

EX-58TVI

Ultra-Reliable Low-Latency Fiber Video/Data Link

User Manual



Transmitter



Receiver

rev: 260326
Made in Taiwan

Introduction

Our drone fiber system is built for missions where RF is unreliable, crowded, or simply not allowed. It delivers a crisp, real-time pilot view through a high-efficiency video pipeline, wrapped in strong encryption, and engineered to stay usable even when the link gets ugly and so you keep situational awareness instead of staring at a frozen screen.

A key advantage is the additional HDMI 2.1 input path over fiber with virtually no added delay, which lets the station side host a powerful AI engine while the vehicle stays lighter and cleaner. Add USB I/O over the same fiber, and the link becomes a remote extension of your station—cameras, sensors, storage, and smart peripherals can all be treated as if they're locally connected. This pushes the system well beyond FPV: high-end drones, boats, UGVs, and long-range robotic platforms all benefit from the same "fiber backbone + station intelligence" architecture.

FEATURES

Transmitter (Drone)

- Superior AV1 proprietary codec to provide the best video quality through efficient bandwidth.
- Input Voltage: 3–8S LiPo
- AES256 encrypted A/V streams to reassure the secure channel communication.
- Sustains a huge ratio of packet losses and video remains recognizable under the terrible networking conditions due to fiber bending, waving or distortion.
- Supports multi-encode & decode capability (proprietary codecs)
- Glass-to-glass latency is as low as 24ms to 80ms dependent upon the input formats: HDMI, USB or TVI.
- Supports SBUS (100 Kbps), CRSF (400Kbps) bypass from station remote control
- Supports TVI camera resolution up to 1080P@60
- Supports HDMI 2.1 input up to 4K120 with DSC support
- Supports USB 3/2 transmission including UVC camera up to 4K video.
- Extends signals over single-mode fiber for distances exceeding up to 20-50 km.

Receiver (Station)

- Supports multi-decode capability (proprietary codecs)
- Input Voltage: 3–8S LiPo or external PSU
- Supports multiple HDMI monitors.
- Supports video scaler to maximize the compatibility to most monitors.
- Supports additional ELRS RX module input
- Supports SBUS (100 Kbps), CRSF (400Kbps)

SPECIFICATIONS

Model Name	EX-58TVI	
Technical		
Role of usage	Transmitter [TX]	Receiver [RX]
HDMI compliance	HDMI 1.3	
Video bandwidth	up to 148.5 MHz	
Video support	up to 1080P@60	
HDMI over fiber	1080P@60 up to 20 km (12.5 miles) [single mode fiber optic cable]	
Equalization	Auto	
Input TMDS signal	1.2 Volts [peak-to-peak]	
Input DDC signal	5 Volts [peak-to-peak, TTL]	
ESD protection	Human body model — ±15kV [air-gap discharge] & ±8kV [contact discharge]	
PCB stack-up	4-layer board [impedance control — differential 100Ω; single 50Ω]	
Input	1x TVI input, 1x USB	1x fiber, 1X USB
Output	1x fiber	2x HDMI
I/O	1x Wafer(1x4P)	2x Wafer(1x4P)
HDMI connector	Type A [19-pin female]	
USB connector	Type A	
Mechanical		
Housing	Metal enclosure	
Model Dimensions [L x W x H]	90x90x16mm	160x90x25mm
Fixedness	Wall-mounting case with screws	
Power consumption	Watt [max]	
Operation temperature	0~40°C [32~104°F]	
Storage temperature	-20~60°C [-4~140°F]	
Relative humidity	20~90% RH [no condensation]	