# GIANT ELECTRONICS LIMITED
## OSSO8 Operation Manual
## For Internal use only

### *Revision History*

| Revision | Date | S/W version | H/W version | Author | Remark |
|---|---|---|---|---|---|
| 1.0 | 18 Jun 2002 | 0.3.1 | 3-button | Yk. So | |
| 1.1 | 19 Jul, 2002 | 0.3.1 | 3-button | Yk. So | 1.ROM checksum disabled.<br>2.Reset operation changed |
| 1.2 | 22 Oct, 2002 | 0.3.4 | 3-button | Yk. So | Changed LED flashing, power-up time, and reset |
| 1.3 | 13 Feb.,2003 | 0.3.4.1 | 3-button | T.K.Lee | Change battery low voltage to 3.505V, battery dead voltage, charging LED state and standby time, correct key function of mute, hold and test mode. |

## 1.Introduction

The OSSO8 headset is a bluetooth headset which fully conform to bluetooth specification 1.1 and support the Headset profile.
This document defines the operation of OSSO8 headset, and provides examples with using Ericssion T39mc mobile phone.

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in RFC 2119.

## 2.Glossary

Headset: OSSO8 headset
AG: Audio Gateway
B1: OSSO8 button 1
B2: OSSO8 button 2
B3: OSSO8 button 3
DUAL LED : LED B: Blue Light Emitted Diode on OSSO8
LED Y: Yellow Green Light Emitted Diode on OSSO8
DUT: Device Under Test

## 3. Before Use

- Please make sure the headset LED is off before charging. If the headset LED B is still flashing. Please press and hold the B1 button 1 for more than 5 seconds to power off the headset. Then place the headset into the charger for charging. At the beginning, the green LED(on charger) will on indicating charging. Finally the green LED(on charger) is turned off indicating charging is complete. It takes around 2 to 3 hours from an empty battery.
- Make sure the headset is power on. If both LED are off, the headset is powered off. Press B1 for 3sec. To power on it.
- Make sure the headset is within range (10m).
- Make sure the headset is paired with an AG.

## 4. Operation Mode

Three operation modes are provided by headset.
i.Normal Operation Mode
ii.RF Test Mode
iii.Diagnostic Mode
Each operation mode must be started from power off state. Once the headset enter an operation mode, it cannot switch to another mode without power off.

### 4.1Normal Operation Mode

This mode is used for normal headset operation.
To enter this mode:
In Power off state, press B1 for 3sec. , B2 and B3 should be released, then release B1.
If success, 3 beep tones will be generated, and the headset will be in idle state. Otherwise, the headset may be battery low or have other problem.

To leave this mode:

In idle or pairing state, press B1 for 5sec. If success, 4 beep tones will be generated, and the headset will be in power offset state.

**4.2 RF Test Mode (for internal testing only)**
This mode is used for bluetooth test mode.
To enter this mode:
In Power off state, press B1 and B2 for 15 sec., B3 must be released, then release B1 and B2.
If success, the headset will be in DUT state, 3 beep tones will be generated, both LED B and LED Y will be on. In DUT state, the headset will wait for page from the bluetooth tester and let the tester to control it. If no paging for 3 minutes, it will power off automatically.

To leave this mode:
1/ Before paging press B1 for 5 sec. If success, 4 beep tones will be generated, and the headset will be in power offset state.

2/After paging press B1, B2 and B3 together, it will power off, or don't press any key for 3 minutes, the headset will power off.

**4.3Diagnostic Mode (for internal testing only)**
This mode is used for testing the headset hardware.

To enter this mode:
In Power off state, press B1 and B3 for 15 sec., B2 must be released. Then release B1 and B2.
If success, the headset will start self test. After the self test, it enter the manual test state. User can test the ROM checksum, button check and audio test by manually.

To leave this mode:
In manual test state, press B1 for 5sec., or don't press any key for 3 minutes, the headset will power off.

**4.3.1 Self Test will be in following sequence:**
**4.3.1.1 LED Test**
i.LED B turn 0.5s and then off.
ii.LED Y turn 0.5s and then off.
iii.Then LED B and LED Y off for 5s.
4.3.1.2Version Indication
The version is indicated by number of flash (LED). The flash rate is 1s on/ 1s off. The LED B will flash first, it indicate the major version. And then the LED Y will flash, it indicate the minor version. After that, both LED will off for 5s.
4.3.1.3 RAM Test
The headset will preform internal RAM test. If success, the LED B will be on and LED Y will be off. Otherwise, the LED B will be off and the LED Y will be on.
After this, the self tests are finished, and the headset enter manual test state.

**4.3.2Button Check**

In manual test state, press B1 to enter the button test state.
The LED B and LED Y will represent the buttons state of B1, B2, and B3 as follows:

| **Buttons and states** | **LED B** | **LED Y** |
|---|---|---|
| B1 pressed | ON | OFF |
| B1 released | OFF | OFF |
| B2 pressed | OFF | ON |
| B2 released | OFF | OFF |
| B3 pressed | ON | ON |
| B3 released | OFF | OFF |

User must not press more than one key at the same time.
Press B1 for 5 sec. To exit to manual test state.

### 4.3.3ROM Check (Disable in current version)
Due to CSR BlueCore's limitation, this feature is disabled.

### 4.3.4Audio Test Mode (Disable in current version)
Enter the audio test state by press B3.
To be defined...

## 5. Normal Operation Description
The headset is designed to work with a audio gateway(AG). Typical device act as AG is cellular phone and person computer. The headset can only connect to one AG at a time.

### 5.1 Pairing state
To work with an AG, the headset must pairing with it first.
LED indication in this state:

LED B: on
LED Y: on

The following example described the procedure to pairing the headset with cellular phone Ericsson T39mc.

***Headset***

Place the headset within the coverage area of the mobile phone.

- When headset is power off state, press B1 for at least 8 seconds. After 3 seconds, a power on beep tone (3 beeps) will be generated at the ear piece, and the LED B will be flashed at the rate 10ms on / 2.99s off. 5 seconds later, pairing tone (2 beeps) will be generated at the ear piece, then release the button. Both LED B and LED Y will be solid on. This indicated that the headset is in the pairing state.

**Note:** *The first time the headset is turned on it will automatically be ready for pairing.*

Then….

***Mobile phone (e.g. Ericsson T39mc)***

- Select the "Extra" menu from the T39mc and then press "5" to go into "Bluetooth" menu.
- Select "Paired devices".

- Select “Add device”.
- Select “Phone initiates”.
- Select “Headset”.
- Then the mobile will search the bluetooth headset. After it has found the headset, the “GIANT (01)” will be displayed on the LCD. Then press “Yes” and then key in the password code “2222” and press “Yes”. The message “Pairing succeeded” will appear when successful. It indicates the pairing process is completed and the headset will be switched to Idle state, the LED Y off and LED B flashes at the rate 10ms on / 2.99s off. If “Pairing failed” appears on the T39mc, repeat the operation again.

**Note:** *The headset password is 2222.*

5.2**Idle State**

After the headset is powered on, and no audio connection is established and no operation, it will enter idle state.

LED indication in this state:

LED B: flashes at 10ms on / 2.99s off.

LED Y: off (if battery low, flashes at 100ms on / 100ms off).

**5.3 Initiate Call State**

Once you have pairing the bluetooth headset to the cellular phone, the headset can initiate a call. The cellular phone must have voice dial to support this function.

LED indication in this state:

LED B: flashes at 500ms on / 500ms off.

LED Y: off (if battery low, flashes at 100ms on / 100ms off).

In idle press B1 for 2 seconds, LED B will be flashed at the rate 500ms on / 500 ms off, and 4 beep tone will be generated. After the beep tones, use the cellular phone’s voice dial function to dial.

For T39mc, after the pre-dailing the outgoing number and pressing the “Yes”, it will ask you whether “Retrieve call in phone?” Then you should press “No”. The audio connection will be forwarded to the headset.

On success, the headset will switch to Call Connected state. Otherwise, initiate call failed tone (3 beeps) will be generated, and the headset will be returned to idle state.

**5.4 Ringing State**

If the headset is paired, audible ringing tone is generated during incoming call, and the headset will be in ringing state.

LED indication in this state:

LED B: flashes at 500ms on / 500ms off.

LED Y: off (if battery low, flashes at 100ms on / 100ms off).

In this state, B2 and B3 will be used for adjust the ring volume. To accept the call by press B1 and the ear piece sounds *call accept beep tone (4 beeps).* After this beep tones, it switch to the Call Connected state.

**5.5 Call Connected State**

This state is entered when audio connection is established with the AG. Voice from user can transmit to AG, audio signal from AG can be received.
LED indication in this state:

LED B: flashes at 500ms on / 500ms off.
LED Y: off (if battery low, flashes at 100ms on / 100ms off).

In this state, the following operations can be preformed.

**5.5.1 Volume Control**

There are several volume levels for the ear piece. Press and release *VOL DOWN* button less than a second of the headset can set volume down, vice versa, *VOL UP* button for volume up, *volume change beep tone (1 beep)* sounds. When volume reaches maximum/minimum, *volume maximum/minimum beep tone (4 beeps)* sounds

**5.5.2Termination Call**

To terminate the call, pressing the B1 button of the headset for at least 2 seconds and a *call termination beep tone(4 beeps)* sounds, then release button. The headset will be returned to idle state.

**5.5.3Mute Microphone**

To mute the microphone, press B3 or B2 at least 2 seconds and a *microphone mute beep tone (3 beeps)* sounds, then release the button. During microphone is mute, a *periodic beep tone (1 beep)* sounds, and both LED B and LED Y will be flashed.

**5.5.4Hold Call**

In mute mode, press B3 or B2 once and a call hold beep tone (3 *beeps)* sounds, then release the button. Both LED B and LED Y will be flashed.

**5.5.5.Cancel Hold Call**

In hold mode, press B3 or B2 once and a cancel hold *beep tone (3 beeps)* sounds, then release the button. LED B will be flashed at the rate 500ms on / 500ms off. And LED Y will be off.

**5.5.6LED Indication Summary in Call Connected State**

| **Call Status** | **LED B** | **LED Y** | **LED Y (on battery low)** |
|---|---|---|---|
| Normal Talking | Flash 500ms on / 500ms off | OFF | Flash 100ms on / 100ms off |
| Muted | 2000ms off | 2000ms on | 2000ms on |
| | 1000ms on | 1000ms off | 1000ms off |
| Hold | 1000ms off | 1000ms on | 1000ms on |
| | 1000ms on | 1000ms off | 1000ms off |

**5.6LED Indication Summary in different State**

| **State** | **LED B** | **LED Y** | **LED Y (on battery low)** |
|---|---|---|---|
| Idle | Flash 10ms on/ 2.99s | OFF | Flash 100ms on / |

| | | | |
|---|---|---|---|
| | off | | 100ms off |
| Pairing | Solid on | Solid on | Solid on |
| Initiate Call | Flash 500ms on/ 500ms off | OFF | Flash 100ms on / 100ms off |
| Ringing | Flash 500ms on/ 500ms off | OFF | Flash 100ms on / 100ms off |
| Call Connected | Depend on Call status | Depend on Call status | Depend on Call status |

**6. Force Powerdown**

User may force the headset power-down at any state by press B1, B2 and B3 together.

**7.Battery**

Battery use Li-Polymer 3.8V.
Standby time: more than 72 hr.
Talk time: 5 hr for HV3 data packet.

**7.1 Battery Low**

In normal operation mode, When battery is dropped to below 3.505V (Li-Polymer), a low battery warning beep tone (2 beeps) sounds every 5 seconds. When battery is dropped to below 3.28V, the headset will automatically turn off.

**7.2 Charging**

The headset actually can be charged on both Power Off and Power On states. When charging is required, put the headset in the charger. It takes about 2 to 3 hours for fully charge when the headset is in Power Off state. Charging complete will be indicated via the Green and Red dual LED in the charger are ON.