

EX-36K

12G/6G/3G/HD/SD-SDI over Single mode
SFP-type Fiber Optic Extender Immune
to Pathological

User Manual



rev: 170218
Made in Taiwan



Safety and Notice

The **EX-36K 12G/6G/3G/HD/SD-SDI over Single mode SFP-type Fiber Optic Extender Immune to Pathological** has been tested for conformance to safety regulations and requirements, and has been certified for international use. However, like all electronic equipments, the **EX-36K** should be used with care. Please read and follow the safety instructions to protect yourself from possible injury and to minimize the risk of damage to the unit.

- Follow all instructions and warnings marked on this unit.
- Do not attempt to service this unit yourself, except where explained in this manual.
- Provide proper ventilation and air circulation and do not use near water.
- Keep objects that might damage the device and assure that the placement of this unit is on a stable surface.
- Use only the power adapter and power cords and connection cables designed for this unit.
- Do not use liquid or aerosol cleaners to clean this unit. Always unplug the power to the device before cleaning.



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INTRODUCTION

The **EX-36K** is an ideal and economic solution designed for transmission of multi-rate SDI video, with embedded audio and metadata over a single-mode fiber optic cable. The transmitter module receives one 12G/6G/3G/HD/SDI electrical input, perfectly converts SMPTE 292M, SMPTE 259M, SMPTE 424M, SMPTE 2082 or DVB-ASI electrical SDI signal to single-mode optical SDI signals. The receiver module receives optical signal from input SFP connector, and then perfectly converts it to electrical SDI signal. EX-36K is immune to pathological pattern (SMPTE RP-198) without introducing any flickers, and this feature further guarantees the transmission quality over optical fibers.

Both transmitter and receiver provide equalizing and reclocking at input unit in order to re-construct the signal for consistent quality. The EX-36K is perfect for today's broadcast applications, including video production, video editing, studio to studio and studio to CATV head end. In addition, since transmission of content is inherently secure and immune to outside interference, fiber applications are favored in government, military, and medical environments.

FEATURES

- Enable transmission of digital video signal over optical fiber*
 - up to 10 km (6.25 miles)
- Standard SFP-type fiber optic connector
- Supports following protocols:
 - SMPTE 259M (270Mbps)
 - SMPTE 259M (360Mbps)
 - SMPTE 292M / HDTV (1.485Gbps and 1.485/1.001Gbps)
 - SMPTE 424M / HDTV (2.97Gbps and 2.97/1.001Gbps)
 - SMPTE 2082-1 / HDTV (5.94Gbps and 5.94/1.001Gbps)
 - SMPTE 2082-2 / HDTV (11.88Gbps and 11.88/1.001Gbps)
 - DVB ASI (270Mbps)
- Immune to RP-198 pathological patterns
- Automatic reclocked
- One SDI loop out
- 12G/6G/3G/HD/SDI Input signal detection LED

	EX-36K
SDI Loop-Out	•
Fiber Loop-Out	
DVB Support	•
Immune to RP-198 ¹	•
3G/HD/SD Detection	•
Re-clocking	•
Cable EQ	•
Jitter (<0.2 UI)	•
Bandwidth(2.97Gbps)	•
Fiber Type ²	S
Optics type	SFP
Transmission ³	~10km



¹RP-198 is the Pathological Patterns.

²Fiber type: M = multi-mode; S = single-mode.

³Maximum transmission length is depended upon the optics module.

PACKAGE CONTENTS

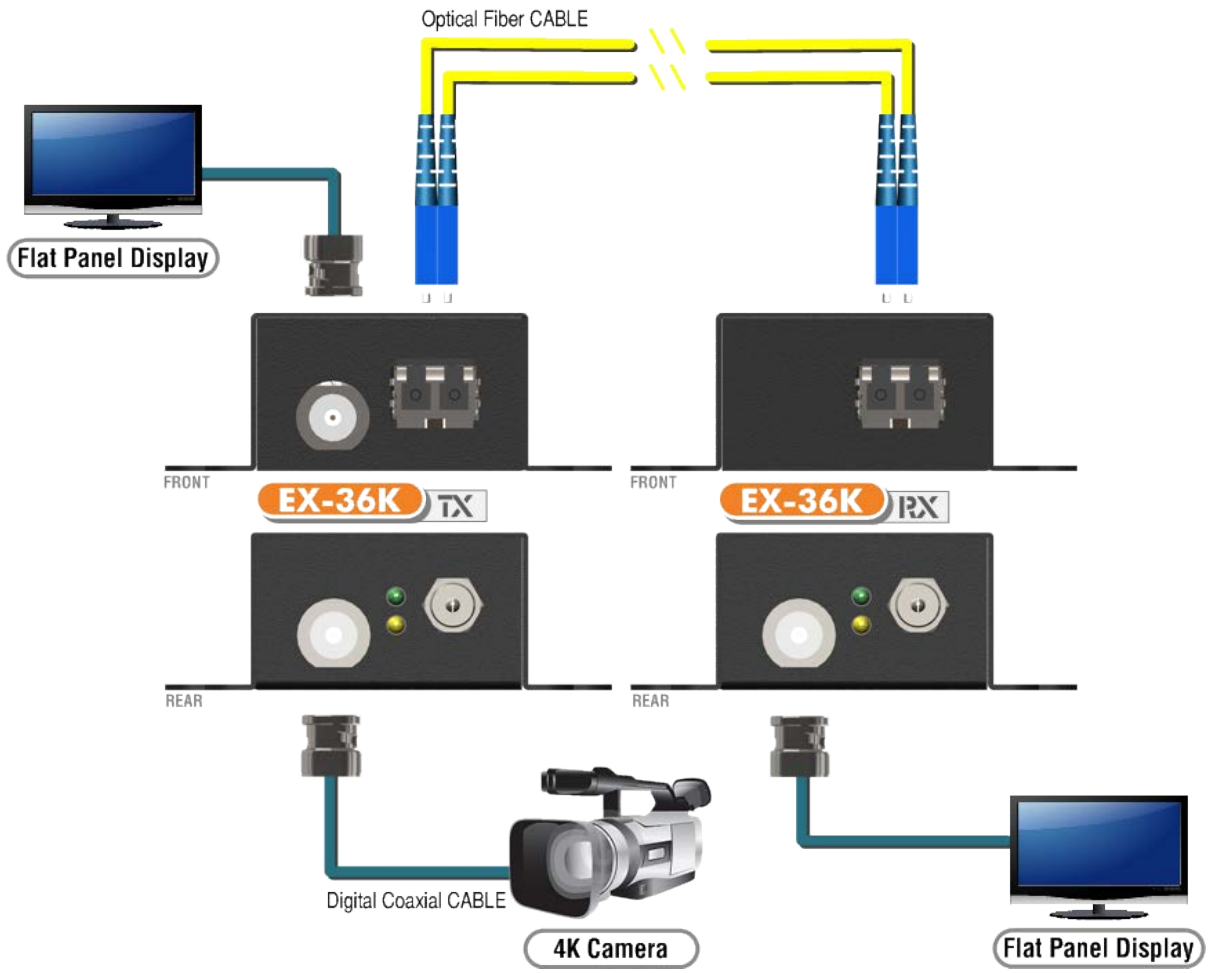
- 1x EX-36K [TX & RX]
- 2x 5V power adapter
- 1x User Manual

SPECIFICATIONS

Model Name		EX-36K	
Technical		EX-36K-TX	EX-36K-RX
Role of usage		Transmitter [TX]	Receiver [RX]
SDI standards		SD-SDI/ HD-SDI/ 3G-SDI/ 6G-SDI/12G-SDI	
Auto HD/SD-SDI detection		Yes	
Supported protocols		SMPTE 259M (270Mbps / 360Mbps), DVB ASI (270Mbps) SMPTE 292M / HDTV (1.485Gbps and 1.485/1.001Gbps) SMPTE 424M / HDTV (2.97Gbps and 2.97/1.001Gbps) SMPTE 2082-1 / HDTV (5.94Gbps and 5.94/1.001Gbps) SMPTE 2082-2 / HDTV (11.88Gbps and 11.88/1.001Gbps)	
Video bandwidth		[11.88Gbps & 11.88/1.001Gbps]	
Data rates		270 / 1483 / 1485 / 2967 / 2970 / 5940 / 11880Mbps	
Video support		[HD] 720p50/59.94/60, 1035i50/59.94/60, 1080i50/59.94/60, 1080p24/30,1080p60,1080p59.94, 4K2Kp30, 4K2Kp60 [SD] NTSC@59.94Hz, PAL@50Hz	
SDI signal type		SMPTE 2082-2, SMPTE 2082-1, SMPTE-424M, SMPTE-292M, SMPTE-259M, DVB-ASI	
Output impedance		75Ω	
Auto reclocker mode		Automatic detection: 270Mbps / 1.483Gbps / 1.485Gbps / 2.97Gbps / 2.967Gbps / 5.94Gbps / 5.934Gbps / 11880Gbps / 11868Gbps Automatic bypass: 177Mbps / 360Mbps / 540Mbps	
Fiber Transmission		10km (6.25mi)	
Loop-out		1 reclocking SDI loop-out	N/A
Audio support		Yes	
RP-198 pathological patterns		Immune	
PCB Stack-up		4-layer board [impedance control — differential 100Ω; single 50Ω]	
Input		1x BNC [SDI]	1x Optical SFP [SDI]
Output		1x Optical SFP [SDI] 1x BNC [SDI] (optional loop-out)	1x BNC [SDI]
BNC connector		75Ω inter-locked socket	
Optical fiber connector		SFP-type	
Mechanical			
Housing		Metal case	
Dimensions [L x W x H]	Model	74 x 74 x 26mm [2.9" x 2.9" x 1.0"]	
	Package	140 x 200 x 75mm [5.5" x 7.9" x 3"]	
	Carton	420 x 400 x 300mm [1'5" x 1'4" x 11.8"]	
Weight	Model	211g [7.4 oz]	
	Package	440g [15.4 oz]	
Fixedness		Inter-locked power supply	
Power supply		5V 2A DC	
Power consumption		3 Watts [max]	
Operation temperature		0~40°C [32~104°F]	
Storage temperature		-20~60°C [-4~140°F]	
Relative humidity		20~90% RH [no condensation]	

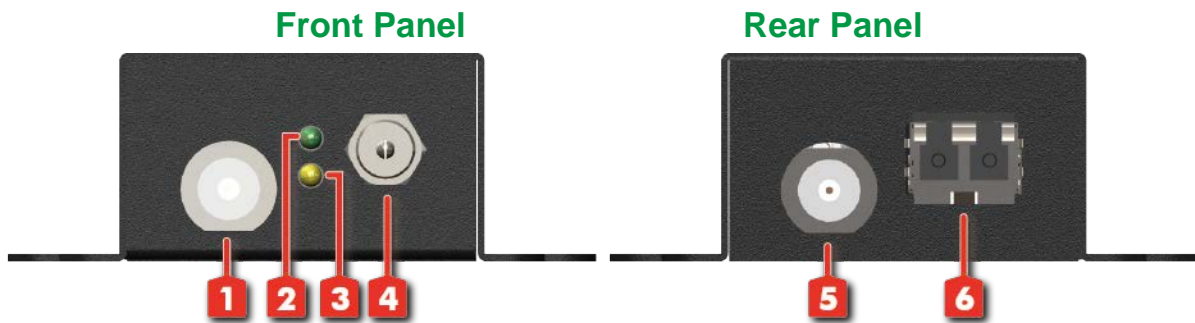
CONNECTION DIAGRAM

- HDMI
- COAXIAL
- FIBER



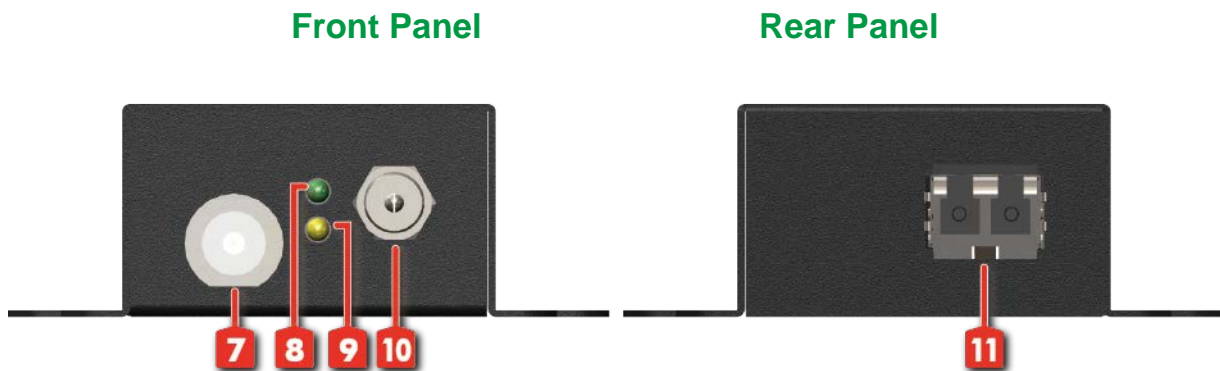
PANEL DESCRIPTION

Transmitting unit ► EX-36K-TX



1. 12G/6G/3G/HD/SD-SDI input
2. Power indicator
3. Link indicator
4. 5V DC power jack
5. 12G/6G/3G/HD/SD-SDI loopout
6. Optical output

Receiving unit ► EX-36K-RX



7. 12G/6G/3G/HD/SD-SDI output
8. Power indicator
9. Link indicator
10. 5V DC power jack
11. Optical input

LIMITED WARRANTY

The SELLER warrants the **EX-36K 12G/6G/3G/HD/SD-SDI over Single mode SFP-type Fiber Optic Extender Immune to Pathological** to be free from defects in the material and workmanship for 1 year from the date of purchase from the SELLER or an authorized dealer. Should this product fail to be in good working order within 1 year warranty period, The SELLER, at its option, repair or replace the unit, provided that the unit has not been subjected to accident, disaster, abuse or any unauthorized modifications including static discharge and power surges.

Unit that fails under conditions other than those covered will be repaired at the current price of parts and labor in effect at the time of repair. Such repairs are warranted for 90 days from the day of reshipment to the BUYER. If the unit is delivered by mail, customers agree to insure the unit or assume the risk of loss or damage in transit. Under no circumstances will a unit be accepted without a return authorization number.

The warranty is in lieu of all other warranties expressed or implied, including without limitations, any other implied warranty or fitness or merchantability for any particular purpose, all of which are expressly disclaimed.

Proof of sale may be required in order to claim warranty. Customers outside Taiwan are responsible for shipping charges to and from the SELLER. Cables are limited to a 30 day warranty and cable must be free from any markings, scratches, and neatly coiled.

The content of this manual has been carefully checked and is believed to be accurate. However, The SELLER assumes no responsibility for any inaccuracies that may be contained in this manual. The SELLER will NOT be liable for direct, indirect, incidental, special, or consequential damages resulting from any defect or omission in this manual, even if advised of the possibility of such damages. **Also, the technical information contained herein regarding the EX-36K features and specifications is subject to change without further notice.**

