

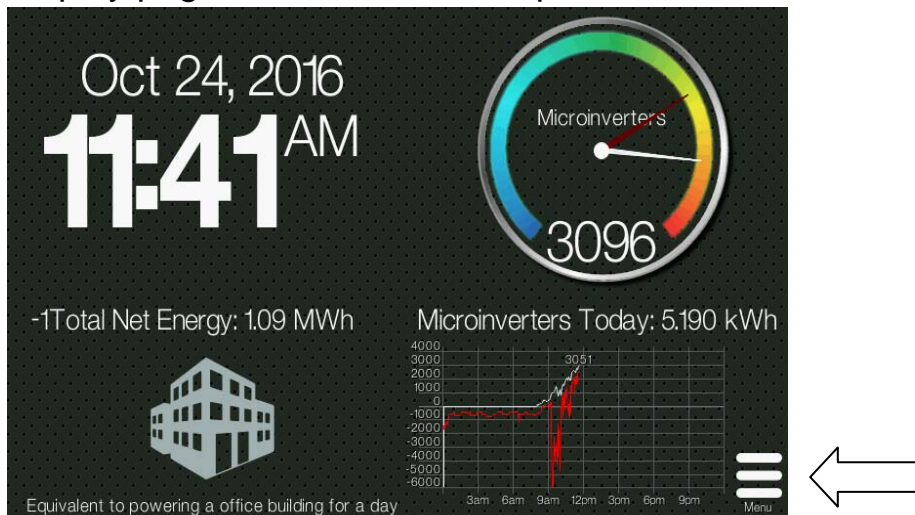
TECHNICAL BULLETIN

AC Coupling to Battery Systems

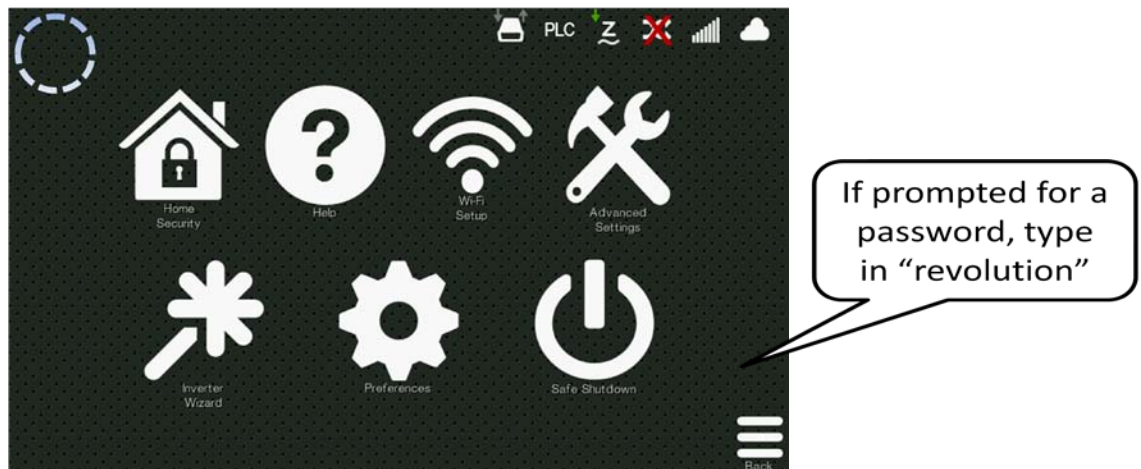
Date: 6/10/2020

In order to support continued production during power outages, supply off-grid systems, or enable TOU load shifting a number of installers will incorporate AC coupled battery systems along with the PV system. Chilicon Power’s CP-100 gateway allows for easy integration of these two production sources with minimal programming. This technical bulletin describes connection to most of the existing battery systems offered. The overall system architecture is shown at the end of this document with the gateway programming process detailed as follows:

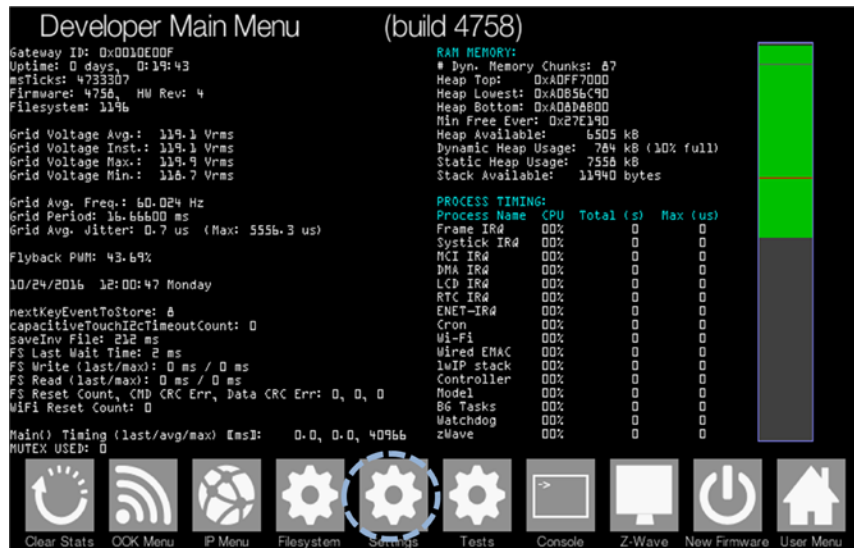
- 1) On the initial display page, select the menu option in the lower corner.



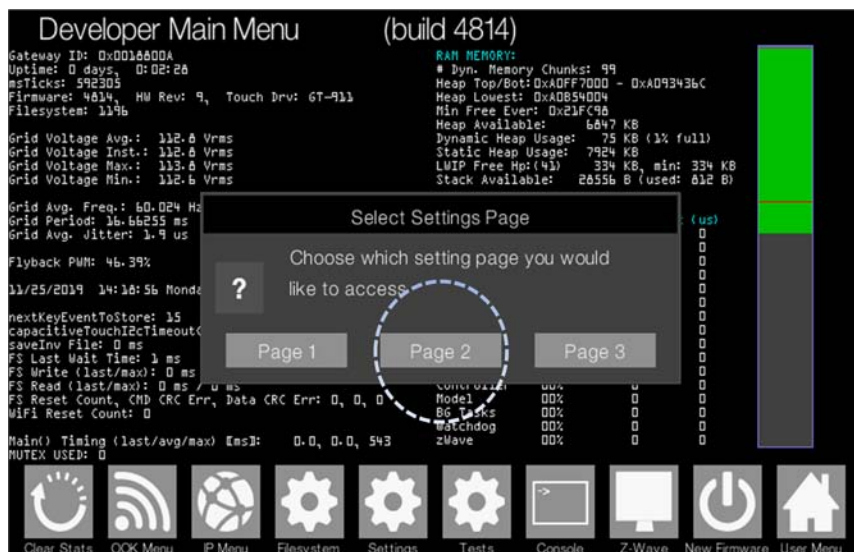
- 2) Next, touch the upper left corner of the screen. Located there is a “hidden” button which activates the “Developer Main Menu” screen.



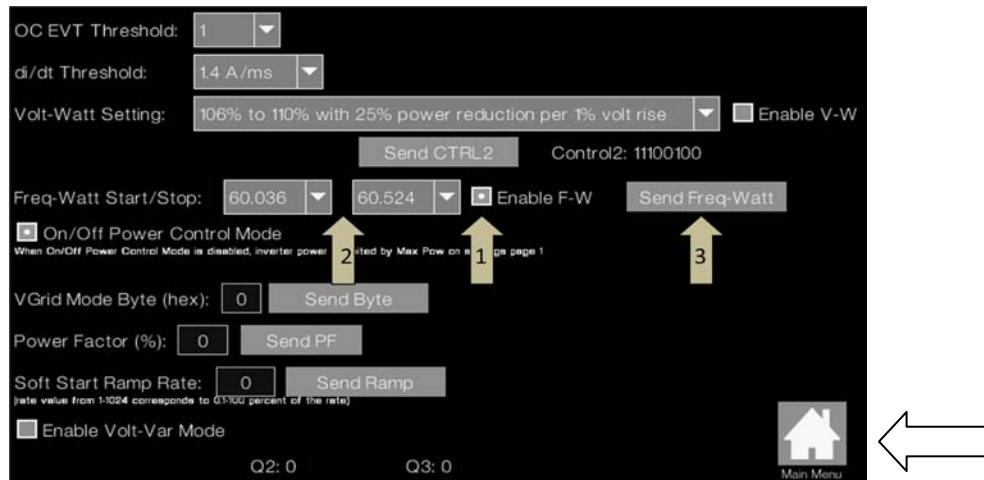
3) On this screen select the settings button (fifth button from the left).



4) Select the option for Page 2.



5) Select the “Enable the F-W” button on the right side of the screen (1). Then select the ramp rate option appropriate for your battery system. The most rapid ramp down and one applicable for most systems initiates at a frequency of 60.036 Hz and completes by 60.524Hz (2). Next, select the “Send Freq-Watt” button (3). The gateway will then load this change to each of the bound microinverters.



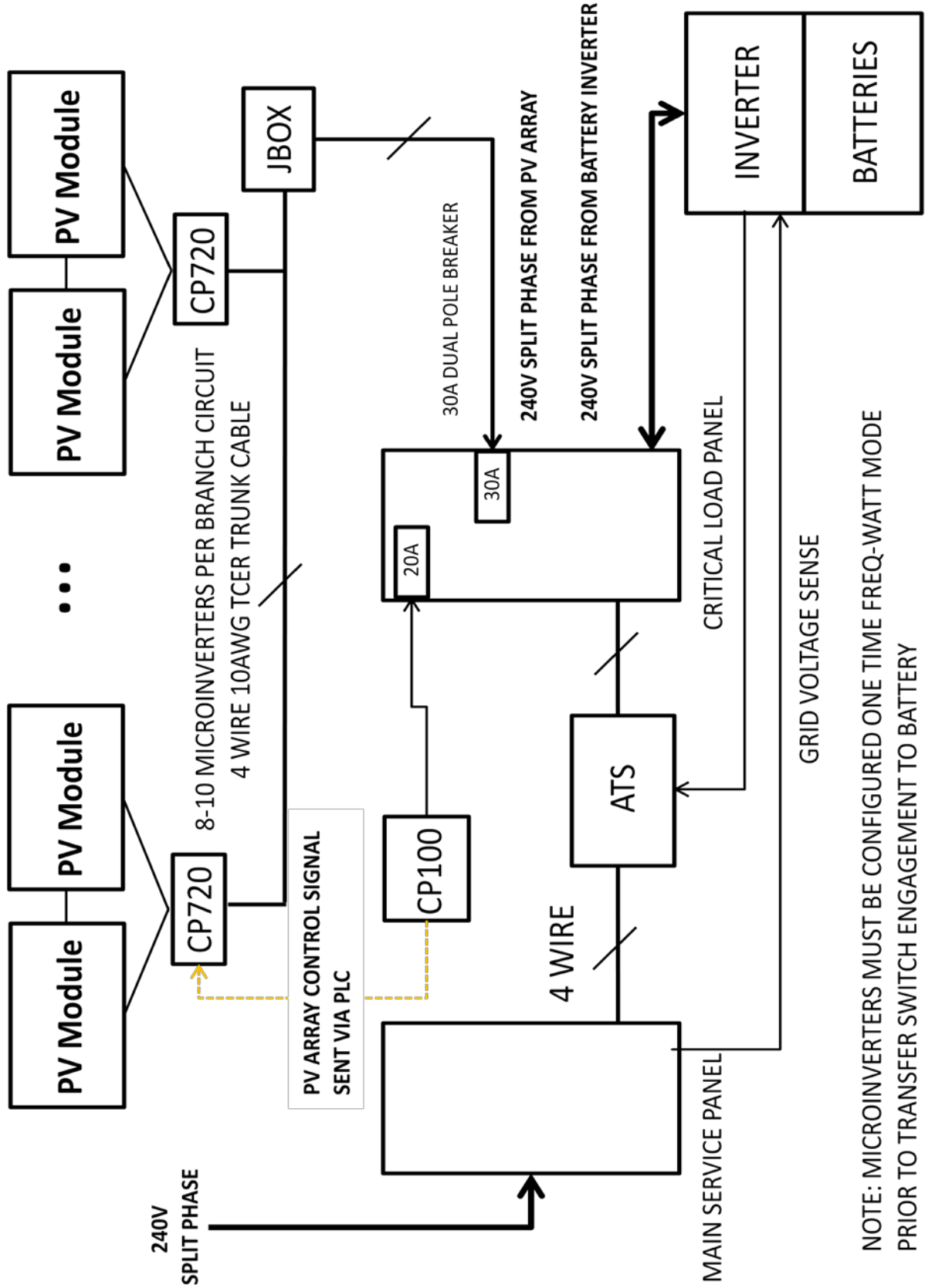
6) Select the “Home” icon to return to the main screen.

While the Chilicon system is compatible with most AC coupled batteries, the integrity of their inverter’s output waveform in off grid mode under varying loads is critical to continuous operation of the PV array. Chilicon Power’s microinverters are grid-following and therefore rely on a stable grid to export power. Typically, the microinverters need to see no more than a 20V change in a 10 msec window for continued operation. For certain inverters, the switching on or off of a large connected load (e.g. an air conditioner) may distort the waveform more than this limit. Under those conditions the micros will momentary shut down and then sequentially resume operation - the first micro restarting in less than 30 seconds and each subsequent micro following in additional 2 minute intervals. For this reason, Chilicon Power highly recommends using the Outback Radian GS8048A/GS4048A series as the inverter for battery coupled systems as it is known to operate within these limits and has been validated by our technical team.

For additional information on AC coupling please refer to the Chilicon Power white paper, “*On and Off Grid Interactive Features AC Coupling*” or contact a Chilicon Power representative.

www.chiliconpower.com/images/pdf/Chilicon_Power_AC_Coupling_White_Paper_Ver_1.1.pdf

BATTERY BACK UP WIRING CONNECTIONS USING CHILICON MICROINVERTERS



NOTE: MICROINVERTERS MUST BE CONFIGURED ONE TIME FREQ-WATT MODE PRIOR TO TRANSFER SWITCH ENGAGEMENT TO BATTERY