



FIGURE 1: EPAL ALERT HOME UNIT



FIGURE 2: EPAL ALERT TRANSMITTER IN WATCH CONFIGURATION



FIGKURE 3: EPAL ALERT IN NECKLACE CONFIGURATION

EPAL (Electronic Proximity and Location) is a portable system that keeps track of up to 50 target people or objects per home unit. It tells you when a target is out of range (up to 250 feet) and allows you to locate the target via the home unit up to 450 feet with its small external directional antenna (shown below). Since the home unit is portable it can be easily carried to any location to aid in the tracking of the target. If a larger antenna is used, the location and proximity distances increase considerably (i.e. a roof mounted antenna which can be plugged into the home unit). The home unit continuously monitors the 50 targets utilizing a transmitter that is attached to each person or object. The transmit distance can be easily adjusted allowing the user to shorten the distance a target can wander before an alarm sounds on the home unit. The home unit also can determine whether a transmitter

has been removed from a person or object and signals a warning when any transmitter's battery is low and needs to be changed or charged.

There are four pushbuttons (5 on some units that have separate on and off switches). The three buttons labeled SELECT, ACTIVE/FIND, and ACKNOWLEDGE are the buttons that control the device.

SELECT BUTTON:

The select button is used to select any one of 50 numbers. Each of these 50 numbers will be assigned to as many as 50 transmitters that are attached to up to 50 targets. Once the user stops on a number, that number's status can be changed and can be interrogated.

ACTIVE/FIND BUTTON:

This button is used once the select button has selected a target. If the button is pushed once it will show the current status of the transmitter. The transmitter can either be ACTIVE or INACTIVE. The word INACTIVE means that the home unit simply ignores that transmitter even though the transmitter is sending data to it. If the user wishes to change the status he simply pushes the button until the desired status shows on the LCD. If another transmitter is to have its status changed simply press the SELECT button until the desired transmitter shows on the LCD. The ACKNOWLEDGE button must then be pressed to make the status selections valid. The ACTIVE/FIND button can also be used to select the FIND MODE for a specific transmitter. To make the FIND MODE valid the acknowledge button must be pushed. In the FIND MODE the LCD display will show a bar graph (figure 4) whose length is proportional to the direction and distance to the target. So if the user holds the unit next to his body as depicted in figure 5 and turns in a circle. The longest bar indicates the direction that that transmitter is in. To aid in locating the longest bar graph, a carrot (>) continually shows the longest bar position. To reset the carrot simply push the ACTIVE/FIND button. To exit from the FIND MODE the ACKNOWLEDGE button must be pushed. The ACTIVE/FIND button if pushed past the FIND MODE selection will show the status of both the battery and whether the device is connected to the target.



Figure 4 – Bar Graph and Carrot

ACKNOWLEDGE BUTTON:

The **ACKNOWLEDGE** button is used to activate the modes that the user has selected with the **ACTIVE/FIND** button. If the **SELECT** button has been pressed the home unit is not functional until the **ACKNOWLEDGE** button is pressed. The acknowledge button, if pressed 3 consecutive times without pressing any other button, will clear the memory that stores the current status selections of all transmitters.

ALARMS:

There is an alarm that sounds when any one target wanders out of range. Once the alarm sounds the user can simply press the **ACTIVE/FIND** button and go immediately into the find mode for the missing target or press the **ACKNOWLEDGE** button to stop the alarm.

NON-VOLATILE MEMORY:

Each home unit has memory to keep up with the current settings of all the transmitters. The memory updates approximately every 5 minutes. Once data is sent to the memory, the memory retains that information even when the home unit is turned off. It can be cleared as discussed earlier by pressing the ACKNOWLEDGE button 3 consecutive times while the home unit is on.

TRANSMITTER RANGE ADJUST:

The small transmitter board is accessible in the units shown in figures 2 and 3 by removing one screw from the plastic case enclosing the transmitter. Once the transmitter is visible, the small screw adjustment on the board can be changed to decrease the distance a target can wander before it is determined to be out of range. To adjust the distance move away from the target the distance that will be considered out of range and adjust the potentiometer until the alarm sounds. Once the ACKNOWLEDGE button has been pushed and the target is back in range the LCD will show that no targets are out of range.



Figure 5

THIS EQUIPMENT COMPLIES WITH PART 15 OF THE FCC RULES. OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS: 1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE, AND 2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED, INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRE OPERATION. ANY CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THE MANUFACTURER COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.