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(54) **SLOTTED COMMUNICATIONS IN VIRTUAL AC POWER SIGNAL TRANSFER WITH VARIABLE SLOT WIDTH**

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(57) **ABSTRACT**

A wireless power transmission system includes a first antenna, a second antenna, a controller, a first power conditioning system, and a second power conditioning system. The controller is configured to determine a first driving signal for driving the first antenna based on a first operating frequency, a virtual AC power frequency, a variable slot length, and slot timing, and determine a second driving signal for driving the second antenna based on a second operating frequency, the slot length, and the slot timing. The first power conditioning system is configured to receive the first driving signal to generate the virtual AC power signals at the first operating frequency, the virtual AC power signals having peak voltages rising and falling based on the virtual AC power frequency. The second power conditioning system is configured to receive the second driving signal to generate the virtual DC power signals at the second operating frequency.