

User Manual

DRAFT COPY OF THE INSTRUCTION MANUAL

Security Phone User Interface Operation Specification

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Revision History

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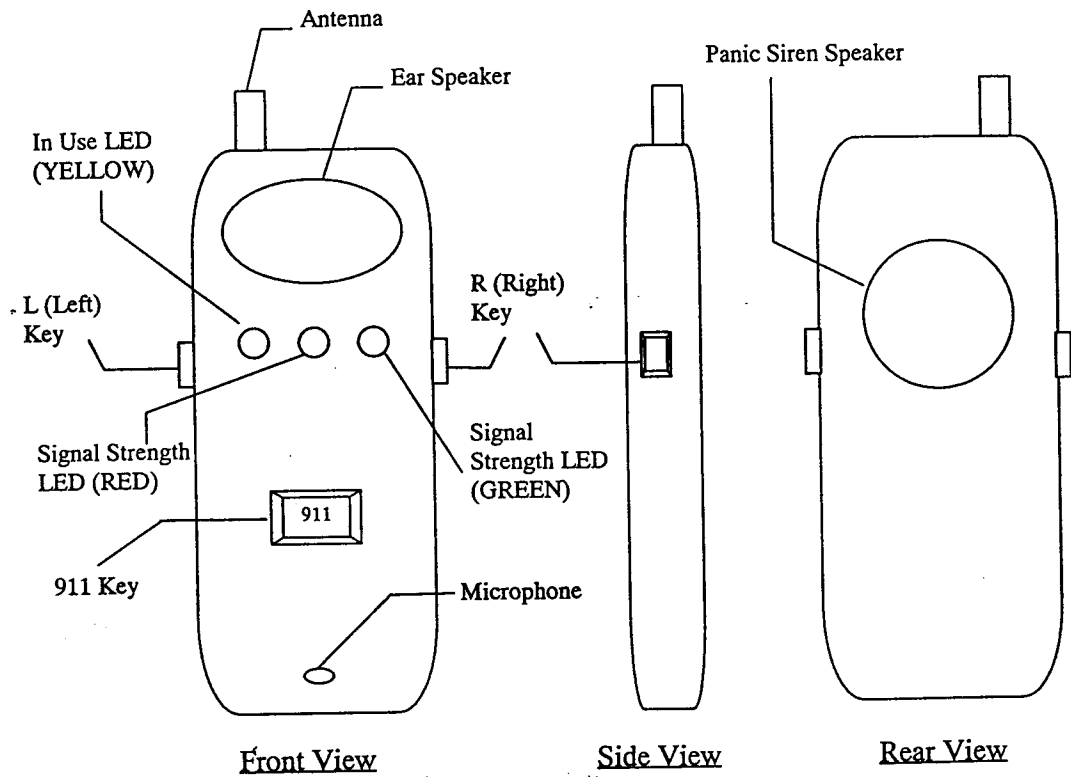
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1. Overview

1.1 Functional View of Phone

The following figure is a simplified functional view of the phone to show what kind of keys, indications etc. on the phone, and the actual appearance of the phone is different from this figure.



1.2 Indications

Indication	Functions
In Use LED	<i>Flashing Yellow</i> : Indicates a call is in progress. <i>Solid Yellow</i> : Indicates a call is established.
Signal Strength LED	Indicate the signal strength: <i>Red</i> Signal too weak or No service <i>Green</i> : Signal is acceptable or strong

1.3 Keys

Key	Functions
[911]	Emergency Call Origination
[L] (Left)	Signal Strength indication Panic Siren activated in conjunction with [R] key
[R] (Right)	Signal Strength indication Panic Siren activated in conjunction with [L] key

Note: Keys are activated when push for 1 second, and functions are de-activated in toggle mode.

1.4 Tones

Tone	Description	Source
Panic Siren	High/Low volume panic siren	Panic siren speaker
Pacifier Beep	Beep when an emergency call is established	Ear speaker

1.5 Feature List

No.	Item	Functions
1	Emergency Call	Single key press emergency number dialing
2	Panic Siren	Panic siren generation for emergency use
3	Signal Strength Indication	LED signal strength indication
4	Battery Low Indication	All LEDs flashing and low level Panic Siren beeping until battery dies

2. Operation

There are 5 distinctive modes of operation in the phone:

- Power down mode
- Emergency Call mode
- Panic mode
- Signal Indication mode
- Test mode

This section describes the operation of each mode.

2.1 *Power Down Mode*

In Power down mode, all of the phone's circuits are turned off to conserve the battery. The battery life will be the standard shelf life of the alkaline batteries, typically 1 year. As the panic phone will be mostly stored in an unattended manner, active battery condition monitoring will deplete battery life very significantly without good operational advantage. The design for maximum battery life with user activated self-test is considered to be most optimum.

In power-down mode, the phone waits for a key press and enters other mode based on the entered key sequence.

2.2 *Emergency Call Mode*

When the phone is in Power down mode, holding the [911] key for 1 second will place an emergency call.

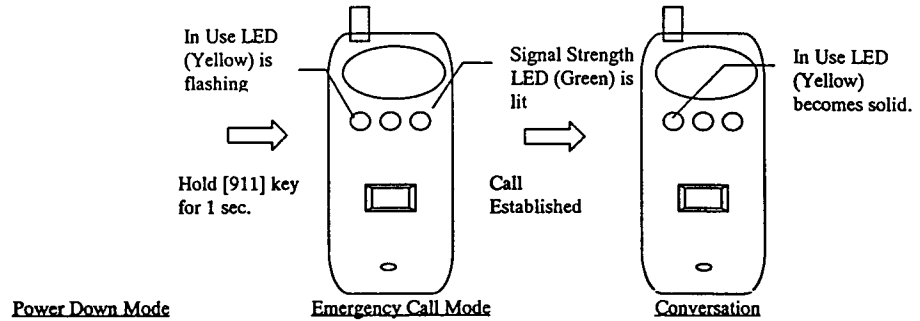
When the phone is powered on, it will turn on all LEDs first for 1s and then turn them off. And then the phone makes a pacifier beep for 0.5s.

If the Signal strength is too weak to originate a call, Signal Indicator LED (Red) will be lit and the phone will enter Signal Indicator mode. If the Signal Strength is acceptable, the Signal Indicator LED (Green) will be lit and the phone will enter Emergency Call mode. Then, the phone will originate an emergency call to the number stored in the phone's memory (Factory default is "911"). The In Use LED will begin flashing and if a call is established, the In Use LED will be lit solid, and the microphone and ear speaker will be enabled. A pacifier beep will be sounded.

Pressing and holding the [L] and [R] keys simultaneously for 1 second will turn *on* the panic siren if the emergency call has not been already established. The panic siren will be turned *off* when the emergency call is established. If the phone fails to establish a call,

the panic siren will continue until the [L] and [R] keys simultaneously for 1 second and the siren is turned off.

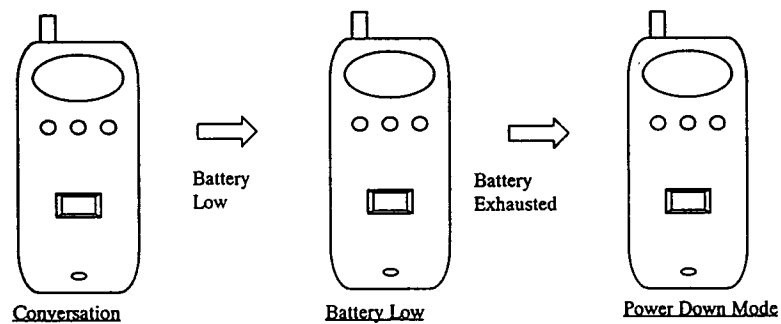
In case a call attempt fails, the phone will continuously attempt to make a call with the flashing (0.5s interval) "In Use" LED (Yellow) until it establishes a call. When a call is established, the "In Use" LED turns to solid yellow.



After a call is established, when the [911] key is held for 1 second or the other party hangs up, the call will be released, the In Use and Signal Strength Indicator LED's will be turned off, and the phone will then go back to Power Down mode.

When the battery goes low during a call, all LEDs will start flashing. Intermittent Pacifier Bleep tone is audible. The panic phone will continue its normal operation until the battery power is exhausted. If the panic phone operation is de-activated, all LED will still continue to flash until the battery is exhausted.

If the battery goes low without a call has been established, all LEDs will continue flashing and low level Panic Siren beeping until battery is exhausted.

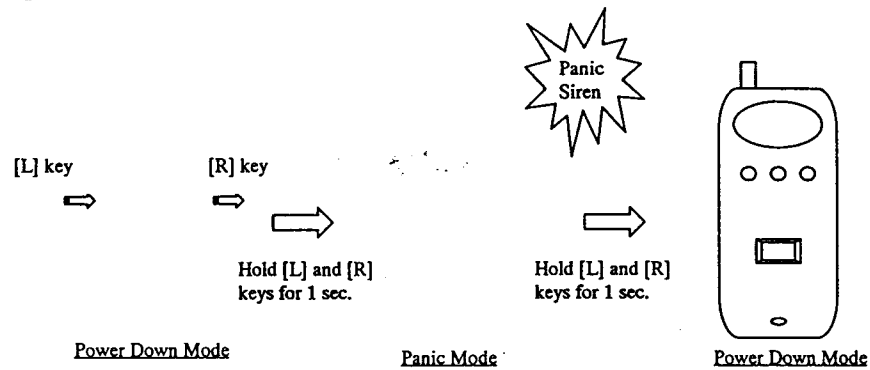


When a call is established, the ear speaker volume is set to "Normal" level. The volume can be adjusted by pressing the [L] key. Pressing the [L] key will switch the volume between "Normal" (-6dB) and "High" (0dB).

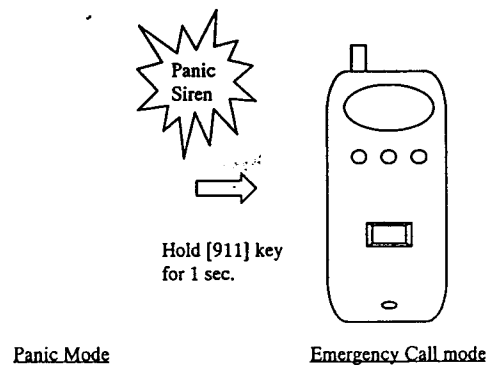
2.3 Panic Mode

When the phone is in Power Down mode or Signal Indicator mode, pressing and holding the [L] and [R] keys simultaneously for 1 second will turn *on* the panic siren. When the phone is powered on, it will turn on all LEDs first for 1s and then turn them off.

Then the panic siren will start and the phone will enter Panic mode. Pressing and holding the [L] and [R] keys simultaneously for 1 second again will turn *off* the panic siren.



While the panic siren is active, holding the [911] key for 1 second will place an emergency call. The panic siren will be turned off if the call is established. If the Signal strength is too weak to originate a call, Signal Indicator LED (Red) will be lit, the phone will enter Signal Indicator mode. If the Signal Strength is acceptable, the Signal Indicator LED (Green) will be lit and the phone will enter Emergency Call mode.



2.4 Signal Indicator Mode

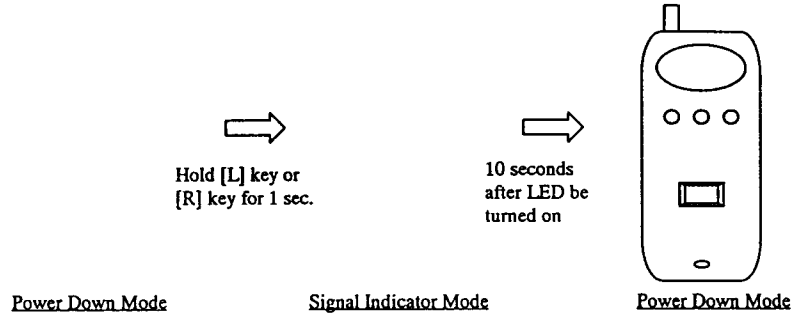
When the phone is in Power Down mode, holding the [L] key or the [R] key for 1 second will let the phone do the self-test.

In the self test, the phone will first turn on all LEDs for 1s and then turn off all LEDs, next, the phone will make a pacifier beep for 0.5s and then make a low volume Siren beep for 0.5s. Then the phone will enter Signal Indicator mode.

The phone will turn *on* the signal indicator. The color of the signal indicator LED represents the signal strength as follows:

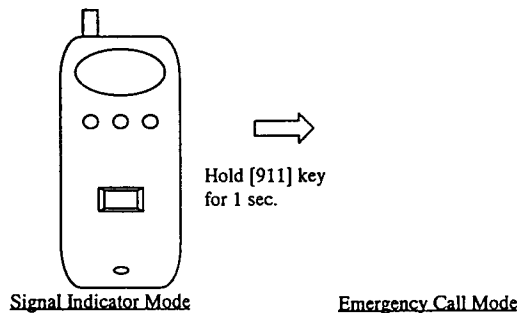
Color of LED	Signal Strength
Green	Signal strength is acceptable or strong
Red	Signal is too weak or out of service

The signal indicator will be turned off automatically 10 seconds after the Signal indication LED is turned on and the phone will then go back to Power Down mode.

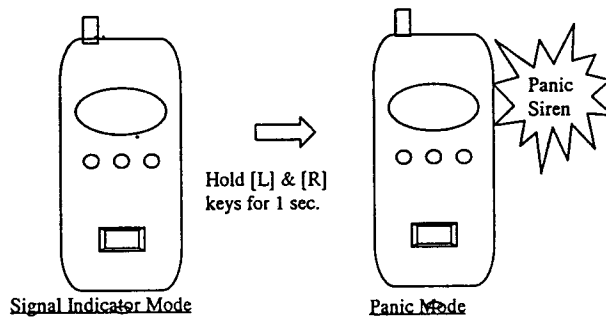


While the signal indicator is active, the phone will check the battery level. If low battery is detected, all LEDs will be flashing and low level Panic Siren will be beeping until battery is exhausted. This is to ensure that the user replaces the batteries. The user can remove the batteries at any time.

During the signal indicator mode, holding the [911] key for 1 second will place an emergency call as before. The phone will enter Emergency Call mode.



While the signal indicator is active, pressing and holding the [L] and [R] keys simultaneously for 1 second will turn *on* the panic siren. The panic siren will start, and the phone will enter Panic mode as before.

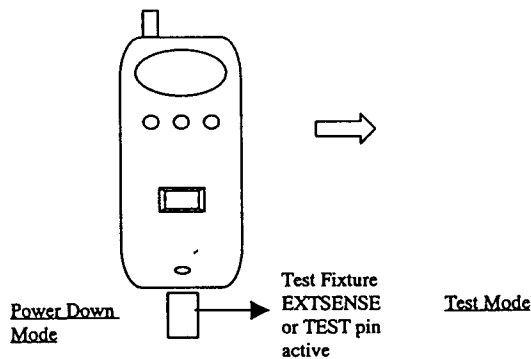


2.5 Test Mode (for Factory use only)

There is a test connection located on the bottom of the phone. Two pins of the test connection are used to put the phone into Test mode. One is EXT-SENSE pin and the other is TEST pin.

When a test fixture is connected to the test connection and EXT-SENSE or TEST pin (or both) are active (active low), press any key will power up the phone and the phone will do the self test.

In the self test, the phone will first turn on all LEDs for 1s and then turn off all LEDs, next the phone will make a pacifier beep for 0.5s and then make a low volume Siren beep for 0.5s. Then the phone will enter Test mode.



In the test mode, the phone will check signal strength and battery level all the time, if signal strength is too weak, signal indicator Red LED will be lit, if signal strength is acceptable, signal indicator Green LED will be lit. If battery low is detected, all LEDs will be flashing and low volume Siren beep will be sounded.

If the [911] key was pressed (holding the key for 1 second is not required), the phone will originate a call to the number stored in the phone's memory. The In Use LED will begin flashing and if a call is established, the In Use LED will be lit solid, a pacifier beep will be sounded and the audio path will be set based on the status of the EXT-SENSE and TEST pin.

EXTSENSE pin	TEST pin	Audio Path
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Active	Active	Microphone and ear speaker enabled
Active	Inactive	Microphone and ear speaker disabled, and Audio path routed to the test fixture
Inactive	Active	Microphone and ear speaker enabled

If a call attempt fails for some reason, the In Use LED will be flashing until the call is established.

After a call is established, when the [911] key is pressed (holding the key for 1 second is not required) or the other party hangs up, the call will be released, the In Use LED will be turned off and the phone will remain in Test mode.

When the test fixture is removed or EXT-SENSE and TEST pins go inactive, the phone will go back to Power Down mode.

3. Cellular Phone Parameters

The phone has a non-volatile memory to store the cellular phone parameters. These parameters are required to register to a cellular system, originate and receive a call.

The following chart is a list of the proposed default values for the cellular phone parameters.

Parameters	Acronym	Proposed default values
Electric Serial Number	ESN	A unique serial number will be assigned to each phone.
Number Assignment Module	NAM	One fixed number will be used. MIN : (123) 456-7890, System : B, SID : 20, IPCH : 334, ACCOLC : 15, SCM : Class III + 25MHz + No DTX, GIM : 00, LU : 00, MIN Mark : 01
System Selection		B Prefer A Attempt a call origination through B System first. If fails, try System A.
Authentication Key	A-Key	Will be initialized to all '0's
Emergency Number		"911"