



**DTC COMMUNICATIONS, INC.**

# **Operating Instructions for the T99FG**

**Version 1.0**

**OP1920058**

## **Introduction**

The T99FG is a 200mW covert transmitter board, which may be installed in host devices such as the Motorola FLEX™ pager housing. The output power does not change over its operational battery life, unlike other covert transmitters due to a novel step-up switching power supply circuit. The transmission is a narrow-band FM signal, of 5 kHz deviation. The antenna is an internal loop antenna, tuned to the specific operating frequency. The audio circuitry is built around a Gennum automatic gain control (AGC) circuit, and a high-quality Knowles microphone. The efficient switching power supply converts the 1.5 volts from the Eveready L91 Lithium battery to 4 volts for operating the transmitter. Battery life is over two hours at a constant 200mW. The internal antenna is custom designed, and is individually tuned during manufacturing for maximum radiation. The pager display and controls operate normally, contributing to the covert packaging. The pager, however, does not receive pages.

## **Description**

### **Battery**

The T99FG will operate correctly **ONLY** with an Eveready model L91 Lithium AA battery installed. A fresh battery will operate the unit for over two hours. The T-99-FG will operate for less than 15 minutes with a standard alkaline battery installed.

To install the battery, hold the pager face down and proceed as follows:

- 1) Unlock the battery door by sliding the door latch away from the battery door.
- 2) Slide the battery door in the direction of the arrow (toward the outer edge).
- 3) Lift the battery door away from the housing to remove it.
- 4) Place the battery into the battery compartment, taking note of the positive (+) and negative (-) markings on the battery and the pager housing.
- 5) Replace the battery door and lock by sliding the door latch toward the battery door.

**NOTE:** The pager will sound the power up alert and **IS NOW TRANSMITTING**. The transmitter is powered up from the moment the battery is inserted into the unit. There is no power switch.

### **Audio Circuit**

The audio circuit is based on a Gennum automatic gain control (AGC) microcircuit and an internal, high-sensitivity Knowles electret microphone. When the pager is placed in the holder and worn, the microphone is located behind a small hole on the side of the pager facing up. Excellent audio quality will be achieved if this hole is kept clear of fingers and clothing.

All body-worn transmitters are susceptible to “clothing noise”. The holder that comes with the T99FG tends to keep the microphone away from the body, reducing this tendency.

### **Flex™ Pager Features**

The Flex™ pager has several features that are fully functional and assist in the pager disguise.

One useful feature is the clock display of the pager. Feel free to set the time and date on the display. But, if you do not, the clock will act as a timer indicating the time since turn on. This may help in assessing battery life remaining.

You may use the built in alarm clock feature of the pager. As you navigate through the function menu you will find a “Set Alarm” function. This can be used to simulate a page being received at a certain time. When the alarm is set, a “bell” symbol is visible in the lower left corner of the screen.

The beeper and vibrator are both still active in the unit. By paging through the menus, you can set the alert type for the pager, and cause the beeper and vibrator to activate. This may be useful to show that the pager is “real”.

Remember that the “Turn Pager Off/On” function will have NO EFFECT on the transmitter.

### **Operation**

1. Place the holder on a belt and load a Lithium AA battery into the pager. The pager will power-up and beep, showing the date, time and the word Airtouch™ in the display. After about 10 seconds the display will blank and only show the “power-on” symbol and the speaker symbol.
2. Pressing any button will re-activate the display. You may access the menus per the Flex™ instructions, if you wish. **NONE OF THE BUTTONS OR RELATED FUNCTIONS WILL HAVE ANY EFFECT ON THE TRANSMITTER WHATSOEVER.**
3. Slide the unit into the belt holder.
4. Remove the battery when not in use. The unit will transmit when an operating battery is in place; there is no on/off switch. **IT IS IMPERATIVE TO DISCARD** partially used batteries, as their remaining life is not very predictable. **ALWAYS** start an operation with a fresh battery.