

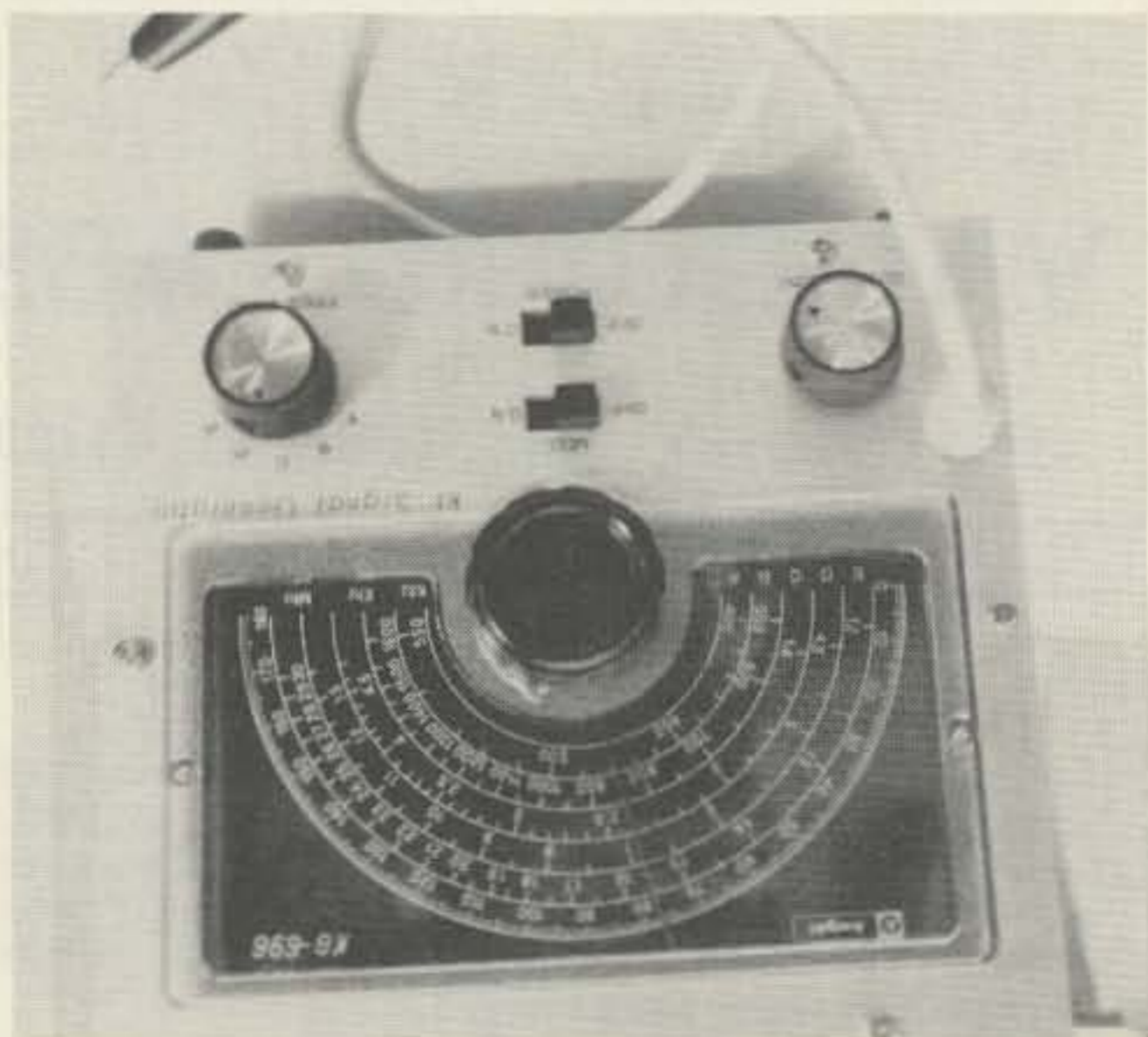
# Knight Kit

## KG-696 RF

### *Generator Kit Review*

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**W**e hams pride ourselves in being equipped for just about any emergency that comes up; but for those times while mountain-topping or operating mobile, when we need a source of rf, we are prone to make do with something less than optimum. I know that I had always wanted a good rf signal generator, but I didn't want to be tied to ac power lines. I did something about my wish and latched on to Allied's KG-696 battery-operated rf generator covering from 400 kHz through 30 MHz.



The Knight-Kit KG-696 rf generator showing molded cable assembly.

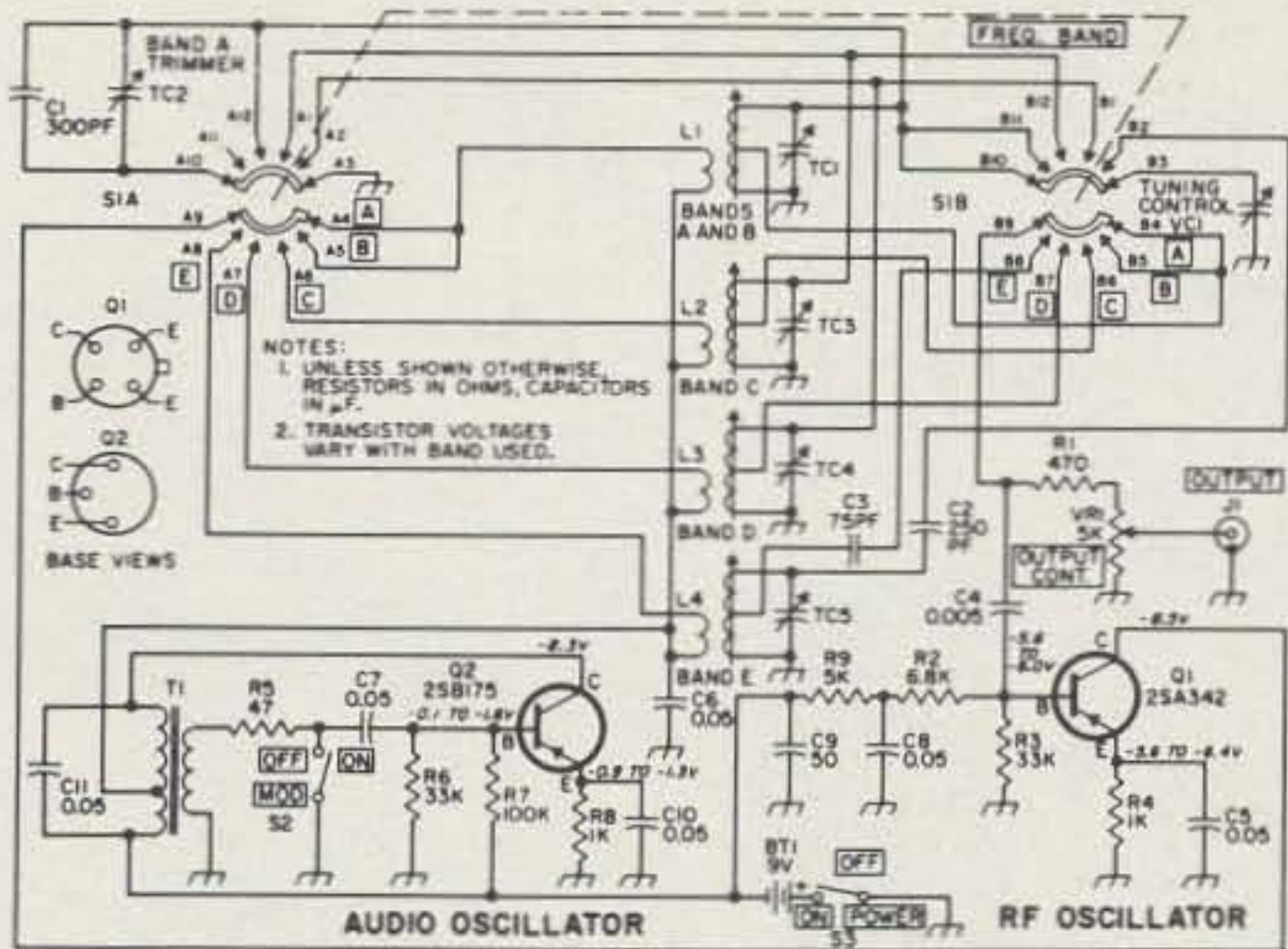
For those of you who follow changes, the Knight-Kit line has been shifted to Japan and the oriental influence is evident

in this little gem. The generator consists of two transistors, a PC board, and a handful of quality components which together make up an interesting package in the less-than-\$20 range. The generator contains two separate circuits: an rf oscillator and an audio oscillator.

The frequency selector switch selects one of four rf coils to provide signal output on five bands. The lowest frequency range (400–550 kHz) utilizes the rf coil for the 550–160 kHz band with the addition of some capacitance across the coil to permit tuning 400–550 kHz. Each of the four rf coils features adjustable cores and trimmer capacitors for precise alignment.

The base of the rf oscillator transistor is connected through a capacitor and the band selector switch to a tap on the selected rf coil. This is done to hold transistor loading to a minimum across the coil and provide a high-Q tuned circuit. Feedback necessary for oscillation is provided by a switched secondary winding on each rf coil.

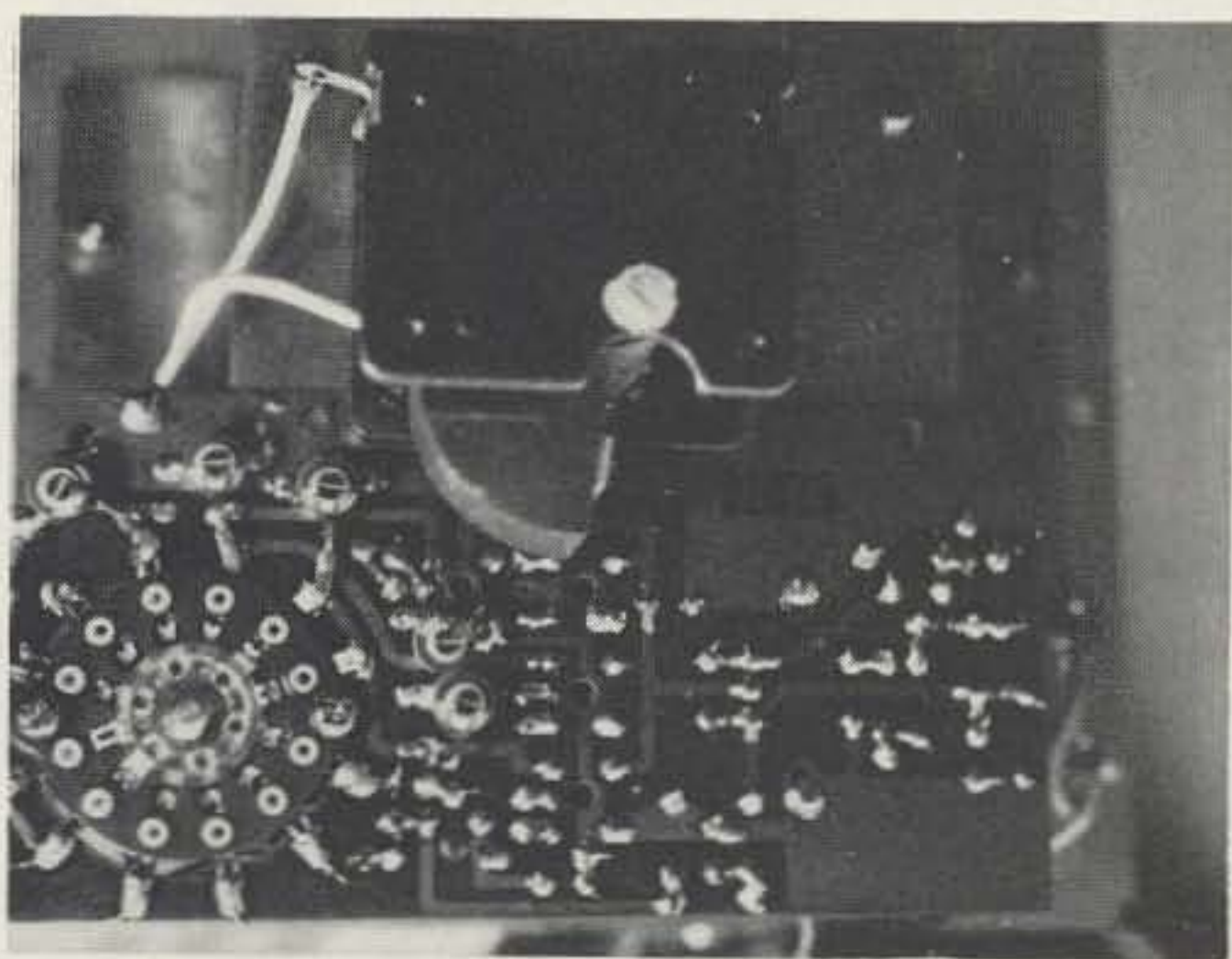
The audio transistor functions as an oscillator generating a 1 kHz signal. A switch allows selection of pure rf or rf modulated by the 1 kHz note. Construction assembly requires approximately four hours with about one additional hour for alignment. A well written and illustrated text aids the new kit builder and proves a valuable aid to the more expert construc-



Physical Size:	5 7/8 x 5 7/8 x 3 5/8 in.
Weight:	2 lb
Freq. Coverage:	Band A- 400-550 kHz Band B- 550-1600 KHz Band C- 1.6-4.5 MHz Band D- 4.5-13 MHz Band E- 12-30 MHz
RF Output:	Over 100,000 $\mu$ V
Modulation:	1000 Hz
Audio:	1 kHz, adjust. intensity
Battery:	9V Eveready 216
Price:	\$19.95

Schematic diagram of Knight-Kit KG-696 rf generator and specifications.

tor. The majority of the circuitry is wired to a PC board of first-rate quality, featuring a unique application for converting a conventional wafer-type rotary switch to a PC-type component.



Interior view of PC board highlighting converted switch mounted to PC board.

As the photograph illustrates, the last deck of the switch is soldered directly to the PC board. This is accomplished by first disassembling the switch and reassembling it with the bottom wafer flush against the PC board. This simple operation is secured with somewhat oversized hardware and provides a convenient method of achieving the versatility of a PC-type switch with the economy of conventional components. This technique can and probably will be adapted for use in many amateur homebrew projects. Conventional wiring techniques are used for the other connections to the switch.

At times construction became a bit "hairy," as space was at a premium, but the entire generator rapidly took on the appearance of a mechanically and electronically stable piece of ham gear with no major problems.

Battery replacement, frequently a problem with solid-state gear, is simple. The battery (9V transistor type) is held in a clip with conventional snap-on terminals. This clip is part of a bracket secured to the bottom of the case with the battery inside.

#### Alignment

The entire alignment procedure is based on the use of standard broadcast station frequency reference points for the range from 600 to 1600 kHz, and a ham receiver for checkpoints on the higher bands. Shunt capacitors are included in the event the core adjustment and trimmer adjustments fail to bring the unit to satisfactory alignment. A small quantity of wax is included to be melted and deposited in the cores and on trimmer screws to prevent movement once alignment is complete.

#### Comments

The KG-696 represents an inexpensive means of achieving a reliable source of rf and is portable and nondependent on ac power lines. It is useful for on-site adjustments as well as a reliable fixed-station performer. Its price — less than \$20 — puts it in the buying range of many of our newer hams who, though never short on ideas, are often short on capital.

... W9KXJ ■