



Homey e-paper screen



User guide :

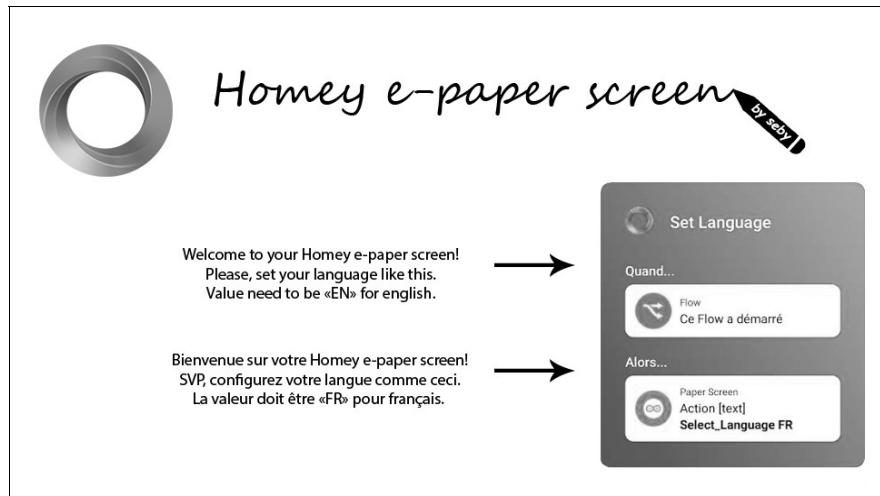
I mention here all the informations for the use of Homey e-paper screen.
The first start, the type of flow I use, all the actions available
in flow cards, and some weather info.

Summary :

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1- First start

Once your Homey e-paper screen is ready, connected to your wifi network and you have added it to Homey, you are normally in front of this screen:



Create a flow like this:



Click on "Action" and select "Select_Language" and in "Value" enter "FR" for French and "EN" for English.

You should have one of these 2 cards:



Run your flow, the ESP32 will restart and the language will be set.

You won't need to set the language afterwards, its value is saved in flash memory and retrieved each time ESP32 wake up.

You can change it at any time by calling this card again with the desired value.

2- Parameter cards

(I call it cards but ultimately it's only the values that change)

At each changed parameters, the ESP32 will restart to apply it.

There are 5 parameter cards:

- The "Select_Language" card we saw before



- The "Time_To_Sleep" card



Deep Sleep is a function that is in the

ESP32 allowing the ESP to enter deep sleep in order, primarily, to increase autonomy during battery project. Which is the case here.

This card allows you to define the sleep time (in seconds, so 5 minutes in example above). The longer it is, the longer your battery life will be important but less values will be less updated. It's up to you to find the right balance. A value of "0" disable the Deep Sleep mode, to activate it you will have to configure 60 seconds minimum.

You will not need to define this parameter afterwards, its value is saved in flash memory and retrieved each time ESP32 wake up.

You can change it at any time by calling this card again with the desired value.

- The Screen_Repair card"



If you have a display problem, residual images or other, you can call this card. The screen will go through a series of white, black screens... and the ESP will restart.

- The "Display_Mode" card

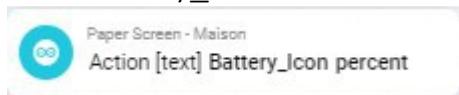


2 possible values, either "horizontal 4" for a display of 4 devices, or "horizontal 6" for a display of 6 devices.

You will not need to define this parameter afterwards, this value is saved in flash memory and retrieved each time ESP32 wake up.

You can change it at any time by calling this card again with the desired value.

- The "Battery_Icon" card



2 possible values:

"percent" displays a battery icon and its percentage.



"dynamic" displays a segmented battery that evolves according to the battery,

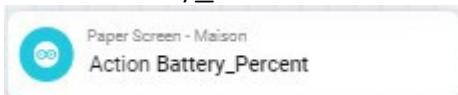


You will not need to define this parameter afterwards, its value is saved in flash memory and retrieved each time ESP32 wake up.

You can change it at any time by calling this card again with the desired value.

3- Action cards

- The "Battery_Percent" card



If you choose not to activate Deep Sleep, you will have to call this card every x times to update the displayed battery percentage.

It is an **optional card**.

- The "Last_Update" card



The value to enter is the "Time" tag.

It allows you to display the time next to the clock icon in order to know when the date of the last values was sent.

It's a **mandatory card**.

- The "Weather_Text" card

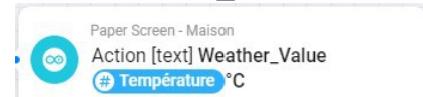


The value to enter is the weather description tag (See weather section in point 5).

It returns the current weather text at the top of the screen.

It's a **mandatory card**.

- The "Weather_Value" card



The value to enter is the temperature tag of your choice.

(I put the one for my outdoor sensor). It returns the temperature at the top, on the right

It's a **mandatory card**.

- The "Device_Type_Zone_x" card



Homey returns "true" or "false" for certain value. With this card you can indicate what type of device you have in order to return a more appropriate value. For the "light" example above, a "true" response will display "On" and false "Off".

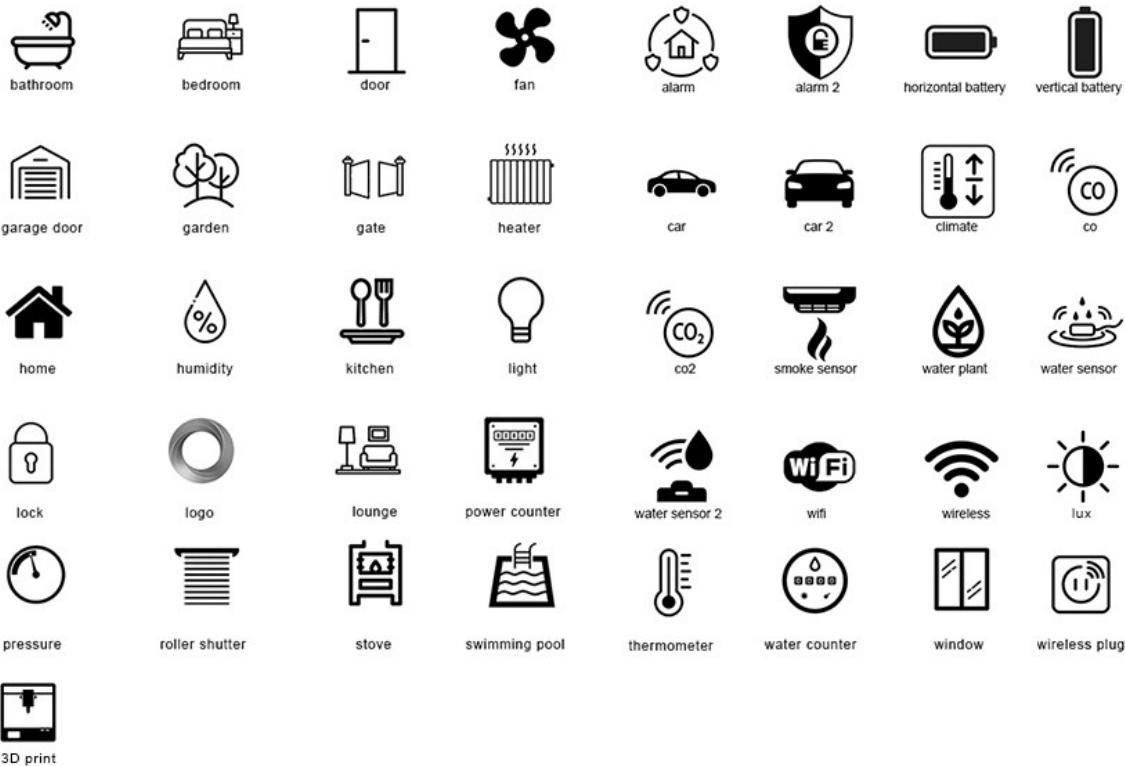
- There are 7 "Device_Type":
- "light": "true" will display "On" and "false" will display "Off"
- "open/close": "true" will display "Open" and "false" will display "Closed"
- "on/off": "true" = "ON" and "false" = "OFF"
- "lock": "true" = "Locked" and "false" = "Unlocked"
- "heater": "true" = "Off" and "false" = "On" (reversed)
- "water sensor": "true" = "Wet" and "false" = "Dry"
- "presence": "true" = "Present" and "false" = "Absent"

It is an **optional card**. It is configurable for each zone.

- The "Icon_Zone_x" card



This card allows you to choose the icon you want from the icon list below. It is a **mandatory card**. It is configurable for each zone.



- The "Name_Zone_x" card



The value to enter is the name of your choice for the device you want to display.
16 characters maximum in display mode 4 devices and 13 characters maximum for the mode of display 6 devices.

It is a **mandatory card**. It is configurable for each zone.

- The "Value_Zone_x" card



The value to enter is also the one of your choice for the device concerned.
Don't forget to put the unit after the tag, as in the example above where it is the brightness where "lux" is added at the end.

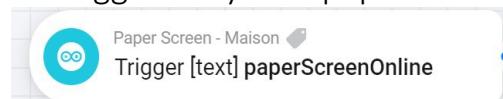
It is a **mandatory card**. It is configurable for each zone.

In total you have:

- 4 optional cards and 15 mandatory cards in 4-device display mode.
- 6 optional cards and 21 mandatory cards in 6-device display mode.

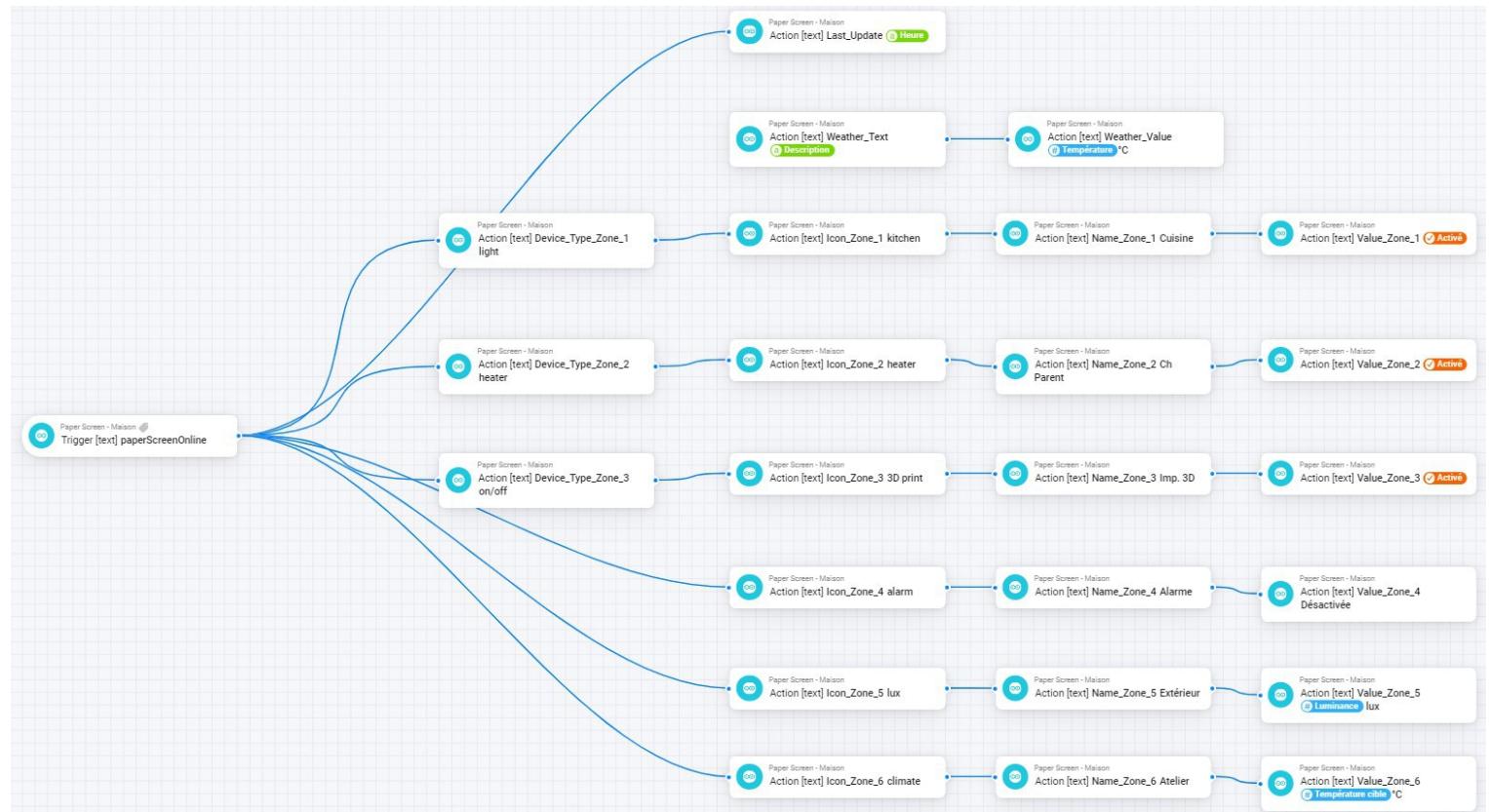
4- Trigger card and flow model

Here is the flow model I use, it's up to you to adapt it to your liking.
It is triggered by the "paperScreenOnline" Trigger card which is defined in the code.



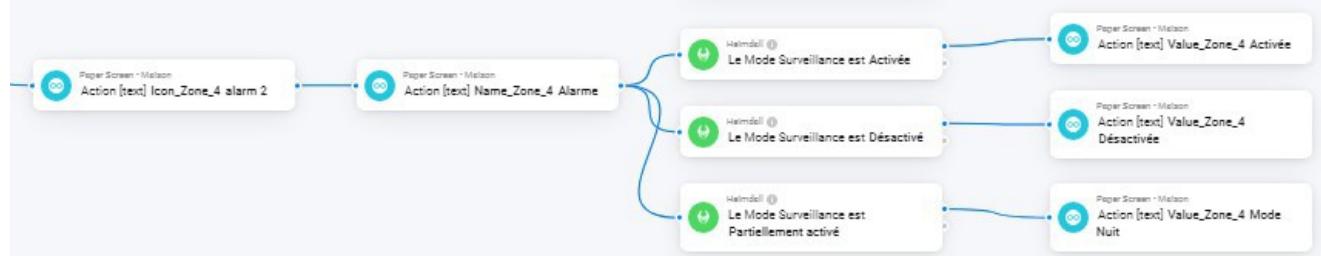
If you haven't changed it, it will have the same name.

When the ESP32 wakes up, it will send it in a loop until, to put it simply, Homey says to it "ok I received the trigger". This will trigger the other cards.



Special case for Heimdall (<https://homey.app/fr-fr/app/com.uc.heimdall/Heimdall/>)

You will need to configure your flow like this because the alarm mode is in is not returned:



5-Weather

I had originally planned to use the one returned by Homey but the translation is really bad! I started with these weather values but quickly turned to Open Weather which I knew and which is available on the store:

<https://homey.app/fr-fr/app/nu.baretta.openweathermap/OpenWeather/>

It is not mandatory for Homey e-paper screen but the weather icon may not always correspond with the description of the weather.

Your turn to judge...

If you want to use OpenWeather, install the app and add a device by following its instructions, you will need an API which you can get for free from their site.

<https://openweathermap.org/>

6- Summary table of all cards

– Parameter Cards:

Action	Possible value	Example
Display_Mode	"horizontal 4" displays 4 devices (default) "horizontal 6" displays 6 devices	 Paper Screen - Maison Action [text] Display_Mode horizontal 6
Select_Language	"FR" for French "EN" for English	 Paper Screen - Maison Action [text] Select_Language FR
Time_To_Sleep	"0" Disables Deep Sleep "60" seconds minimum to activate Deep Sleep	 Paper Screen - Maison Action [text] Time_Deep_Sleep 300
Screen_Repair	If you have a display problem, residual images or other, you Can call this card. The screen will go through a series of white screens, black... and the ESP will restart.	 Paper Screen - Maison Action Screen_Repair
Battery_Icon	"percent" to display an icon with the battery percentage "dynamic" to display a segmented battery that evolves according to the Battery	 Paper Screen - Maison Action [text] Battery_Icon percent
Battery_Percent	If you choose not to activate Deep Sleep, you will have to call this map every x times to update the displayed battery percentage.	 Paper Screen - Maison Action Battery_Percent

- Action Cards

Action	Mandatory	Possible value	Example
Last_Update	YES	tag : Hour	
Weather_Text	YES	tag: Description of your weather	
Weather_Value	YES	tag: Temperature of your choice, ideally a temperature Outdoor + add ">C" after your tag.	
Device_Type_Zone_x (Where x is the zone number)	NO	<p>'open/close' will return "Open" for "true" and "Closed" for "false" 'light' will return "On" or "Off" 'on/off' will return "ON" or "OFF" 'lock' will return "Locked" or "Unlocked" 'water sensor' will return "Dry" or "Wet" 'presence' will return "Present" or "Absent"</p> <p>heater will return 'on' for 'false' and 'off' for 'true' (inverted)</p>	
Icon_Zone_x (Where x is the zone number)	YES	<p>See the list of icons. Respect spaces and lowercase letters!</p> <ul style="list-style-type: none"> - door - garage door - gate - humidity - light - logo - lock - pressure - roller shutter - thermometer - window - wireless plug - bathroom - bedroom - fan - garden - heater - home - kitchen - lounge - power counter - stove - swimming pool - water counter - alarm - alarm 2 - horizontal battery - vertical battery - car - car 2 - climate - co - co2 - smoke sensor - water plant - water sensor - water sensor 2 - wifi - wireless 	
Name_Zone_x (Where x is the zone number)	YES	The name you want. In 4-device mode: Max. 16 characters (including space) In 6-device mode: Max. 13 characters (including space)	
Value_Zone_x (Where x is the zone number)	YES	The tag of the desired value + the unit if necessary.	

7- Error messages

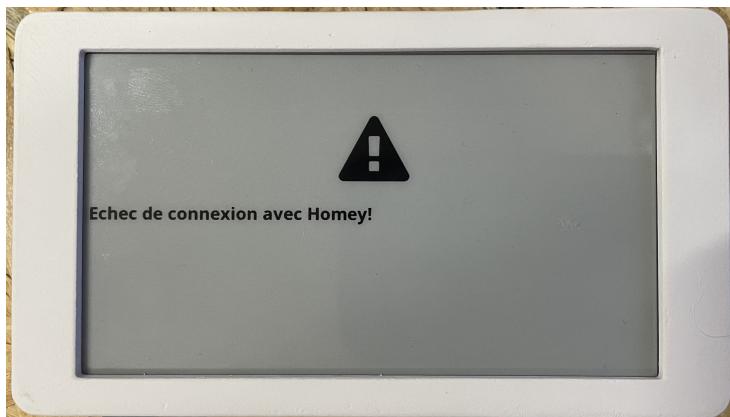
You may see 4 error messages. Each error message is displayed for 1 minute before the ESP32 restarts.

- WiFi error



The ESP32 tries to connect to wifi for 30 seconds (counted from startup). If this message is displayed, the wifi connection failed, showing the SSID and PASSWORD that you entered in the code. Check these 2 parameters, if they are good, check your router.

- Connection error with Homey

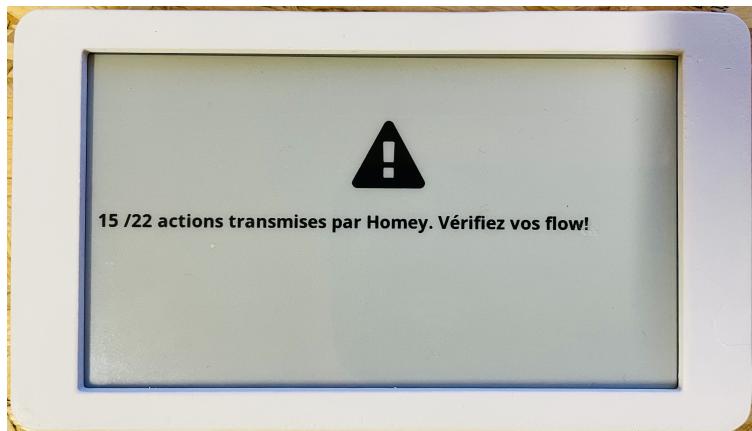


ESP32 tries to connect to Homey for 2 min (counted from boot)

If this appears, the WiFi connection is established but not the one with Homey.

Either your device is not added to Homey or it is not on the same network as Homey, or Homey is offline.

- Flow error



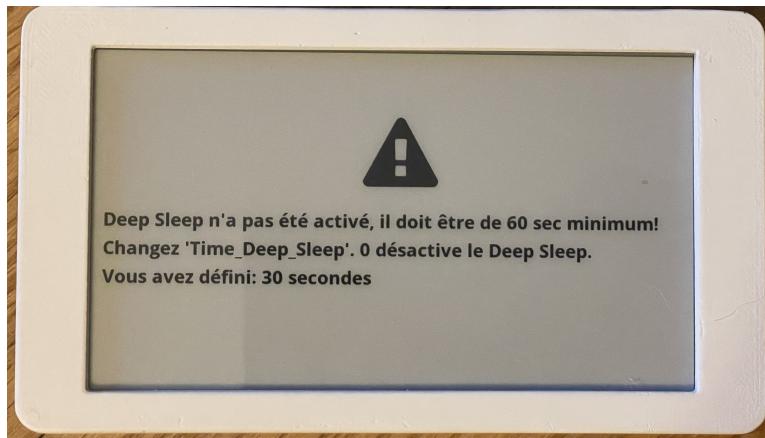
The ESP32 waits 3 minutes (from startup) to receive all mandatory actions. In this example we are in 6 device display mode because the ESP32 expects 22 mandatory actions. (16 in 4 device display mode).

Check that your flow has all the cards.

(The message has changed since v1.1.2, it now shows:

"/21 actions"... and "/15 actions" because an action is now automatically called in the code and no longer by flow).

- Deep Sleep time error



This card appears because you entered a Deep Sleep time that was too short. It must be from 60 seconds minimum. This is to avoid too frequent rebooting of the ESP32 and to send too many requests to Homey, and especially that there is no point in having a Deep Sleep so short. Might as well turn it off.

You can disable it by entering a value of 0 with the Time_To_Sleep card.

8- Possible problems

- The screen just restarts:

You probably have a parameter card that is called in a flow.

The parameter cards are to be called only once or only when you wish to change the value of the parameter in question. Its value is then saved in the flash memory of the ESP32 and it restarts.

So if you still have one in a flow, the ESP32 thinks you sent it one new value and it restarts...

- I put all the actions but I got the error message from flow:

There is a good chance that your flow is not correct. Either you have an error of keystroke, or you call the same function several times.

- Everything was working and I have the error message communicating with Homey: Possible problem on the Homey side, restart the Homeyduino application, it rarely happens but rarely doesn't mean never!

- Chosen icon not showing:

You made a typing error. All icon names are lowercase, without a space at the beginning or at the end. The only possible spaces are between words.

Ex: "water sensor 2" = OK

" water sensor 2 " = KO

- The screen starts updating values then freezes and restarts:

Probably the name or value you are trying to display contains too many characters. 16 for 4 devices mode and 13 for 6 devices mode.

- Weather icon not updating:

I couldn't find a list either on the Homey side or on the Open Weather side of any weather descriptions (at least in French).

This value must be added in the code in the "functions" tab. You can add it and re-upload your code.

If you could send me the value by MP via the forum it will be great if I can add it to the next update.

9- Update

I will post on the forum if an update is available.

If you are updating the code, remember to check in the Tools tab that "Erase All Flash Before Sketch Upload" is on "**Disable**" so as not to lose your saved settings.

Type de carte: "ESP32 Dev Module"	>
Upload Speed: "921600"	>
CPU Frequency: "240MHz (WiFi/BT)"	>
Flash Frequency: "80MHz"	>
Flash Mode: "QIO"	>
Flash Size: "4MB (32Mb)"	>
Partition Scheme: "Huge APP (3MB No OTA/1MB SPIFFS)"	>
Core Debug Level: "Rien"	>
PSRAM: "Enabled"	>
Arduino Runs On: "Core 1"	>
Events Run On: "Core 1"	>
Erase All Flash Before Sketch Upload: "Disabled"	>