



**Cove
Communications**

User Guide

SILVERLINE VTx

Miniature Fibre Optic Video Transmitter

Serial Number

Date Commissioned

Commissioned By

Cove Communications
Contacts.....

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1. INTRODUCTION

The **SILVERLINE** VTX Miniature Fibre Optic Transmitter has been designed for use with composite colour and monochrome video signals that fall within the frequency bandwidth of 15MHz. As all current terrestrial broadcasting standards such as PAL, NTSC and SECAM require only 5.5MHz of bandwidth they are eminently suitable for transmission over fibre with this product. This product enables high quality video distribution over fibre without the need for equalisation for distances up to 4km.

Because of the wide bandwidth of the Cove Communications **SILVERLINE** Fibre Optic Video Transmitter and its video encoding systems independence, users can be confident when using this product that they are relatively future proof against the introduction of new composite video standards and compatibility problems. However the extended bandwidth of the Cove Communications **SILVERLINE** Fibre Optic Video Transmitter currently allows its use with high quality video sources such as some high quality, high resolution cameras and will give far superior results compared to the use of coaxial cable even for relatively short distances. The extended bandwidth also ensures that the new 16 x 9 aspect ratio wide screen video format, which has a bandwidth of 7.5 MHz may be used with this product.

This product is intended for use with multimode fibre and is available to order fitted with either the ST or SMA fibre optic connectors. The Cove Communications **SILVERLINE** VTx Fibre Optic Video Transmitter is intended for use with the range of Cove Communications Fibre Optic Video Receivers. This range includes the **SILVERLINE** VRx miniature receiver and the **STARLINE** 19 inch rack mountable range of receivers, VRX 1 Channel, VRX 2 Channel, and the VRX 3 Channel version.

The unit is constructed in a robust light weight housing and is fitted with a BNC video connector intended for direct connection to video sources such as, cameras, video tape recorders etc.

Power is connected to the unit via a miniature circular connector requiring a nominal +12v D.C. supply.

To help during installation LED's are provided to indicate that the D.C. power is connected, that video is present.

This equipment has been designed to meet the European EMC requirements.

2. FEATURES

- Compact miniature metal case construction
- Conforms fully to all world composite broadcasting standards (PAL, NTSC, SECAM)
- Video composite encoding system independent
- Up to 4km video distribution with multimode fibre optic cable
- Suitable for colour and monochrome video systems
- ST or SMA Optical connectors to order
- Easy Installation
- Connects directly to the video source
- Low cost
- Wide Bandwidth
- Low Distortions
- Transparent operation
- Video present LED
- Power connection indication LED
- Internal DC Supply regulation
- Optional mains power cube DC supply

- Separate DC supply connector for host powering
- High efficiency optical emitter
- Professional construction
- Optical interface gives immunity to all electromagnetic interference
- Total electrical isolation between sites with no earthing problems
- Wide operating temperature range

3. SPECIFICATION

Video input Level:	1V p-p +3dB max (Composite)
Video Input (sync to video relationship):	0.3V syncs to 0.7V video
Video input Impedance:	75 Ohms
Bandwidth:	Greater than 15MHz
Operating Distance (fibre) d.c to 15 MHz	4km (with Cove Communications optical video receiver)
LED Indications:	Power and video present
Light Source:	LED
Light Source Wave Length:	850nm
Optical output power:	Greater than 30 μ W (62.5 / 125 fibre)
Optical Connectors:	ST
Construction:	Metal Case
Overall Size:	71 x 63 x 30mm
DC Power Requirements:	11-15V at 70mA
Overall weight:	0.15kg
Operating Temperature:	-5 $^{\circ}$ C to +50 $^{\circ}$ C
Storage Temperature:	-20 $^{\circ}$ C to +70 $^{\circ}$ C
Humidity:	90% non-condensing

Cove Communications reserves the right to change the specification without notice

4. ANALOGUE VIDEO DISTRIBUTION SYSTEMS

Apart from the normal terrestrial video broadcast systems; PAL, NTSC and SECAM the Cove Communications **SILVERLINE** VTX Fibre Optic Video Transmitter may be used with other distribution systems, provided that the signal has a composite format, i.e. it has a mixed sync part to its waveform.

4.1 Levels and Impedance

The input impedance of the Cove Communications **SILVERLINE** VTX Fibre Optic video transmitter is 75 Ohms. Should the application require a video looping facility, the transmitter can be supplied with a high input impedance suitable for looping.

4.2 Bandwidths

The **SILVERLINE** VTX has a bandwidth that extends beyond 15MHz and over the broadcast specified frequency response for PAL, NTSC and SECAM, when used in conjunction with the Cove Communications Fibre Optic Video Receiver the frequency response will be within ± 1 dB from D.C. to 5.5MHz.

5. OPERATION

5.1 General

The **SILVERLINE** VTX is intended for use with the range of Fibre Optic Video receivers. This range includes the **SILVERLINE** VRX miniature receiver and the **STARLINE** 19 inch rack mountable range of receivers, VRX 1 Channel, VRX 2 Channel, and the VRX 3 Channel version.

The video transmitter is small enough to be connected directly to the video source and may either draw its power from the host equipment or from an external D.C. supply. The video signal is processed in the analogue domain and converts the analogue video input signal into a linearly modulated infra-red light source for transmission down the fibre optic cable.

5.2 AGC (Automatic Gain Control)

The AGC (Automatic Gain Control) featured in the range of Cove Communications Fibre Optic Video Receivers uses the mixed sync portion of the video signal to set the through gain. If the mixed sync signal presented to the transmitter is 0.3V and the peak white level is 0.7V then the output signal from the receiver will be the same. However, if the input video mixed sync amplitude is low compared to the peak white level, at the transmitter the video output level will be high from the receiver because the mixed sync level will be amplified up to the standard 0.3V level. Conversely if the input mixed sync level is too high compared to the peak white at the transmitter the output video level at the receiver will be too low because the mixed syncs will be attenuated back to the correct 0.3V level. If the amplitude relationship between the mixed syncs and the peak white video is correct at the transmitter but happens to be overall either too high or too low the AGC in the receiver will correct for this and output a perfectly correct signal.

8. FAULT DIAGNOSIS

The Cove Communications Fibre Optic Video Transmitters can only be fully tested in conjunction with a known working Cove Communications Fibre Optic Video Receiver. However the LED indicators will give a guide as to its operation

FAULT

POSSIBLE CAUSE

Green LED 'OFF'.

D.C. power not present at the circular D.C. connector.
Incorrect wiring of the circular D.C. connector (reverse polarity connection may damage the unit).
D.C. voltage is too low. This should not be below +11v.

Green LED 'ON' but
Yellow LED is 'OFF'

No video signal connected to the unit.
Video signal level is non standard or too low in level.

Green and Yellow LED's
are 'ON' but there is no
video output at the receiver

Fibre optic cable loss is too high.
Dirt in fibre optic connectors or the level is low due to
a faulty optic transmitter diode (return to Cove
Communications for service)

Green and Yellow LED's
are 'ON' but the video output
level at the receiver is low in
amplitude.

Mixed sync level at the transmitter is too high in
amplitude compared to the peak white level.
(Ensure your video source signal is compatible)

Green and Yellow LED's
are 'ON' but the video output
level at the receiver is high in
amplitude.

Mixed sync level at the transmitter is too low in
amplitude compared to the peak white level.

-END-

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