SIMULCHARGE

OVERVIEW:
SIMULCHARGE TECHNOLOGY

CONNECT | POWER UP | EVOLVE
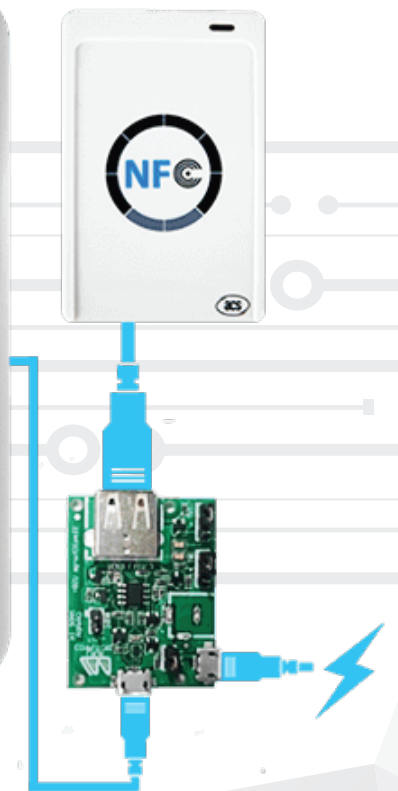
# SIMULCHARGE TECHNOLOGY

Introduction

Simulcharge [noun] /sˈaɪmʊltʃʌrdʒ/

1. USB mode where tablet is placed into OTG/Host Mode but has its battery simultaneously

2. Mode where tablet act as a USB Host and has its battery simultaneously charged;

3. USB mode for portable devices. Currently limited to Samsung Tablets.

Description

Adapters with an implemented Simulcharge mode, provide single OTG port expansion which enables a charging power to be injected into an OTG connection between host and accessory. If the signal is applied appropriately, the portable device can charge from the bus power as if there were a charging port present; any OTG signals over bus power are instead passed to the portable device via the ID signal. Bus power is also provided to the accessory port from the charging port transparently.

Figure 1: Simulcharge Mode Diagram
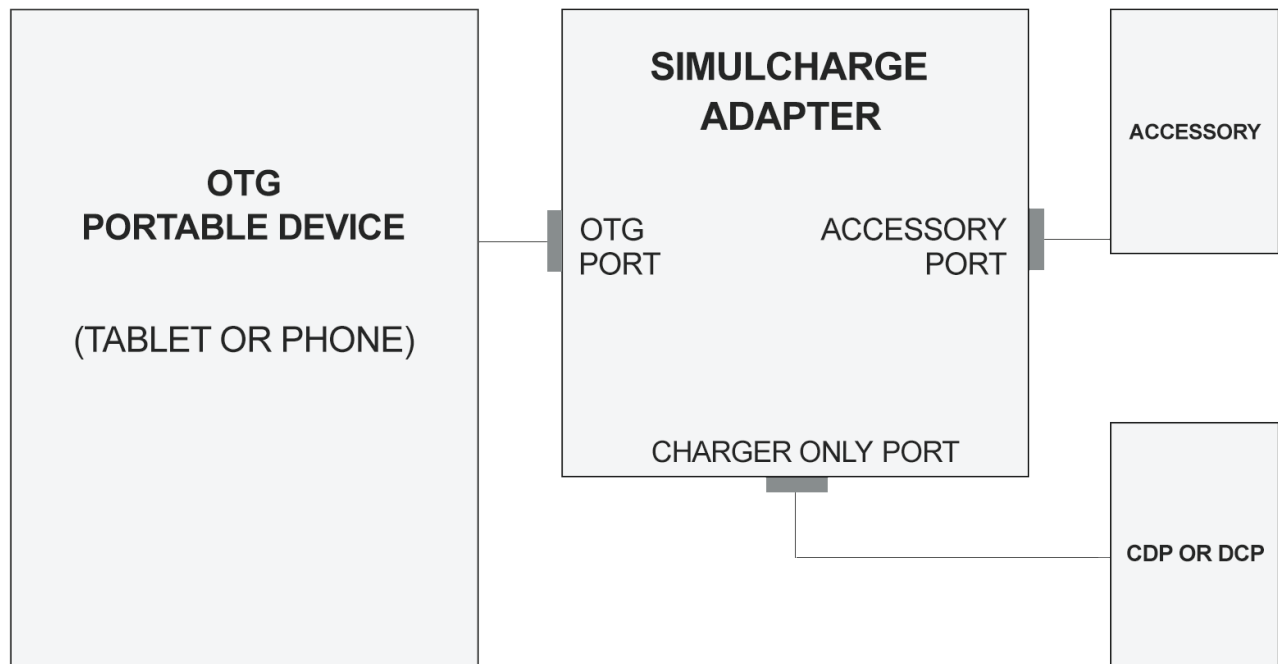
As a comparison, Standard USB OTG Adapters do not allow the tablet to be charged while operating with USB accessories. The USB Host Mode detects that a USB accessory has been plugged in and automatically switches to operate as a USB Host Controller. USB OTG allows devices to switch back and forth between the role of host and client. When operating as an OTG USB host, the tablet as a Host is expected to supply power to the attached USB accessories, which means power is drained from the tablet or phone battery.

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Simulcharge mode informs the tablet or phone to operate as a USB host controller, but not to provide power for USB accessories. With Simulcharge mode active, the tablet is expecting power to be provided to it for battery charging and running the tablet. This allows the tablet to be run simultaneously while interacting with one or more USB accessories. When the tablet operates in Simulcharge mode it restricts the amount of power drawn from the external power source. If there is not enough power coming in, the tablet takes the extra from the battery, hence the battery will be not charging.

Simulcharge Adapter in order to enter Simulcharge mode uses:

- OTG port (establishing host/accessory relation);
- Accessory port (establishing host/accessory relation link);
- Charging port (no data passed; support signal for validation of the charging port detection).

Tablet Kiosk Implementation

The Samsung family of Android phones and tablets are well known that not only support USB Host mode in most of their portable devices, but also offer the widest range of supported USB interfaces (mouse, keyboard, printer, etc.).

USB Host Mode is available in devices running Android 3.1 and above, however the hardware manufacturers (OEMs) must enable/support the feature for the different types of USB accessories. Tablets and phones missing USB Host Mode for plug in USB accessories require rooting of the device.

Simulcharge Adapter in order to enter Simulcharge mode uses:

- Android OS with the USB Host Mode (Supported from Android 3.1 and higher);
- Android Linux Kernel with the USB Host Mode (Supported from Android 3.1 and higher);
- Hardware support for the USB Host mode;
- Micro OTG USB ports for communication link;
- USB OTG Cable;
- Simulcharge Adapter;

LAVA Simulcharge Adapters

LAVA makes a variety of Simulcharge Adapters (STS**) that operate using Simulcharge technology for the tablets applications. These units can also operate in a charge only mode for a recovery from the tablet exhausted battery.