Using ePaper screens with zebrix

What is an ePaper screen?

An **e-paper screen** (or electronic paper) is a display technology that mimics the appearance of ink on paper. Unlike LCD or OLED screens, it does not emit light directly but reflects ambient light, providing visual comfort close to reading on paper. Pixels are made of microcapsules containing electrically charged particles, which move to form text or images. Once the image is displayed, there is no further power consumption. This technology is mainly known through e-readers and electronic shelf labels in retail stores.

In digital signage, these screens are particularly well suited for environments where autonomy, readability, and energy efficiency are essential. They are used, for example, for menu boards, price displays, mandatory legal notices, shop window or outdoor displays, meeting room schedules, transportation signage (information, timetables), advertising, and more generally as a replacement for any paper-based display.

Advantages

- **Optimal readability**: sharp display without glare, even in direct sunlight.
- **Very low power consumption**: only consumes power when updating content, enabling battery-powered operation.
- **Autonomy and reliability**: even without power, the image remains visible.
- **Durability**: no backlight, reduced heat, and long screen lifespan.

Limitations

- **Limited color display**: colors are not as vivid as on a conventional screen or printed paper.

- **Static display only**: 30 to 40 seconds are required to render an image on the panel. No animated or video content possible.
- **Higher purchase cost** than a conventional screen or paper display, but much lower operating cost.

How to connect an ePaper screen compatible with zebrix?

SAMSUNG, SHARP, and PHILIPS offer several ePaper screen models compatible with zebrix.

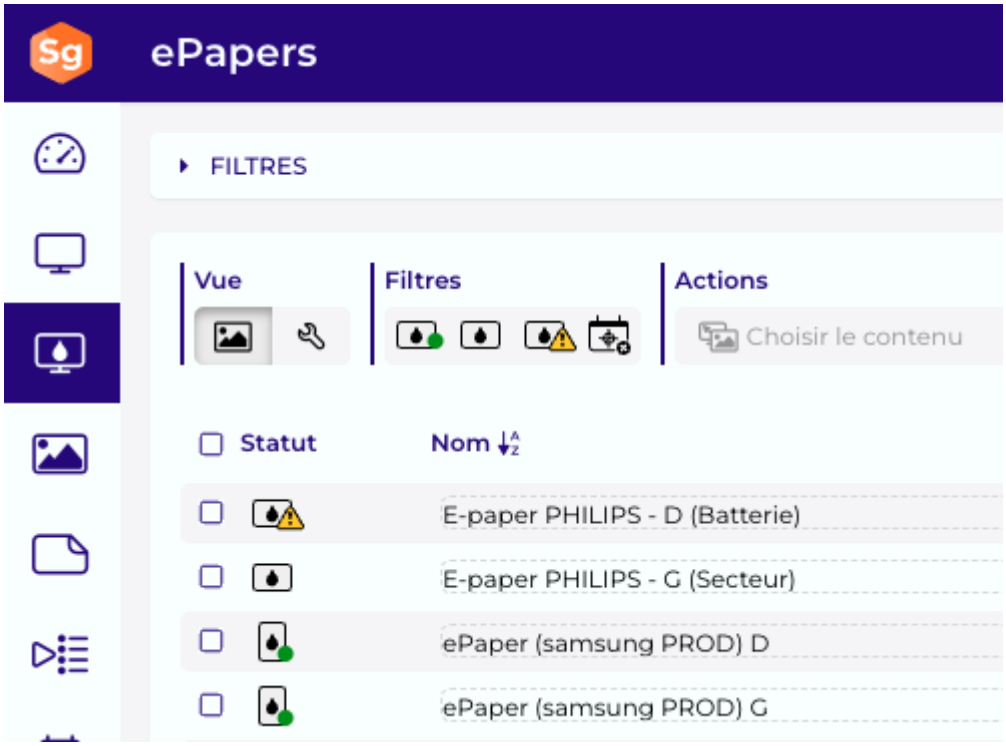
Please refer to the appropriate configuration guide for your screen brand:

- How to install zebrix on a SAMSUNG ePaper screen?
- comment_installer_zebrix_sur_un_ecran_epaper_philips_android
- How to deploy a Sharp E-ink screen (Android) with Zebrix

Monitoring ePaper screens from zebrix

List of ePaper screens

When the first ePaper screen is activated on your zebrix account, a new section will appear in the zebrix interface. ePaper screens will then appear in a separate list from conventional LCD screens.



Understanding screen statuses

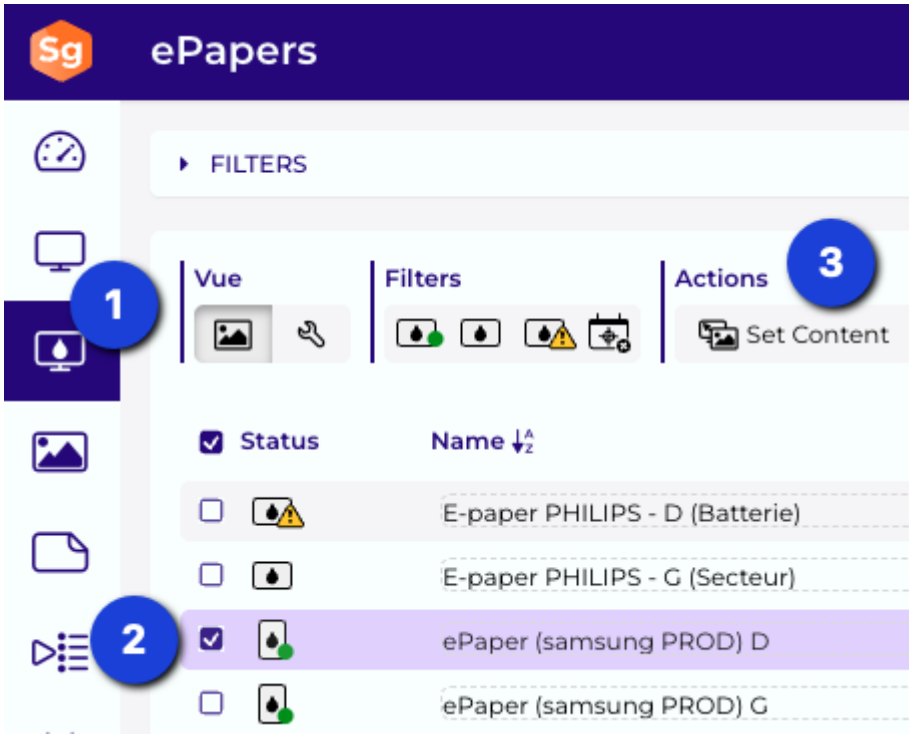
Icon	Status	Description	Content change
	**Online**	The ePaper screen is currently connected.	Executes a content change immediately
	**Printing in progress**	(blinking icon) The screen is connected and currently rendering content	Change in progress
	**Normal**	The ePaper screen is currently in standby. Its last wake-up occurred as scheduled, so its status is considered normal.	Will apply the change at the next wake-up
	**Contact lost**	The screen did not wake up at the scheduled interval, so contact with the ePaper screen is considered lost.	Will apply the change at the next wake-up if the connection is restored

Displaying content on an ePaper screen

ePaper screens are designed for **static display only**. It is **not possible to display animations or videos**. 30 to 40 seconds are required to render an image on the panel, so it is **not viable to play playlists** chaining multiple pieces of content. Zebrix therefore allows **only the display of images or multi-zone pages** on ePaper screens.

Content can be assigned to an ePaper screen in the same way as a conventional screen:

- By using the “Choose content” button after selecting the target ePaper screen(s) (only images and pages will be available!)
- By creating a schedule



Defining wake-up times

ePaper screens are designed to display static content that is updated occasionally (from a few times per hour to a few times per year). To maximize energy savings, the screen can remain in standby most of the time. This enables battery operation, with battery life depending on the frequency of updates.

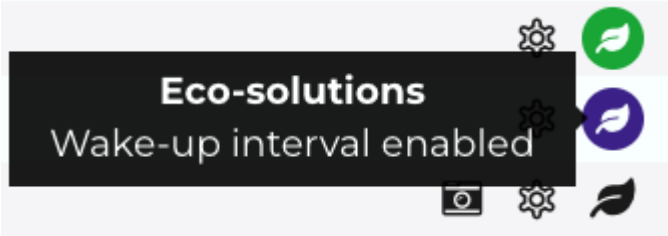
On zebrix, you can choose to:

- **Keep the screen awake permanently (default)**: this allows real-time updates of displayed content (with the 30 to 40 seconds rendering time). (not recommended for battery use)
- **Set a wake-up interval**: the screen will save energy and wake up according to the defined interval. A content change will therefore only be applied at the next wake-up. The interval should be adjusted on a “case by case” basis depending on needs.

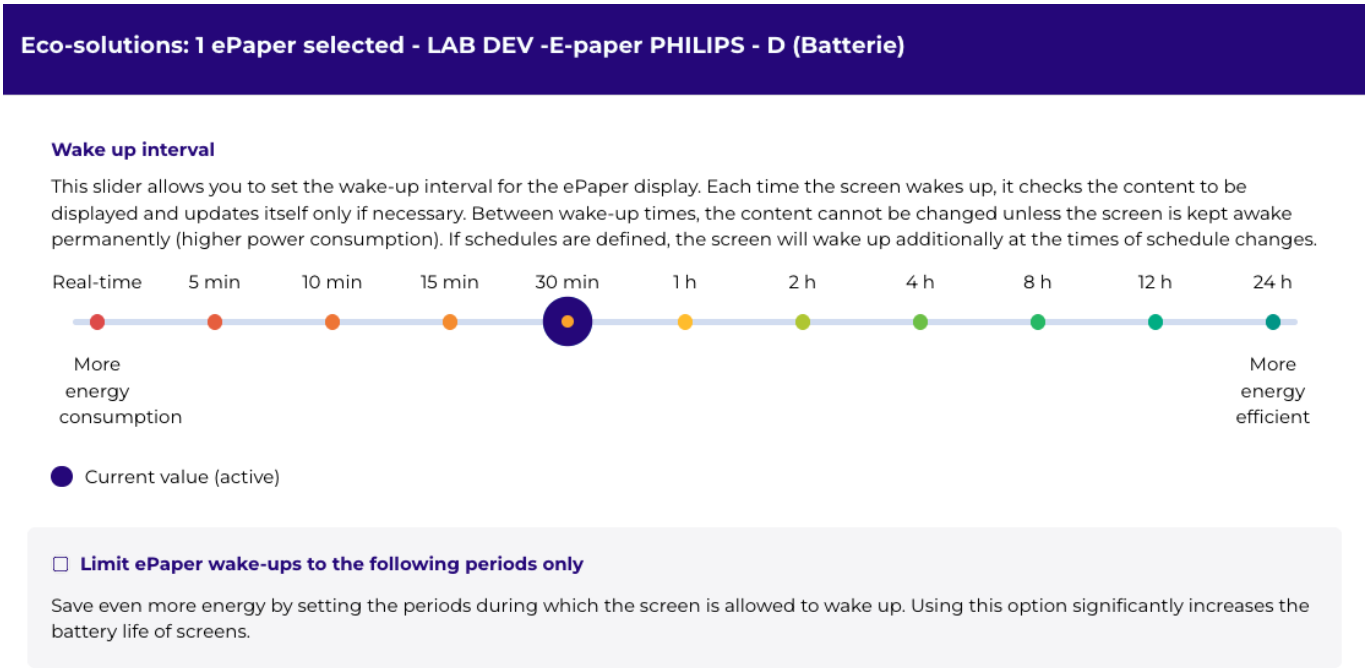
> If the currently displayed content at the time of wake-up **does not need to be changed**, **it is not re-rendered**, and the screen simply returns to standby.

Setting the wake-up interval or permanent awake mode

This can be done from the “Eco-Solution” modal.



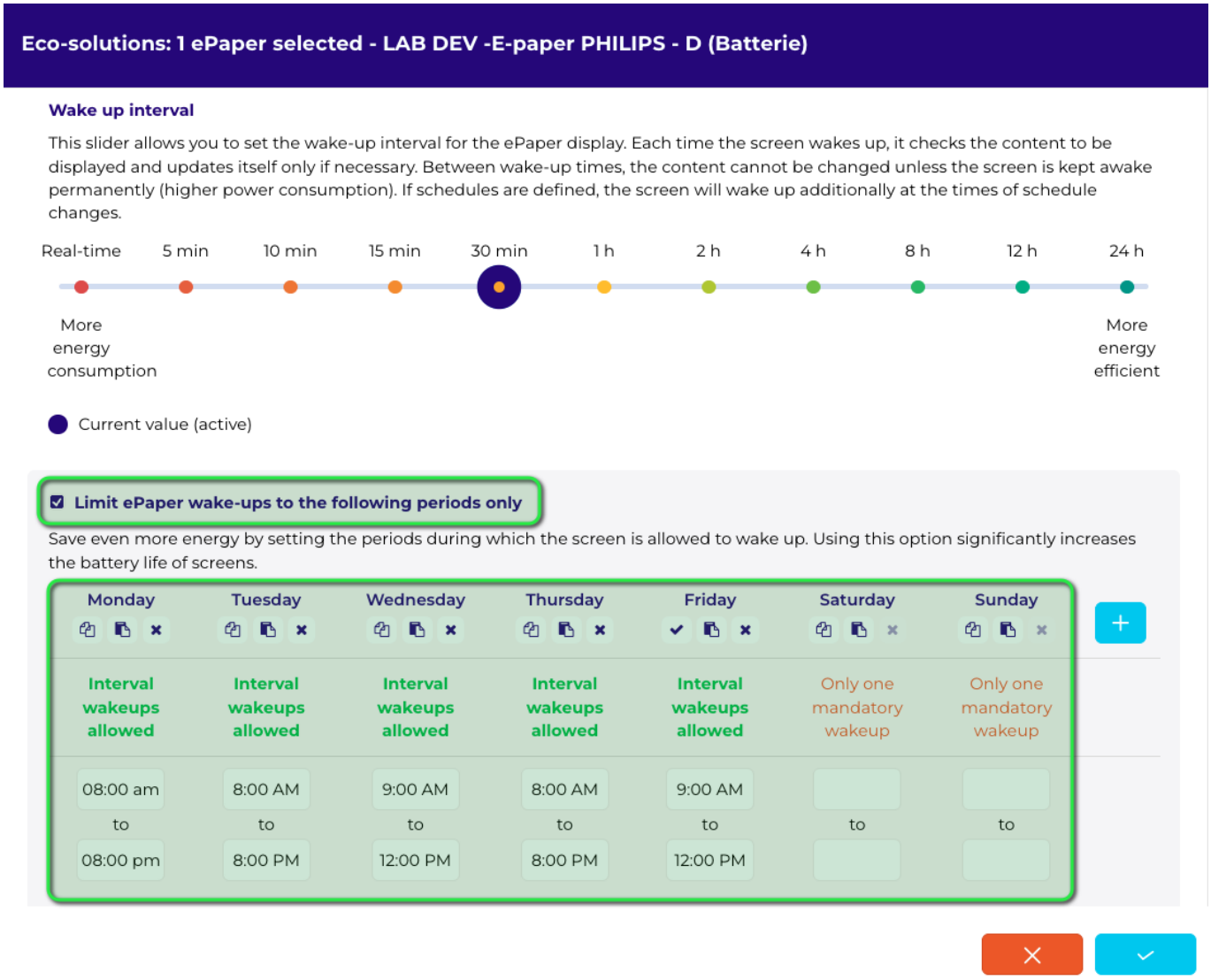
The interval can be set using the “horizontal slider”. By default, the connection with the screen is maintained permanently (no standby). The slider can be moved to the right to the desired wake-up interval value. The further right the slider is, the less often the screen will wake up and the less power it will consume. If this parameter is changed while the screen is in standby, the modification will only take effect at the next wake-up.



Defining time ranges during which the wake-up interval applies (optional)

When power consumption needs to be optimized, for example when the screen runs on battery, it is possible to define time ranges for each day of the week during which this interval should apply. Outside these ranges, the screen will only wake up **once per day (mandatory) as well as when schedules require it.**

These wake-up ranges can be defined by checking the box provided for this purpose in the eco-solution modal:



If this parameter is changed while the screen is in standby, the modification will only take effect at the next wake-up.

In all cases, when a content schedule is defined: the screen will wake up at the scheduled time to change its content. Example: A screen is set to wake up every 24 hours, but one piece of content is scheduled from 9 a.m. to 12 p.m. and another from 12 p.m. to 6 p.m. The screen will wake up at 9 a.m. and 12 p.m. at the time of content changes, regardless of the defined interval or wake-up ranges.