



**Application Note:** 2456936.913368  
**Date:** October 6, 2014  
**Topic:** Sleep Mode  
**Overview:** This AppNote addresses Sleep Mode.

## Introduction

Sleep Mode is a low-power mode used in devices such as computers and mobile phones.

Zebra has adapted the Sleep Mode concept to reduce power use and extend battery life on printers. The feature first shipped on the ZQ500 printer series. While in this mode, the printer's LCD display screen will turn off, and all communication interfaces will be shut down.

On the ZQ500, just before the printer enters Sleep Mode, the LCD display will show a 'SLEEPING' alert to inform the user. While the printer is in Sleep Mode, the power LED will slowly and continuously pulse on and off.

The color of the printers power LED while in Sleep Mode will depend on the printers charge state:

- Green on battery power.
- Amber if charging

## Configuring Sleep Mode

To configure Sleep Mode, the following SetGetDo commands are used:

### **power.sleep.enable**

**Purpose:** Enables Sleep Mode. Default is set to 'on'.  
**Range:** on or off  
**Default:** on

**NOTE:** By setting **power.sleep.enable** to 'on', all Sleep Mode functionalities will be enabled (according to the other Sleep settings). If **power.sleep.enable** is set to 'off', Sleep Mode functionalities will be disabled and the printer will not sleep under any circumstances.

### **power.sleep.now**

**Purpose:** Causes printer to enter Sleep Mode immediately  
**Range:** On  
**Default:** None

**NOTE:** This "Do" command SGD will force the printer into Sleep Mode immediately, as long as **power.sleep.enable** is set to 'on'.

**power.sleep.timeout**

Purpose: Tells the printer when to enter Sleep Mode after a set time  
Range: 0 to 65535  
Default: 120 seconds (2 minutes)

**NOTE:** This SGD will put the printer into Sleep Mode if the printer is inactive after the timeout value set in seconds. The timer state is shared with **power.inactivity\_timeout**. The soonest the sleep timeout counter will start, or that the printer can be put into Sleep Mode using the power button, is 30 seconds after boot. This ensures that the user has time to send commands to the printer should they wish to alter settings before the printer enters Sleep Mode.

## Command Example

The following examples assume that **power.sleep.enable** is set to 'on'

Configuring the printer to enter Sleep Mode after 2 minutes of inactivity:

```
! U1 setvar "power.sleep.timeout" "120"
```

**NOTE:** the command must be followed by a carriage return or a space character.

Alternatively, the user can enter Sleep Mode by pressing the Power Button for between 1 and 3 seconds.

## Waking From Sleep

The most common way to wake a printer from Sleep Mode is by pressing the Power Button for between 1 and 3 seconds. If the Power Button is pressed for longer than 3 seconds, the printer will wake and then shut down completely.

When the printer wakes from Sleep Mode, all enabled interfaces will be started. This means the printer will once again enumerate via USB on the host system. It also means the printer will need to completely re-associate to any previous connection to WLAN.

The printer will also wake up and then perform an automatic and complete shut down if the **power.low\_battery\_shutdown** threshold is exceeded during a periodic battery check.

## Wake on Bluetooth

The printer supports the ability to wake from Sleep Mode via the Bluetooth 4.0 interface. The printer can be revived from Sleep Mode if a Bluetooth device attempts to contact the printer's Bluetooth radio. This includes a connection attempt, a pairing event, data sent to the printer while already paired, and a disconnect event. The printer will not wake on Bluetooth discovery inquiry events.

## Sleep Mode Restrictions

The printer will not enter Sleep Mode (even if issuing a **power.sleep.now** command) in the following situations:

- Prior to thirty seconds after boot
- While:
  - Printing
  - Executing a Mirror event
  - Downloading firmware
  - An alert that requires user acknowledgement is displayed on the LCD
  - Reading or writing an NFC tag
  - Consuming data from a communications port
  - The **power.sleep.enable** setting is 'off'