

STCC

USB charge controller



Charge fast, save power

KEY BENEFIT

- Fast charging for smartphones, tablets and portable players (up to 2.5 A instead of standard USB 500 mA)
- Save power – no OS needed: patented attach detect feature allow STCC wake-up and charge when host is shut down, reducing power consumption. Other charger emulators require the host to be in working or sleep mode to charge the device, which consumes more power than when the host is in shutdown mode.
- Easy to integrate: plug-and-play STCC architecture
- Accurate end-of-charge control
- Best-in-class standby mode consumption: 10 times better than available solutions

STCC FEATURES

- Integrated 2.5 A/65 mΩ power switch
- 1.1 GHz low loss USB 2.0 data switch
- Port safety: reverse voltage, reverse current, short-circuit, thermal, undervoltage, controlled soft-start and output circuit discharge protections
- 3 hours safety timer
- Device attach and end-of-charge detectors
- Operating range: 5 V ± 10%
- Support IEC 61000-4-2 ± 8 kV ESD contact discharge on D+, D- and V_{BUS}
- Automotive grade version available

COMPATIBLE WITH A LARGE VARIETY OF PROPRIETARY MODES

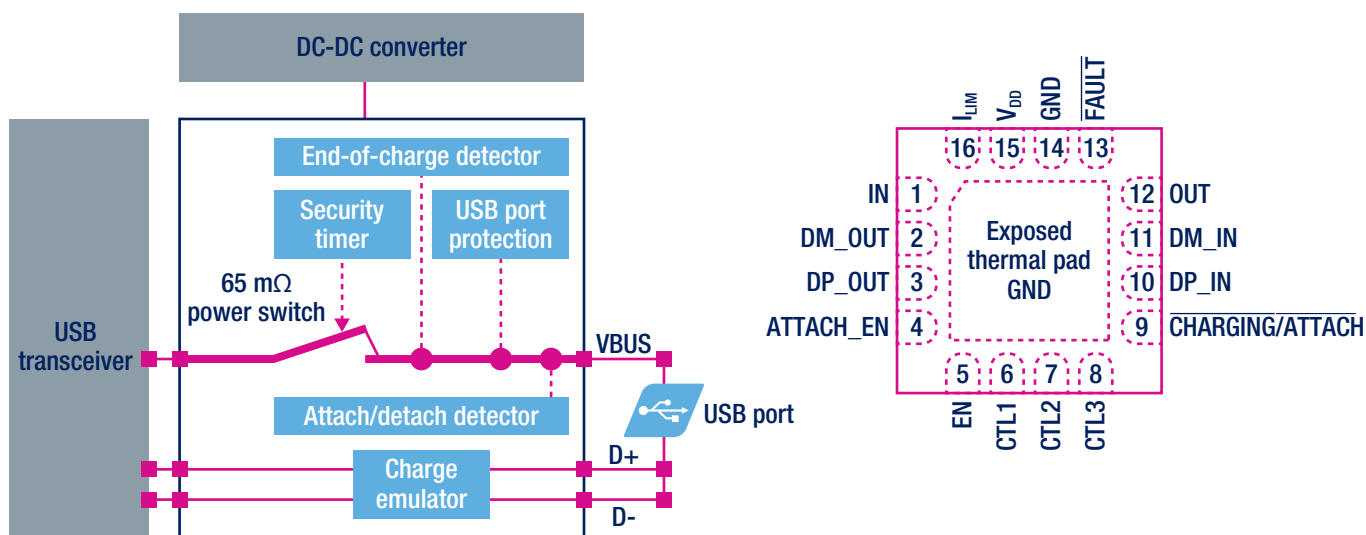
- USB 2.0 and 3.0
- BC 1.2
- YD/T 1591-2009 spec
- Apple 1A/2A
- Blackberry
- HTC
- Lenovo
- LG
- Motorola
- Nokia
- Samsung
- Sony
- Xiaomi

Tested and validated with more than 150 of the latest phones and tablets



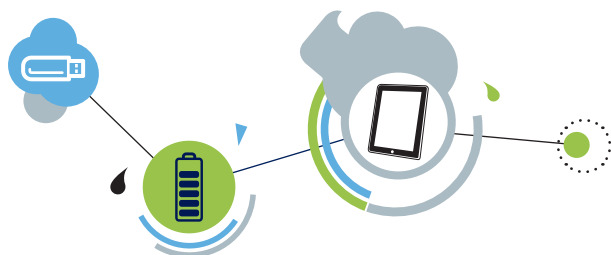
As USB charging has gained popularity, the 500 mA minimum defined by the USB 2.0 specification and 900 mA defined in the USB 3.0 specification have become inadequate for many handsets, tablets and personal media players (PMP) that have a higher rated charging current. Several new standards have been introduced defining protocol handshaking methods that allow host and client devices to acknowledge and draw additional current beyond the 500 mA. The STCC internal charger emulator allows higher current charging profiles between host and client, enabling charge currents up to 2.5 A and increases the charge speed by 5 times. Without it, the charge would follow standard 500 mA USB 2.0 requirements resulting in a much longer charging time for most advanced portable equipment.

Moreover, the STCC's integrated circuit architecture has been customized to allow remote its own wake-up when the host is in off state. This allows the client to be charged without active OS and at the same time provides optimized system efficiency. Finally, the STCC enables the USB port to act as a charging port while still functioning as a data transfer port.



ST'S CHARGE CONTROLLERS

Product number	End-of-charge detector	Security timer	Current capability	Attach detector	Automotive grade	Package
STCC2540IQTR	Yes	No	2.5 A	No	No	QFN16 3 x 3 x 0.8 mm
STCC5021IQTR	Yes	Yes	2.5 A	Yes	No	QFN16 3 x 3 x 0.8 mm



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