues

With every new piece of equipment, there is always something in the design that you don't agree with. The same is

Photo E– The buttons are small, but have been improved to give the feel that they have indeed been pushed!

The KG-UV 920P-A and Narrowband Splinter Channels

The KG-UV 920P-A can be set to narrowband FM bandwidth. However, like many land mobile radios currently on the market, the unit that we reviewed will not handle the new narrowband SPLINTER channels. Here is why:

Land mobile frequency example: 154.552525 MHz
First convert to Hertz, 154552525 Hz
Divide by 12500, 12.5 kHz steps = 12364.202. Not evenly divisible
Divide by 6250, 6.25 kHz steps = 24728.404. Not evenly divisible
Divide by 5000, 5 kHz steps = 30910.505. Not evenly divisible
Divide by 2500, 2.5 kHz steps = 61821.01. Close, but not evenly divisible

Although land mobile radios can indeed go to the new narrowband requirements, only *new design* commercial radios ($$) can do these splinter channel steps.

However, Wouxun says that per the new FCC rules, the updated FCC version is already available in the USA market, and it will automatically recognize either wide or narrow bandwidth, according to the frequencies input, and will also step 2.5 kHz.

Cloning Memories from Other Radios

Do you own a Yaesu, Alinco, Icom, or Kenwood handheld or mobile radio, already computer-programmed with over 200 channels in memory? Can you imagine how *long* it would take to manually re-type and enter all that memory data over to a new inexpensive Chinese radio?

Great news from RT Systems (www.RTSystemsInc.com): Its software that you may already have for your current rig, plus the new software they have for most all Chinese radios, allow you to easily *copy and paste* those channels, plus each channel's data - such as offset, channel name, split, encode/decode tones, scan or no scan - from one radio's program to the other radio's program! Even if the original radio programming columns are different than the Chinese radio's computer columns, Rod has figured out a way for the software to recognize what should go where, and in just a couple of minutes, the transfer takes place! The software will automatically reformat the file for you! There is also a way to import from the .csv file as another easy way to transfer information to a programming file.

true with this radio. "The speaker on the DTMF speaker-microphone was placed on the *back* of the microphone," notes Jason. "This means the audio will be muffled when the mic is clipped to the front of my jacket. I would have thought they might have placed the speaker on the front of the microphone, so the clip on the back keeps the audio close to your ear."

The 61-page user's manual is well laid out, with diagrams and line-art galore, and four pages dedicated to menu operation. In fact, the translators did a fabulous job of graphically illustrating the MENU buttons to push for specific menu items. The translation itself was also very well done. Some features identified as "stun" and "kill" relate to cloaking certain parameters of programming over-the-air, so only YOU know what the keystrokes are!

The manual also has four well-detailed pages on the remote control function. To minimize the chance of someone taking over your remote-con-

trolled transceiver, the remote control settings may only be input through the programming software.

Again, I remind our readers about the influx of all brands of Chinese radios to the United States. For the brand new ham operator, they may look tempting with their extremely low prices, but much of this equipment is intended primarily for the land-mobile radio market. Land-mobile radio rules do not permit the end user to be able to change memorized channel parameters, nor allow that radio to go into the VFO mode from the front panel controls.

As pointed out in this article, *software* is the key to making these radios perform to their capabilities (and their FCC limitations) on both land-mobile and ham frequencies. Again, for a new ham, and even some of us veteran hams, working the new Chinese transceivers, just from the front panel, can be exasperating! Keep this in mind when making your next radio purchase decision!

Overall, though, the Wouxun KG/UV920P-A, with the right computer load, is one fabulous transceiver!

For more info, see your Wouxun dealer or visit <http://www.wouxun.com>.