

EQCO510

Dual-Channel USB 3.2 Gen 1 Reclocker/Redriver

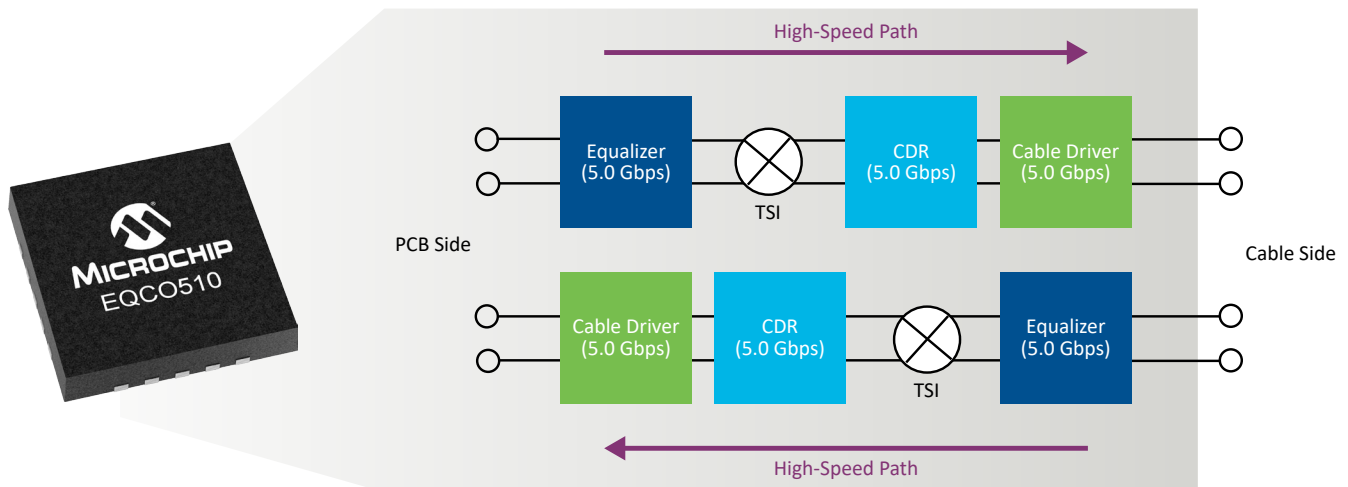
Summary

The EQCO510 is an automotive-qualified, single-chip USB 3.2 reclocking/redriver with EyeOpen and MarginLink technology.

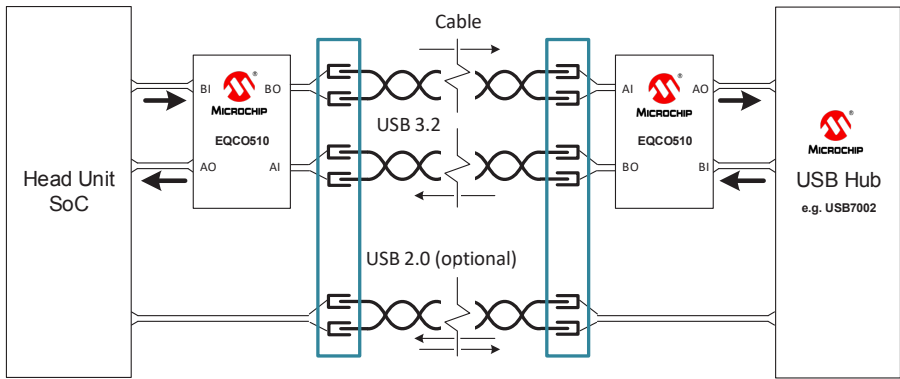
The EQCO510 is a reliable solution for reclocking and driving a USB 3.2 SuperSpeed signal over cables of up to 15m for the lifetime of a car. It also extends the maximum cable length for USB 3.2, which is typically 1m, to 5m to meet the maximum cable length specified for USB 2.0. This device allows you to use low-cost cables to modify an existing USB 2.0 media box design to add support for SuperSpeed USB without changing the physical position of the breakout box.

Key Features

- Support for Shielded Twisted Pair (STP) and coaxial cables
- Clock-Data Recovery (CDR) for jitter compensation to enable even greater distances
- EyeOpen technology for auto adaptive equalization between 0 and 20 dB with 1 dB steps
- MarginLink integrated test capability for robust cable linking
- Integrated Low Output Margin (LOM) feature for real-time bit error detection
- Reference-clock-free operation (no crystal or clock needed)
- Dual-channel, single lane
- 20-pin, 4 mm QFN package with wettable flanks
- AEC-Q100 Grade 2 (−40°C to +105°C)



EQCO510 Block Diagram



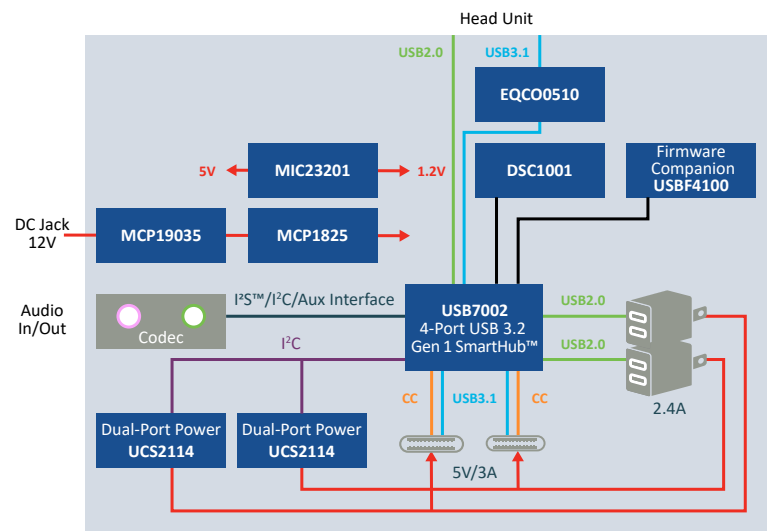
Target Automotive Applications

- Head unit
- Breakout/media box
- Rear seat entertainment
- Telematics and smart antennas
- Wi-Fi® modules
- Real-time video systems

Key Benefits

- Complete solution that allows you to start evaluating all essential functions immediately
- Automotive-qualified components
- Out-of-the-box support for Apple® CarPlay®, Baidu CarLife and Android™ Auto software

Breakout Box Example



Function	Description	Recommended Part Number
Cable Driver	Dual-Channel USB 3.2 Gen 1 Reclocker/Redriver	EQCO510
Buck Regulator	High-Speed Synchronous Buck Controller, 600 kHz	MCP19035
USB Hub	4-Port USB 3.2 Gen 1 SmartHub IC	USB7002
Port Power Switch	USB Dual-Port Power Switch and Current Monitor	UCS2114
Analog LDO	500 mA, Low-Voltage, Low-Quiescent-Current LDO Regulator	MCP1825
Memory	1.8V Serial Quad I/O (SQI) Flash Memory	SST26VF016B
Buck Regulator	2 MHz Pulse-Width Modulation (PWM) 2A Buck Regulator with Hyper Speed Control® Architecture	MIC23201
Oscillator	1.8–3.3V Low-Power Precision CMOS Oscillator	DSC1001

