

(19) **United States**
(12) **Patent Application Publication** (10) **Pub. No.: US 2024/0213816 A1**
Lulofs et al. (43) **Pub. Date: Jun. 27, 2024**

(54) **WIRELESS POWER TRANSFER** (52) **U.S. Cl.**
CPC *H02J 50/80* (2016.02); *H02J 50/12* (2016.02); *H04B 5/79* (2024.01)

(71) Applicant: **KONINKLIJKE PHILIPS N.V.**,
EINDHOVEN (NL)

(72) Inventors: **Klaas Jakob Lulofs**, Veldhoven (NL);
Johannes Wilhelmus Draak, Horst (NL); **Pascal Leonard Maria Theodoor Lebens**, Eindhoven (NL)

(21) Appl. No.: **18/288,423**

(22) PCT Filed: **Apr. 14, 2022**

(86) PCT No.: **PCT/EP2022/059975**
§ 371 (c)(1),
(2) Date: **Oct. 26, 2023**

(30) **Foreign Application Priority Data**
Apr. 28, 2021 (EP) 21170845.8

Publication Classification

(51) **Int. Cl.**
H02J 50/80 (2006.01)
H02J 50/12 (2006.01)
H04B 5/79 (2006.01)

(57) **ABSTRACT**

A power transmitter (101) provides power to a power receiver (105) via an inductive power transfer signal. An output circuit (203, 103) generates the power transfer signal in response to a drive signal generated by a driver (201). A communicator (207) transmits messages to the power receiver (105) using amplitude modulation and receives messages from the power receiver (105) using load modulation. A controller (205) controls the driver (201) to generate the power transfer signal to apply a repeating time frame comprising a power transfer interval during which the power transfer signal is arranged to transfer power to the power receiver (105) and a communication time interval during which no power transfer signal is generated. A synchronizer (209) controls the power transmitter to transmit at least part of a first message from the power transmitter (101) to the power receiver (105) during a power transfer time interval and to receive a response message from the power receiver (105) during a communication time interval.

