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(54) **Title:** DYNAMIC FREQUENCY AND PULSE-WIDTH MODULATION OF DUAL-MODE SWITCHING POWER CONTROLLERS IN PHOTOVOLTAIC ARRAYS

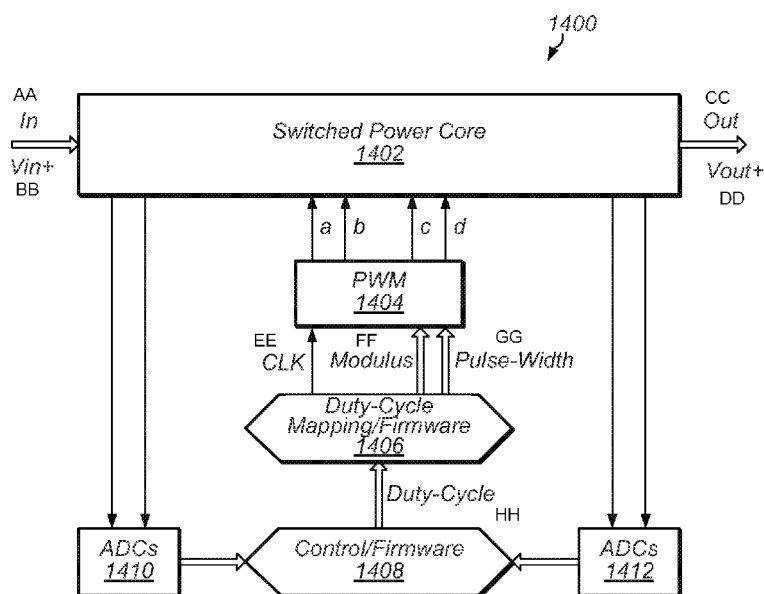


FIG. 14

(57) **Abstract:** A converter unit configured to couple to a photovoltaic panel may include a controller that monitors: an output voltage and output current obtained from the photovoltaic panel by a switching power core within the converter unit, and an output voltage and output current produced by the switching power core. The controller may calculate a desired duty cycle value based on the monitored values, and implement a mapping algorithm that translates the duty cycle value to a pulse width value and a modulus value. The pulse width value and the modulus value may be used to simultaneously respectively modulate the pulse width and pulse period of a pulse width modulated (PWM) signal, while maintaining an appropriate linear final duty-cycle ratio between the pulse width and the pulse period of the PWM signal. The PWM signal may be provided to the switching power core to control the switching of the switching power core.



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C. DOCUMENTS CONSIDERED TO BE RELEVANT		
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X	US 7 466 112 B2 (FLATNESS RANDY G [US] ET AL ZHOU XUNWEI [US] ET AL) 16 December 2008 (2008-12-16) figure 1 column 6, lines 37-54 column 7, lines 4-25	1,5,11, 18
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☒ Further documents are listed in the continuation of Box C. ☒ See patent family annex.		
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