Universal Serial Bus Charger For A Mobile Device

ABSTRACT

In accordance with the teachings described herein, systems and methods are provided for charging a rechargeable power source in a mobile device through a USB port. A power converter may be used to receive an input voltage from an external power source and generate a charger output having a regulated voltage. A signal generator may be used to generate a charger configuration signal having pre-selected waveform characteristics that are selected to identify operating characteristics of the charging apparatus. A USB connector may be used for coupling the charger output and charger configuration signal to the USB port on the mobile device. The USB connector may include a voltage bus (Vbus) contact coupled to the charger output, a positive data (D+) contact coupled to the charger configuration signal, and a negative data (D-) contact coupled to the charger configuration signal. The charger configuration signal may be transmitted simultaneously to the D+ and D- contacts, such that the D+ and D- contacts are continuously either both in a logic high state or both in a logic low state. The mobile device may be configured to identify the operating characteristics of the charging apparatus from the waveform characteristics of the charger configuration signal and to apply the charger output to recharge the rechargeable power source.

(Fig. 1)