



Grandstream Networks, Inc.

GRP260x Series

Energy Saving Guide



GRP260x Series - Energy Saving Guide

INTRODUCTION

Power saving mode is a feature introduced to IP voice telephony devices to reduce the power consumption of idle devices, this feature can be very useful, especially when it's implemented in the case of mass deployment of IP phones, where reducing the IP phone's energy consumption can have a huge positive impact cost wise,

Throughout this guide, we will explore how Grandstream carrier-grade IP phones provide in their latest firmware a very good option for energy-saving that can be utilized to reduce business energy costs.

ENERGY EFFICIENT ETHERNET

The energy-efficient Ethernet (EEE) is a technology that helps in reducing the power consumption on physical layer devices. It reduces power consumption during periods of low link utilization.

EEE saves energy by switching part of the transmission circuit into a low-power mode when the link is idle.

Configuring the EEE on interfaces includes enabling EEE on Base-T copper ethernet port based on the power utilization and also verifying if EEE is saving energy on the configured IP phone.

This technology was founded by the Institute of Electrical and Electronics Engineers (IEEE) through the **IEEE 802.3az** task force in 2007.

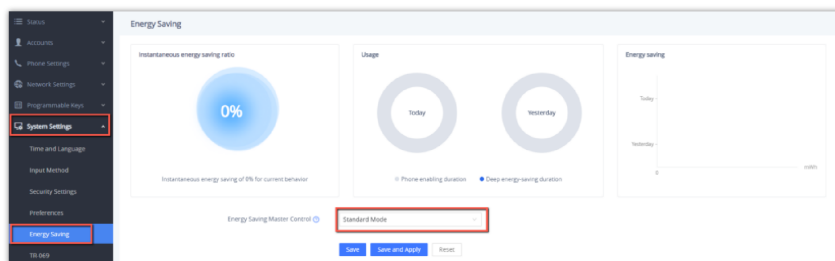
The concept of the EEE Technology

In order to reduce power consumption, there are several methods available. In Fast Ethernet and faster links, constant and significant energy is used by the physical layer as transmitters are active regardless of whether data is being sent. If they could be put into sleep mode when no data is being sent, that energy could be saved. When the controlling software or firmware decides that no data needs to be sent, it can issue a low-power idle (LPI) request to the Ethernet controller's physical layer.

ACTIVATING ENERGY SAVING MODE

Power saving mode is disabled by default, it can be enabled by following these steps :

1. Access the system settings on the UI of the IP phone and then access the energy-saving settings



2. From the menu drop you can choose one of the three energy-saving modes: Standard Mode, Maximum energy mode, and Customized energy-saving mode. it is set to the standard mode by default

3. Click save and apply to activate the energy-saving mode.

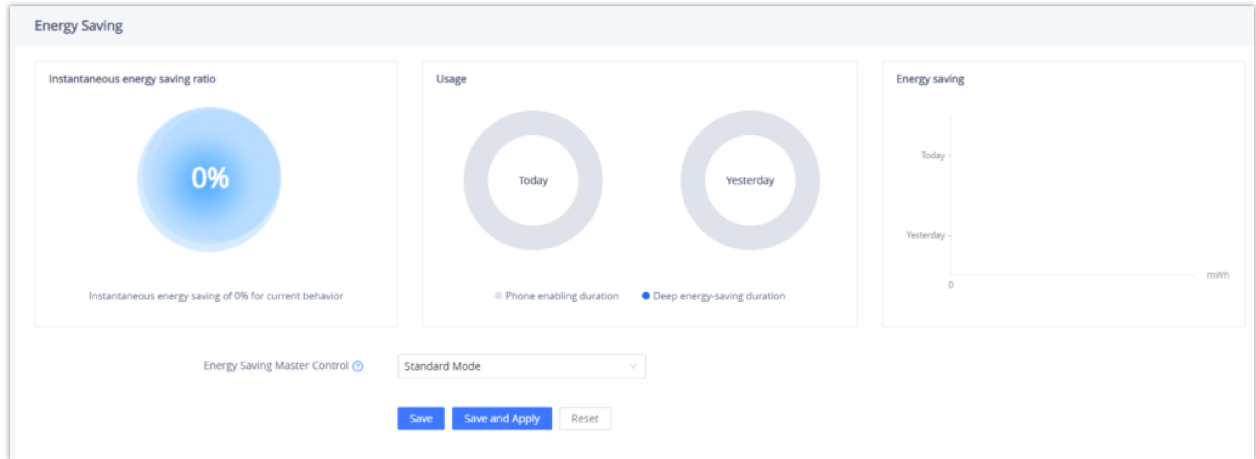
ENERGY SAVING MODES

Power saving is supported in Grandstream GRP phones devices in three different modes. Each one will be discussed separately along with its important characteristics.

- Standard Mode.
- Maximum energy-saving mode.
- Customized energy-saving mode.

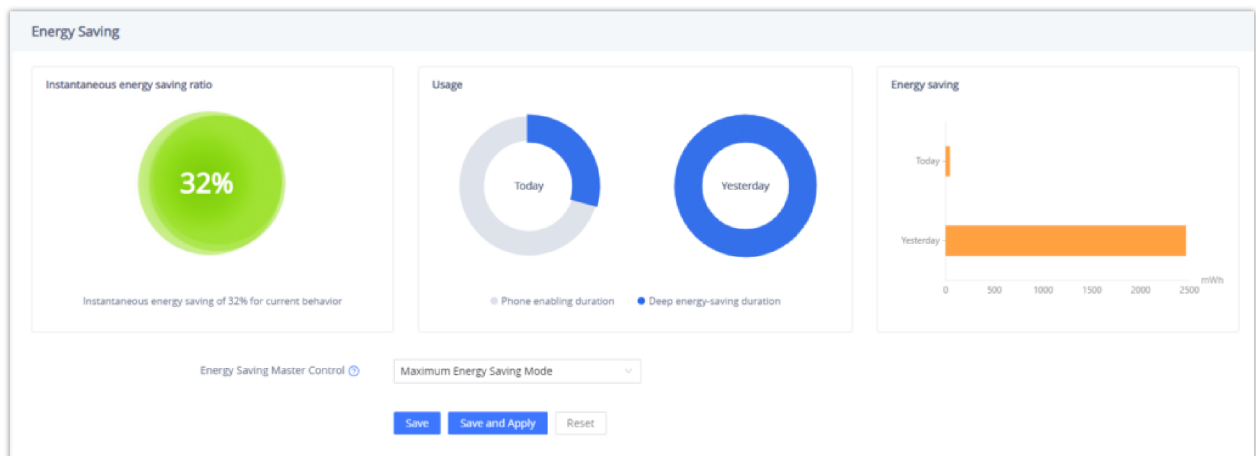
Standard Mode

When the Phone is configured at Standard Mode, the device will behave as it has been prior to the addition of the Energy Saving Control feature. All energy-related features will function according to the individual configurations.



Maximum Energy-Saving Mode

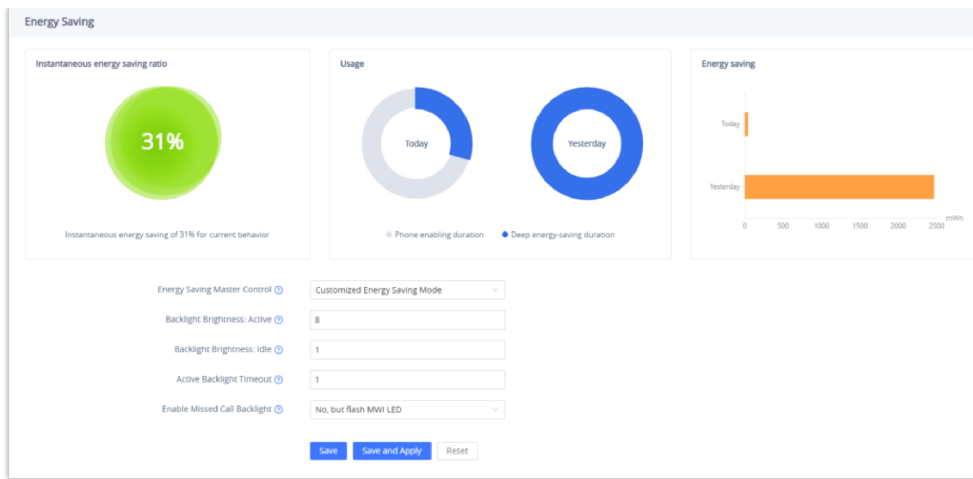
When configured at Maximum Energy Saving Mode, the device will ignore all individual configurations and use the setting that will maximize energy saving. No customization is possible under this mode. with the addition to an Instantaneous energy saving of 32% for current behavior is displayed on the UI



Customized Energy-Saving Mode

When configured in Customized Energy Saving Mode, the device will enable relevant energy-saving measures and support users to operate some essential configuration items. the attributes that the users can change and configure manually are the following :

1. **Backlight Brightness in active mode:** when the phone is active, this option helps to configure the LCD brightness, the valid range is 0-8.
2. **Backlight brightness in idle mode:** When the phone is idle, this option helps to configure the LCD brightness with the condition that its value does not exceed the active backlight brightness, the valid range is 0-8.
3. **Active backlight timeout:** This option sets the timeout interval for the LCD Backlight. The valid range is 0-90.
4. **The option to enable Missed Call Backlight:** When a missed call occurs, this option will enable or disable the LCD backlight, or you can set it to disable but flash the MWI LED.



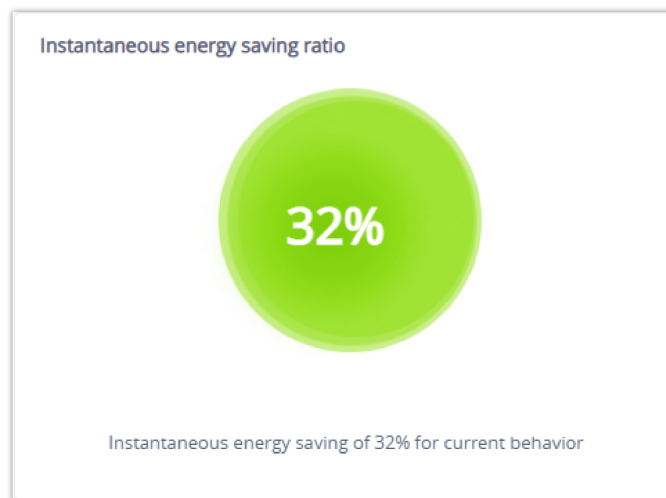
ENERGY SAVING COMPONENTS

When the phone is set to maximum energy-saving mode, some attributes are displayed on the energy-saving page settings, the attributes are :

- Instantaneous energy saving ratio
- Usage
- Energy saving

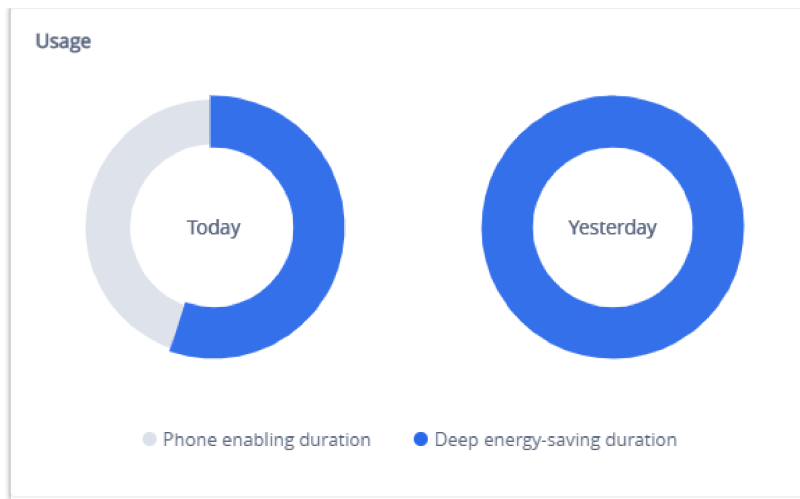
Instantaneous Energy Saving Ratio

This feature Shows a live energy-saving ratio preview based on the energy-saving mode selected. in the case of Maximum energy-saving mode.



Usage

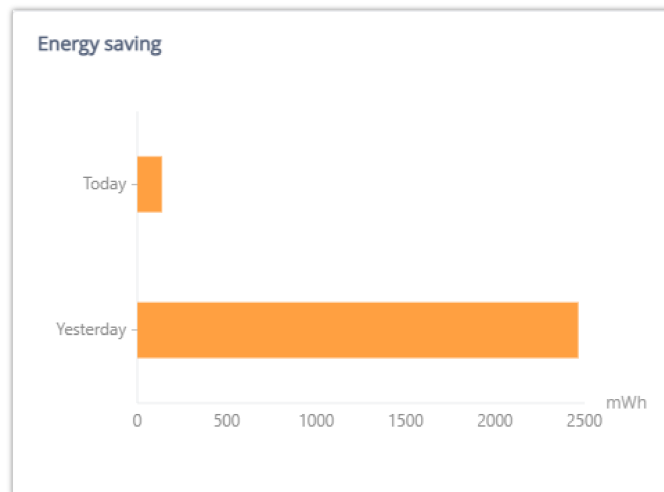
Displays the Deep energy saving duration relative to the phone's enabling duration



Energy Saving

Displays a diagram of energy spent in MWh throughout the phone's activity period.

By default, it compares the energy spent on the current day and the day before.



ENERGY CONSUMPTION COMPARISON

Here we will present a comparison in terms of power consumption between a GRP phone with an enabled Energy saving mode and Another GRP phone with the Energy saving mode disabled. We will take GRP2602 as an example.

The image shows two GRP2602G phones connected to a power meter. The phone on the left has "Energy Saving feature is enabled" and shows a power consumption of 0.163 W. The phone on the right has "Energy saving mode disabled" and shows a power consumption of 0.906 W. A central text box states that the power consumption is 47.76% lower when the energy saving mode is enabled.

Phone Model	Energy Saving Mode	Backlight on average power consumption (mW)	Backlight off average power consumption (mW)
GRP2602G	Enabled	654	436
	Disabled	906	834

Hardware version: V1.0A Software version: 1.0.3.82+ Latest published firmware as of Nov 11, 2022 Energy Saving feature is enabled

Hardware version: V1.1A Software version: 1.0.3.72 Latest published firmware as of Nov 11, 2022

Alternatively, the illustration below compares the power consumption of grandstream carrier-grade and other competitors' IP phones.

