

**DESCRIPTION**

The SH51-03B Real4K™ Optical Extenders for HDMI™ video allow you to easily transmit 4K content with zero latency and supports all HDR formats, including HDR10+ and Dolby Vision, along with the Audio Return Channel (ARC), over **a single** fiber optic cable to TVs up to **1000m** away without any compression or color space conversion. The included power cable is optionally upgradable to an IR-USB power accessory cable to provide support for the bi-directional IR channel for control as well. The extender includes all hardware and firmware needed to support full-rate 18 Gbps HDMI signals, as well as HDCP content protection. Add your private-label branding and accessories for a product offering that targets your market needs.



**FEATURES AND PERFORMANCE**

- Supports full-rate 18 Gbps HDMI 2.0b signals
- HDMI 1.x and HDMI 2.0x support
- HDCP 1.4 and HDCP 2.2 content protection
- Supports all HDR formats, including HDR10+ & Dolby Vision
- HDMI receptacle supports copper Premium High Speed HDMI cables from 0.5m to 3m
- All communication, including Video Transport, HDCP, CEC, EDID and maintenance operation over **a single** optical fiber
- Uses industry-standard simplex, multimode fiber cable with SC connectors
- Open fiber detection shuts down lasers for safety
- Firmware upgradeable via the USB interface
- Optional IR cable accessory available for bi-directional IR channel **support** via the USB port

**ORDERING INFORMATION**

PART NUMBER	DESCRIPTION
TX6F-SH51-03B-BL	HDMI 2.0 Optical Extender Transmitter with ARC
RX6F-SH51-03B-BL	HDMI 2.0 Optical Extender Receiver with ARC
R4K-IRB	IR-USB Power Breakout Cable Accessory

**ABSOLUTE MAXIMUM RATINGS**

PARAMETER	SYMBOL	MIN	MAX	UNITS
Storage Temperature	Ts	0	85	°C
Relative Humidity, Non-condensing	%	0	85	%
Electrostatic Discharge Contact (IEC)	ESD		8	KV
ESD Air Discharge (IEC)			15	KV

All other maximum ratings and requirements may be found in the relevant HDMI and USB Specifications

### ELECTRICAL SPECIFICATIONS

All other electrical operating conditions and requirements may be found in the relevant HDMI and USB Specifications.

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS
USB Supply Voltage <sup>1</sup>	V <sub>dd</sub>	4.75		5.25	V
Transmitter Supply Current	I <sub>TX</sub>		450	500	mA
Receiver Supply Current	I <sub>RX</sub>		185	250	mA
Operating Temperature Range	T <sub>C</sub>	0		50	°C

**Note:**

1. Supply voltage is via a 5V USB supply and must conform to the requirements of USB

### OPTICAL SPECIFICATIONS

PARAMETER	SYMBOL	MIN	MAX	UNITS
Data Rate Lanes 0 – 3	DR1		6.0	Gb/s

### STATUS LED INDICATIONS

COLOR	LINK STATUS
Off	Extender end has no power
Red	Extender detects an open fiber connection and has disabled the lasers
Purple	Module detects open fiber connection, lasers are disabled and the extender is connected to a USB and is ready to accept a firmware revision
Yellow	Fiber link detected but HDMI initialization failed
White	Video active without HDCP encryption
Green	Video active with HDCP 1.x encryption
Blue	Video active with HDCP 2.x encryption

### COMPLIANCE

- FCC Part 15 Class B for Susceptibility, Radiated and Conducted
- CE for Susceptibility, Radiated and Conducted
- Optical Fiber Communication System Class 1 Eye Safety per IEC 60825-1
- RoHS - Directive 2002/95/EC