

(19) United States

(12) Patent Application Publication (10) Pub. No.: US 2022/0368171 A1

Swaans et al.

Nov. 17, 2022

(43) **Pub. Date:**

(52) U.S. Cl. CPC H02J 50/80 (2016.02); H02J 50/10 (2016.02); H04L 27/0008 (2013.01)

(57)ABSTRACT

Disclosed is a method (310) for providing operational feedback during power transfer in a wireless power transfer system. The wireless power transfer system comprises a power transmit device arranged to transfer power over an inductive wireless power transfer interface operating at a transmit frequency to a power receive device. The wireless power transfer system is adapted to transfer information at half duplex using Frequency Shift Keying, FSK, in one direction and Amplitude Shift Keying, ASK, in the other direction. The method comprises transferring (308), at the transmit frequency by the power transmit device, power to the power receive device. During the transferring (308), the method further comprises transmitting (311), at the transmit frequency by one of the power transmit device or the power receive device, a first data packet to the other of the power transmit device or the power receive device using one of two modulation types being FSK or ASK. The method (310) further comprises receiving (311), by the other of the devices, the first data packet and, during the receiving (312) and if a signaling condition is determined (313) to be fulfilled, transmitting (314), at the transmit frequency, by the other of the devices to said one of the devices, operational information using the other of said modulation types. In addition to this, a power receive device, a power transmit device and a test system are introduced.

(54) METHOD AND DEVICES FOR PROVIDING OPERATIONAL FEEDBACK DURING POWER TRANSFER IN A WIRELESS POWER TRANSFER SYSTEM

(71) Applicant: ElectDis AB, Malmo (SE)

(72) Inventors: Laurens Swaans, Malmo (SE); Buon

Kiong Lau, Lund (SE)

(21) Appl. No.: 17/285,505

(22) PCT Filed: Nov. 26, 2020

(86) PCT No.: PCT/EP2020/083503

§ 371 (c)(1),

(2) Date: Apr. 15, 2021

(30)Foreign Application Priority Data

Nov. 29, 2019 (EP) 19212476.6

Publication Classification

(51) **Int. Cl.** H02J 50/80 (2006.01)H02J 50/10 (2006.01)H04L 27/00 (2006.01)



105

110 Power receive device

112 Power receive circuitry

1 | | | | | | | |

122

Power transmit circuitry

120 Power transmit device