## Trouble Shooting

1. To see if the signals are sent well from the Sender unit to the Viewer Unit, you can check the LED situation of the Sender unit.
2. If you cannot see the picture in the Viewer side (e.g. a monitor), check if the camera is working well.
3. If you cannot hear the sound in the Viewer side (e.g. a monitor or a speaker), check if the microphone is working well.
4. To check whether or not the video signal transmission of the system is working good, you can plug the video cord, which connects to a camera the one end, into the Audio In side of the Sender unit. If the system begins to buzz, it means that video signal transmission is working. If it doesn't buzz, please go to the retailer for replacement.
5. If you find the striped noise on the picture after completing installation of the system, please check the density of Braid Shield cord of the coaxial cable you use for the system. If the density is below 60%, the system is easily interfered by radio.

## Connector Adaptors

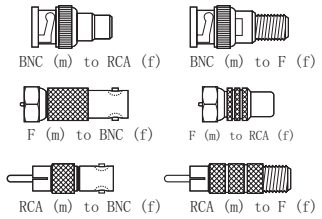


Fig.6 Various Connector Adaptors

1. The description about our products is the base of connection Layout L04 type: Video: BNC socket; Audio: BNC socket; Link: BNC socket
2. If you find the connections of this product you just purchased are not what you expect, you can apply connector adaptors as illustrated for various connections.
3. m: male, f: female
4. BNC : Bayonet nut Connector, used for industrial equipment
   RCA: Use for AV products
   F: Type "F" , use for CATV products

## Distributor/Retailer



Foresight CCTV, Inc.
Email: info@foresight-cctv.com

Made in Taiwan



VDS VIDEO MODEM SYSTEM
The Best Solution on Coaxial Cable

# VDS 2100/2200 Installation Manual

## Contents



www.foresight-cctv.com

## Introduction

VDS2100/2200 is a transmission system for transmitting video, audio signals and DC power through one coaxial cable. The Sender unit and the Viewer unit can send signals and 12VDC camera power for 500 meters. If a camera is powered at the remote end, without DC power supplying from the Viewer, the transmission distance of the system can be over 500 meters.

## Features

- & One cable transmits all signals and DC power.
- & Universal Voltage Input (85V~265V).
- & Various coaxial connectors available, such as BNC(m), RCA(m) and F(m).
- & Up to 500 meters range with DC power.
- & Can be over 500 meters range with separate power source for a camera and the system.
- & Real time analog video signals for color and B/W (50fps/60fps), better than 480TVL resolution.
- & Built-in electrical transient voltage suppressor(TVS) protection on LINK IN and LINK OUT ends.
- & Inter-carrier technology eliminates signal interference.

## Packing Checklist

Carefully unpack the VDS2100/2200 and check that the following items are included:

- & VDS2100 Sender-V (Remote Unit)
- & VDS2200 Viewer (Local Unit)
- & 4 Screws
- & DC to DC Power cord
- & PD102 or PD104 Power Adaptor(1) (AC to DC ) and AC Power Cord
- & Installation Manual

Contact your dealer immediately if any of the above items appears damaged or the unit does not work.

(1) PD102 or PD104 is the standard DC power supply of the system, which accepts universal AC current standard from 85VAC to 265 VAC.

## The Connection Layout of VDS2100/2200

Table 1. Connection Layout of VDS2100 Sender-V and VDS2200 Viewer

| Layout | Link Out/In | Audio In/Out | Video In/Out |
|---|---|---|---|
| 2100/2200 -L01 | F Plug | BNC Plug | BNC Plug |
| 2100/2200 -L02 | F Plug | RCA Plug | BNC Plug |
| 2100/2200 -L03 | F Plug | RCA Plug | RCA Plug |
| 2100/2200 -L04 | BNC Plug | BNC Plug | BNC Plug |
| 2100/2200 -L05 | BNC Plug | RCA Plug | BNC Plug |
| 2100/2200 -L06 | BNC Plug | RCA Plug | RCA Plug |

The following description about our products is the base of connection Layout L04

## Certificate

This equipment has been tested and found to comply with the Part 15 rules of the US FCC Regulation, and gets CE approved.

## Patents

Patents covering the design, operation, techniques, and unique features of the Single-cable transmission device of a surveillance system include: U.S. Patent #US 6,369,699 B1 April 9, 2002; Taiwan Patent #201389 September 3 2004; Europe Patent #EP 1134909 A1 September 19, 2001. Other Patents are

## Limited Warranty

Foresight grants a warranty for this product for 18 months. Please offer the purchase date and the serial Number of Bar-Code on the back of the product to your distributor or retailer as proof for this purpose. During the warranty period, in case of defected in material or workmanship, the defective unit will be repaired or replaced according to the assessment of Foresight. However, this warranty does not cover damages caused by improper use or from unauthorized modifications by third parties.





## Reference data for coaxial cable used

Take the example of RG-6/U, the required DC power Voltage for different DC current loading and transmission distance shown as bellow:

**Table 2. Minimum Supply Voltage vs Transmission Distance**

| DC Current Loading in Remote site (+12VDC OUT) | Transmission Distance | | | |
|---|---|---|---|---|
| | 150ft/50M | 300ft/100M | 600ft/200M | 1500ft/500M |
| 200mA | <18V | 19V | 21V | 27V |
| 300mA | 18V | 19V | 22V | - |
| 500mA | 18V | 21V | 26V | - |

Maximum Transmission Distance (FT/M) for different coaxial cable when DC power input is +27V without DC current loading (the camera consumes power from other source):

**Table 3. Transmission Distance vs Coaxial Cable**

| Coaxial Cable | W/O DC Current Loading |
|---|---|
| RG-6/U | 1500ft/500M |
| (1)RG-59/U | 1200ft/400M |
| 5C-2V | 1500ft/500M |
| 3C-2V | 800ft/270M |

Maximum Transmission Distance (FT/M) for different coaxial cable when DC power input is +27V without DC current loading (Camera consume power from remote site):

**Table 4. Maximum Distance vs DC Current Loading**

| Coaxial cable | DC Current Loading in Remote side | | |
|---|---|---|---|
| | 200mA | 300mA | 500mA |
| RG-6/U | (2)1500ft/500M | (2)1200ft/400M | 750ft/250M |
| (1)RG-59/U | 900ft/300M | 600ft/300M | 400ft/130M |
| 5C-2V | (2)1500ft/500M | (2)1500ft/500M | (2)1500ft/500M |
| 3C-2V | 800ft/270M | 800ft/270M | 720ft/240M |

(1) RG-59/U isn't recommended for use because its inner-conductor is copper-clad steel wire, resulting in a large DC Resistance.

(2) Transmission distance of the system with DC Current loading is not longer than that of the system without DC Current loading.

## Connecting the Sender unit

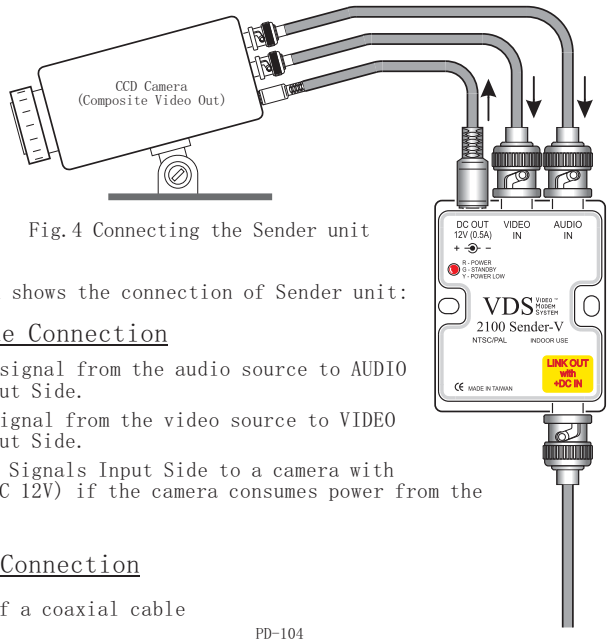


Fig.4 Connecting the Sender unit

This illustration shows the connection of Sender unit:

### Signals Input Side Connection

Connect an audio signal from the audio source to AUDIO IN of Signals Input Side.

Connect a video signal from the video source to VIDEO IN of Signals Input Side.

Connect DC OUT of Signals Input Side to a camera with a DC power cord(DC 12V) if the camera consumes power from the Viewer unit.

### Link Output Side Connection

Connect one end of a coaxial cable to Link Out Side.

## Connecting the Viewer unit

The following illustration shows the connection of the Viewer unit:

### Link In Side Connection

Connect LINK IN side of the Viewer with the other end of the coaxial cable which has been connected to LINK OUT side of the Sender unit.

Plug the socket with one end of the power cord(one of the accessories), and connect with the other end of the power cord to PD104, (1) which is connected to DC IN of LINK IN side on the other end. Then adjust PD104 voltage until LED of the Sender unit become red or green(green light means the camera is powered by an separate power).

### Signals Output Side Connection

Connect the local system(monitors, DVR, or other devices ) to Audio Out of the Signals Output side.

Connect the local system(monitors, DVR, or other devices ) to Video Out of the Signals Output side.

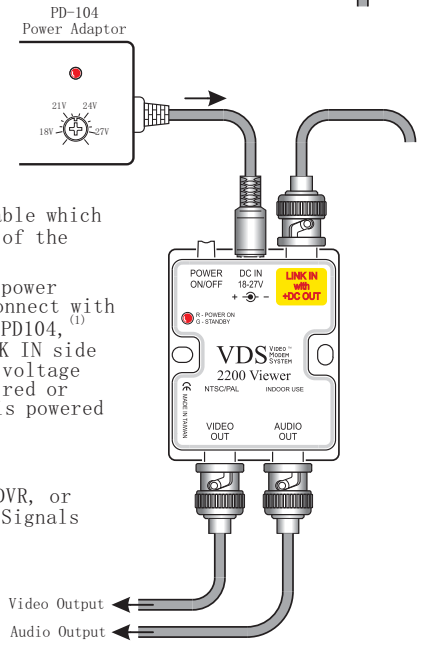


Fig.5 Connecting the Viewer unit

(1) PD102 or PD104 is the standard DC power supply of the system.





## Functions of Remote Unit (VDS2100 Sender-V):

### Signals Input Side

AUDIO IN:
To receive an audio signal from audio source, e.g. microphone.

VIDEO IN:
To receive a video signal from video source, e.g. Cameras.

DC OUT:
To send 12VDC power to a camera.

### Cover panel

LED:
When LED shows red, which means both the system and camera are powered well. When LED shows green, which means the system, excluding the camera, gets power supply from the Power Adaptor. When LED shows yellow, which means the power voltage is low and could probably cause a malfunction in the system.

### Link Output Side

LINK OUT with DC IN:
To send out video and audio signals to the Viewer unit and to receive DC power from the Viewer unit.

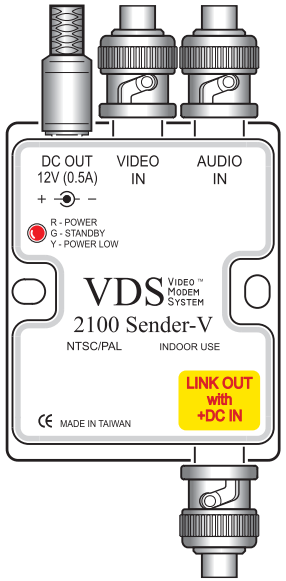


Fig.1 VDS2100 Sender-V, Remote Unit

## Specification of VDS2100 Sender-V

To ensure smooth operation of VDS2100, the following minimum system and setup requirements should be met.

### Electrical

#### Video and Audio

Video Input Signal:
1.0Vpp, 75 internal impedance (NTSC/PAL Compatible)
Bandwidth of Video Signal:
5.0MHz typ
Audio Input Signal:
3.0Vpp max, 22k Internal Impedance

#### DC Power and Link Out

DC Out:
DC12V, 0.5Amax.
Link Out with DC In:
Link signal output and DC Power Input, 27VDC Max.

### Connection: (Layout L04)

#### Video and Audio

Video Input:
BNC Socket
Audio Input:
BNC Socket

#### DC Power and Link Out

DC Out:
DC Plug(5.5/2.0mm)
Link Out:
BNC Socket

## Functions of Local Unit (VDS2200 Viewer):

### Link Input Side

LINK IN with DC OUT:
To receive video and audio signals from the Sender unit and to send DC power out to the Sender unit.

DC IN:
To input the power from the Power Adaptor.

POWER ON/OFF:
To turn on or turn off the system

### Cover panel

LED:
When LED shows red, which means both Viewer unit and Sender unit are powered properly. When LED shows green, which means the system is powered from the Power Adaptor well and the whole system is "standby".

### Signals Output Side


Fig. 2 VDS2200 Viewer, Local Unit

VIDEO OUT:
To send the video signal out to a device(monitor, video switch, DVR or other systems).

AUDIO OUT:
To send out the audio signal to a device. The level of audio signal from AUDIO OUT is exactly the same as that of signal which AUDIO IN receives at the Sender Unit.

## Specification of VDS2200 Viewer

To ensure smooth operation of VDS2200, the following minimum system and setup requirements should be met.

### Electrical

#### Video and Audio

Video Output Signal:
1.0Vpp, 75 internal impedance
(NTSC/PAL Compatible)
Bandwidth of Video Signal:
5.0MHz typ.
S/N ratio of Video Signal:
50dB typ
Gain of Audio Output:
0dB 3dB, 600 internal impedance
Bandwidth of Audio Signal:
50Hz to 10KHz, ∮3dB

#### DC Power and Link In

DC Power Input:
18V ~ 27V, Adjusted from AC to DC Power Adaptor
Link In:
Link Signal Input and 18V ~ 27VDC Out(0.5A Max.)

### Connection: (Layout L04)

#### Video and Audio

Video Out:
BNC Socket
Audio Out:
BNC Socket

#### DC Power and Link In

Link In with DC Out:
BNC Socket
DC In:
DC Plug(5.5/2.0mm)





## Making Connections

The following illustration gives an overview of the Sender unit and the Viewer unit connections. Please note that because of high DC output of the LINK IN port, only use a coaxial cable to connect to the LINK OUT side of

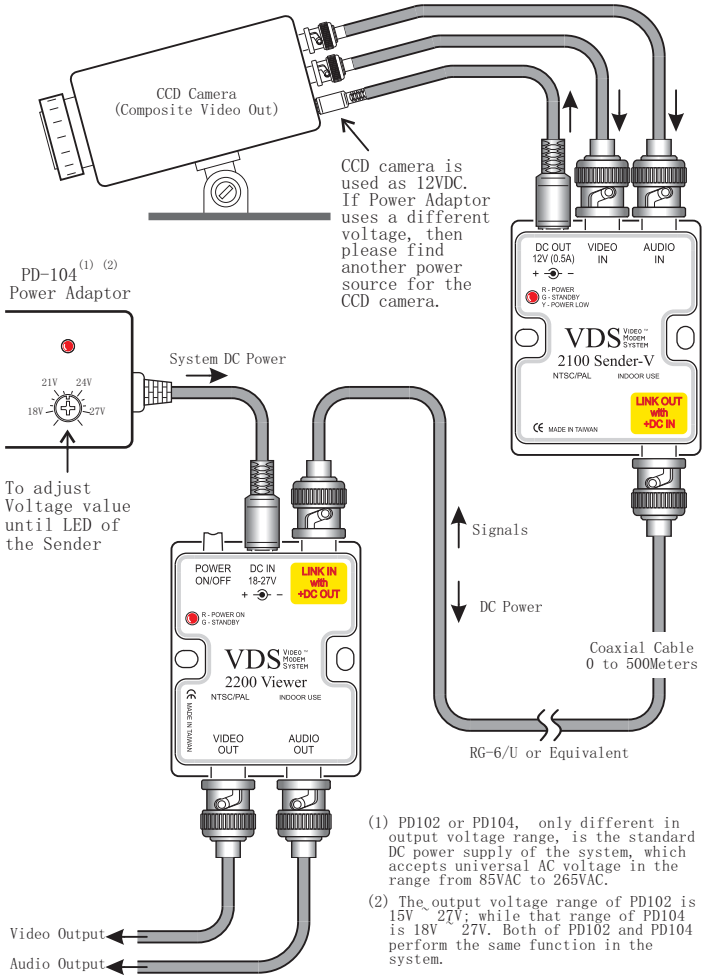


Fig. 3 Connection of VDS2100 Sender and VDS2200 Viewer

## Installation Notice

When setting up the VDS2100/2200 Sender unit and Viewer unit, be sure to note the following points:
Both units should be fixed securely to a permanent object such as a wall or a pillar.
Avoid locations with extreme vibrations or dust.
Avoid locations with dampness or extreme heat.