

CCTVMuleTM 4 Instructions

**"Send 4 Video Signals
Down 1x Co-ax Cable..."**

...with a **CCTVMuleTM**



- 12V DC
- Up to 4 videos down co-ax*
- Data combiner*
- Audio transmission*
- Up to 200mtrs*
- Easy to setup

***It's the easy way to add extra
cameras to an existing installation!***

* as per instructions

Mule4 Instructions
Order Code: **MULE004**

Instructions - Instructions - Instructions

CCTV Mule Instructions



Carries multiple video signals even data down **ONE** RG59 cable!

The CCTV Mule makes it easy to add extra cameras to existing installations, you save installation time and reduce the cost of buying and installing more cable.

The Mules work in pairs. One Mule combines the video signals to transmit them down 1 single co-ax, the other Mule then reconstructs the individual video signals at the remote end. A low-cost, easy solution that offers huge installation benefits and opportunities to add extra cameras.

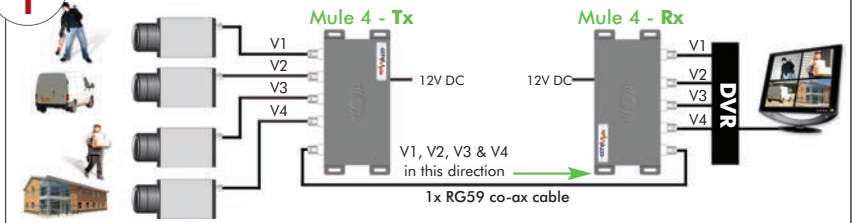
The clever electronics of the CCTV Mule also allow it to carry audio and RS485 data along the same co-axial cable. You can even carry three video signals in one direction and a fourth signal in the other direction!

The CCTV Mules need a 12V power supply at both ends but other than that, it's a really simple device to use, with no real configuration to do.

Step 1 - decide on the operation mode you require the Mule4 to work in...

It has the following 5 operation modes...

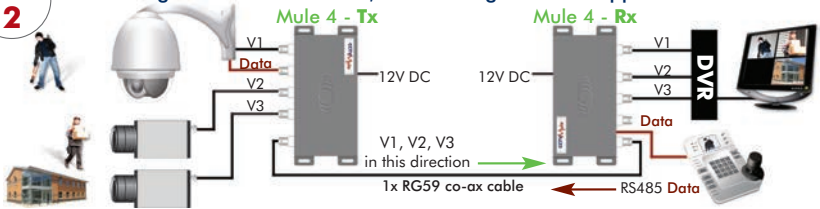
Mode 1 4 Video signals down 1 co-ax cable



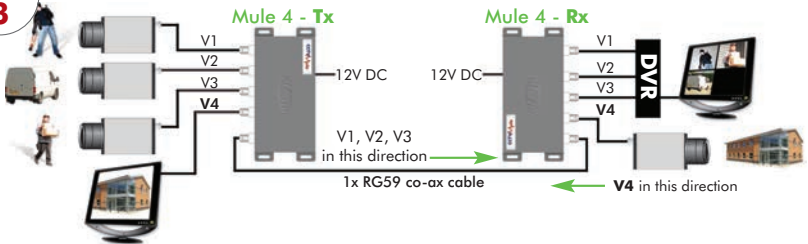
2 Instructions - Instructions - Instructions

CCTV Mule Instructions

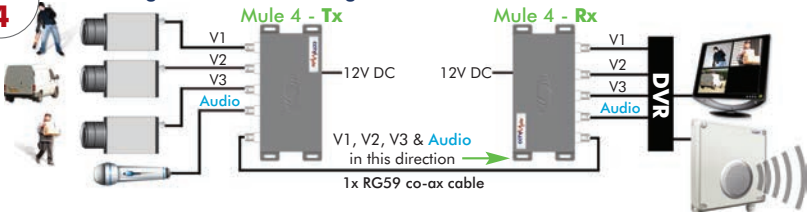
Mode 2 3 Video signals in one direction, 1 RS485 signal in the opposite direction.



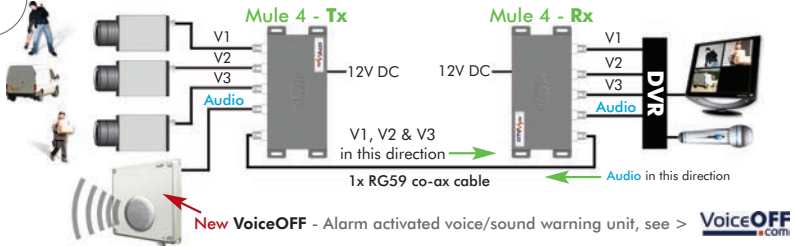
Mode 3 3 Video signals in one direction, 1 video signal in the opposite direction.



Mode 4 3 Video signals and 1 audio signal.



Mode 5 3 Video signals in one direction, 1 audio signal in the opposite direction.



New VoiceOFF - Alarm activated voice/sound warning unit, see > [VoiceOFF.com](http://www.VoiceOFF.com)

CCTV Mule Instructions

Step 2 - identify the relevant connections on the Mule4.

Connections - TX Transmitter

Each CCTV Mule is clearly marked on the power side as: **Tx** - Transmitter

Tx - Transmitter

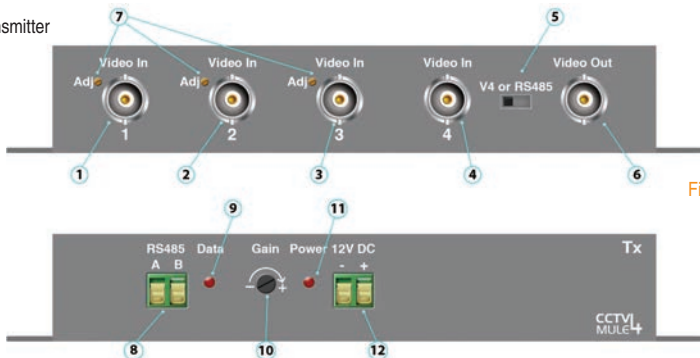


Figure 1

Tx - Transmitter unit has the following connections;

1. Channel 1 Video Input
2. Channel 2 Video Input
3. Channel 3 Video Input
4. Channel 4 Video or Audio Input - Output
5. Switch, for Channel 4 Video Input or RS485
6. Video Output to Mule Receiver
7. Video Input Brightness Adjust
8. RS485 Output
9. RS485 Data Receive L.E.D
10. Gain Control Switch
11. Power L.E.D
12. Power Input 12v D.C Only

Connections - RX Receiver

Each CCTV Mule is clearly marked on the power side as: **Rx** - Receiver

Rx - Receiver

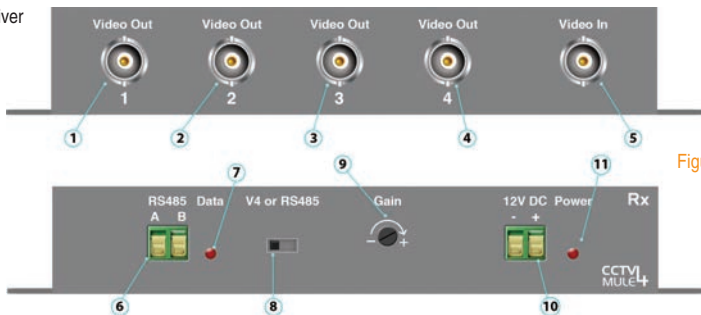


Figure 2

Rx - Receiver unit has the following connections;

1. Channel 1 Video Output
2. Channel 2 Video Output
3. Channel 3 Video Output
4. Channel 4 Video or Audio Input - Output
5. Video Input from Mule Transmitter
6. RS485 Input
7. RS485 Data Transmit L.E.D
8. Switch, for Channel 4 Video Input or RS485
9. Gain Control Switch
10. Power Input 12v D.C Only
11. Power L.E.D

CCTV Mule Instructions

Step 3 - fasten the unit to a wall

Installation

The units have wall mount fixings lugs either side for internal installation however for external installation the Mules MUST be installed in a suitable IP rated enclosure such as the BOX420 (figure 3).



Figure 3

Step 4 - power the units.

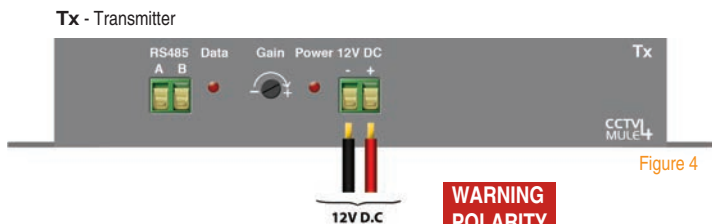
Powering the Units

The Mules require a 12v power supply to power the units, so you will require 2 power supplies. One for the transmitter and one for the receiver.

The PSU for the transmitter needs to be capable of supplying 12v D.C. @ 200mA continuously. The PSU for the receiver needs to be capable of supplying 12v D.C @ 350mA. Please ensure you use a fully regulated power supply or you risk damaging the Mules.

The Mules have a green 2 Pin connector that connects power to the units, both the Tx and Rx are clearly marked with the correct connection polarity. The red core is +12V and the black is 0v see figures 4 and 5.

Please make sure that you check the polarity of the power supply that you are using to ensure the power is connected correctly. Once power is applied to the Mules the power LED will light up and stay lit.



CCTV Mule Instructions

Step 5 - set up your chosen mode.

The clever electronics of the Mule4 allow it to carry audio or RS485 in addition to video signals along the same co-ax cable. It's even possible to send three video signals in one direction and a fourth video signal in another!

When you send audio or data down the co-ax you actually use up 1 video channel. This means it can send 3 video feeds and 1 audio, or 3 video signals and 1 RS485 data.

In mode 2, you need move the sector switch on the TX and RX to the position marked RS485. In all the other modes the switch needs to be in the V4 position. The switch is always the same on both the RX and TX.

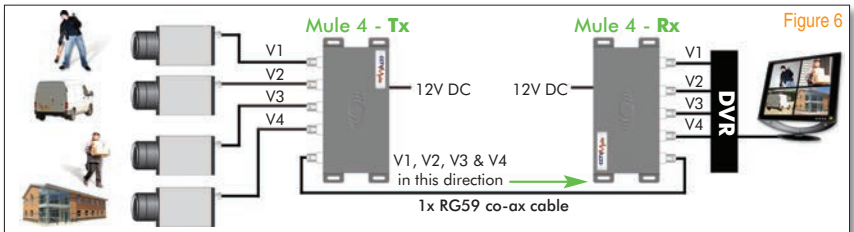
Mode	Tx	Rx
1	V4 or RS485 	V4 or RS485
2	V4 or RS485 	V4 or RS485
3	V4 or RS485 	V4 or RS485
4	V4 or RS485 	V4 or RS485
5	V4 or RS485 	V4 or RS485

NB: Switches on both Tx and Rx must be set identical to one another.

Operation Mode Setup

Mode 1 4 Video signals down 1 co-ax cable

The Mule4 allows 4 separate video signals to be sent down 1 co-ax cable allowing 3 extra CCTV cameras to be added to an existing system. Figure 6 shows a diagram of how mode 1 is configured.



Tx - Transmitter

1. Connect your 4 video input signals into the 'Video In' ports 1 to 4 (figure 1, 1-4).
2. Make sure the switch is on V4 position Not RS485 (figure 6a).
3. The RG59 co-ax cable connects to the 'Video Out' port (figure 1, 6), the maximum length for this cable is 200 metres.
4. You can adjust the brightness of the first 3 video inputs (figure 1, 7) if required by turning the grub screw with a screwdriver clockwise and anticlockwise, however 'Video In' 4 is fixed.

Rx - Receiver

1. The RG59 co-ax cable from the transmitter connects to the 'Video In' port (figure 2, 5) of the Mule receiver.
2. Connect your video cables from the 'Video Out' ports marked 1 to 4 (figure 2, 1-4) to your 4 video in inputs on the back of your DVR.
3. Make sure that 'V4 or RS485' switch is set to V4 (figure 6a).
4. If you find the video quality is low when coming out of the receiver, you can use the 'Gain' control knob (figure 2, 9) to fine adjust the video image. This is especially useful when transmitting over distance.

Switch in 'V4' position on both units.



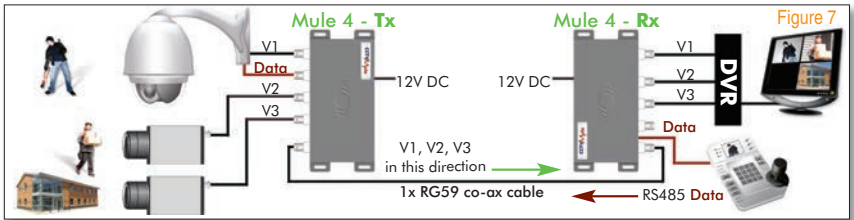
CCTV Mule Instructions

Operation Mode Setup

Mode 2

3 Video signals in one direction, 1 RS485 signal in the opposite direction.

Add extra cameras including a PTZ to an existing system using the RG59 cabling already installed. Perfect if you don't have access to run any more cables even data cables underground. The clever electronics of the Mule4 allow it to carry the RS485 data along the same RG59 co-ax cable enabling the operator to monitor and control the system from a different location. Figure 7 shows a diagram of how mode 2 is configured.



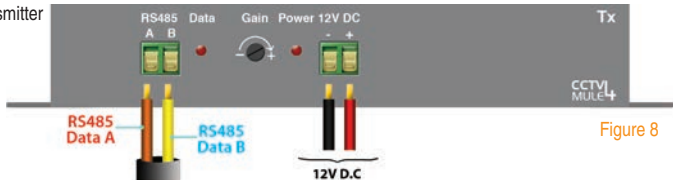
Tx - Transmitter

1. Connect the 3 'Video Input' signals into the 'Video In' ports 1 to 3 (figure 1, 1-3).
2. Move the switch from V4 to RS485 (figure 7a).
3. The RG59 co-ax cable connects to the 'Video Out' (figure 1, 6), the maximum length for this cable is 200 metres.
4. The RS485 **Data A** cable of your RS485 device goes into the green 'RS485' socket (figure 8 below) marked **A** and the RS485 **Data B** cable of your RS485 device goes into the socket marked **B**.

Switch in 'RS485' position on both units.



Tx - Transmitter



Rx - Receiver

1. Connect the RG59 co-ax cable into the 'Video In' port (figure 2, 5).
2. Connect the 3 video cables from your DVR to the 'Video Out' marked 1 to 3 of the RX unit (figure 2, 1-3). *Note you should have no cables connected to the video port 4 on either the TX or RX.*
3. Connect your PTZ keyboard to the green 'RS485' socket (figure 9 below). **Data A** cable into the green 'RS485' socket marked **A** and the RS485 **Data B** cable of your device goes into the socket marked **B**.
4. Move the switch from V4 to RS485 (figure 7a).
5. The 'Data' LED will only light up when a keyboard/PTZ are in operation (figure 2, 7).

Rx - Receiver



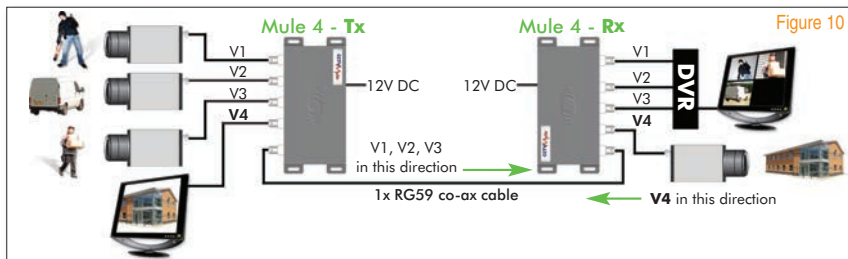
CCTV Mule Instructions

Operation Mode Setup

Mode 3

3 Video signals in one direction, 1 video signal in the opposite direction.

Mule4 can also transmit a CCTV video signal in reverse. This great feature is an added bonus where wirefree is not an option due to site conditions such as trees and other obstacles in the way, especially useful if you don't have access to run any more cables. Figure 10 shows a diagram of how mode 3 is configured.



Tx - Transmitter

1. Connect the 3 video input signals in to 'Video In' ports 1 to 3 of the transmitter (figure 1, 1-3).
2. Connect an LCD monitor to 'Video In' port 4 (figure 1, 4).
3. Check the 'V4 or RS485' switch (figure 10a) is set to V4.
4. Connect the RG59 co-ax cable into the 'Video Out' port (figure 1, 6) the maximum length is 200 metres.

Rx - Receiver

1. Connect the RG59 co-ax cable from the transmitter to the 'Video In' port (figure 2, 5) of the receiver.
2. Connect the 3 video cables from your DVR to the 'Video Out' marked 1 to 3 of the RX unit (figure 2, 1-3).
3. Connect a video input signal like a camera into 'Video Out' port 4 (figure 2, 4).
4. Check that the 'V4 or RS485' Switch (figure 10a) is set to V4.



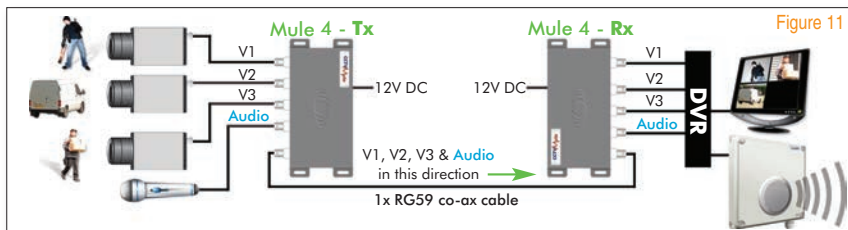
Figure 10a

Operation Mode Setup

Mode 4

3 Video signals and 1 audio signal.

The Mule4 can also send an extra audio signal down the RG59 allowing 3 camera signals and 1 audio to be sent back to the DVR or quad. There's no need to add extra cable to the existing RG59 co-ax cable as all this can be done with the Mule4. Figure 11 shows a diagram of how mode 4 is configured.



Mode 4 setup continued...

CCTV Mule Instructions

Mode 4 setup continued...

Tx - Transmitter

1. Connect the 3 video input signals into 'Video In' ports 1 to 3 of the transmitter (figure 1, 1-3).
2. Connect an audio input device such as a microphone into 'Video In' port 4 of the transmitter (figure 1, 4).
3. Check the 'V4 or RS485' switch (figure 11a) is set to V4.
4. Connect the RG59 co-ax cable into the 'Video Out' port (figure 1, 6) the maximum length is 200 metres.

Switch in 'V4' position on both units.



Figure 11a

Rx - Receiver

1. Connect the RG59 co-ax cable from the transmitter to the 'Video In' port (figure 2, 5) of the receiver.
2. Connect the 3 video cables from your DVR to the 'Video Out' marked 1 to 3 of the RX unit (figure 2, 1-3).
3. Connect an audio output device such as the VoiceOff into 'Video Out' port 4 (figure 2, 4).
4. Check that the 'V4 or RS485' Switch (figure 11a) is set to V4.

Operation Mode Setup

Mode 5

3 Video signals in one direction, 1 audio signal in the opposite direction.

The Mule4 is capable of transmitting audio in the reverse direction to 3 video camera signals. This mode works especially well in an existing installation where 1 of the cameras could be converted into a tannoy system using the VoiceOff. No additional cabling would be required to complete this setup. Figure 12 shows a diagram of how mode 5 is configured.

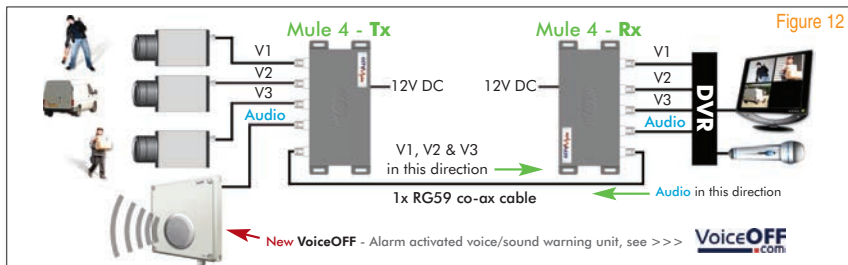


Figure 12

Tx - Transmitter

1. Connect the 3 video input signals in to 'Video In' ports 1 to 3 of the transmitter (figure 1, 1-3).
2. Connect an audio output device such as the VoiceOff into 'Video In' port 4 of the transmitter (figure 1, 4).
3. Check the 'V4 or RS485' switch (figure 12a) is set to V4.
4. Connect the RG59 co-ax cable into the 'Video Out' port (figure 1, 6) the maximum length is 200 metres.

Rx - Receiver

1. Connect the RG59 co-ax cable from the transmitter to the 'Video In' port (figure 2, 5) of the receiver.
2. Connect the 3 video cables from your DVR to the 'Video Out' marked 1 to 3 of the RX unit (figure 2, 1-3).
3. Connect an audio input device such as a microphone into 'Video Out' port 4 (figure 2, 4).
4. Check that the 'V4 or RS485' Switch (figure 12a) is set to V4.

Switch in 'V4' position on both units.



Figure 12a

CCTV Mule Instructions

Troubleshooting



Q.1 I have power to both Mules but I can not get any video out of them. I have all the cameras connected and outputs connected to the DVR.

A.1 Check the Mules are connected the correct way around. The transmitter Mule (TX) should have the camera inputs connected to it and sited at the camera end. The receiver Mule (RX) should have the video outputs connected to the DVR and should be sited at the DVR end.

Q.2 I have no video output and no power light lit.

A.2 Check the power supply is connected correctly to both Mules and outputting 12v D.C. Ensure the positive cable is connected to the positive port (+) and the negative cable is connected to the negative port (-) (figure 1 & 2).

Q.3 I have connected my PTZ Dome to the system but can not control it.

A.3 Check the 'V4 or RS485' switch on both Mules is set to RS485 and not V4 (figures 1 & 2). Ensure the dome telemetry cables are connected into the TX mule correctly, the positive data cable is in RS485 port A and the negative data cable is in RS485 port B. Finally check the keyboard is connected to the RX Mule and again the positive data cable is in RS485 port A and the negative data cable is in RS485 port B.

Q.4 The output videos are very grainy and poor quality.

A.4 You will need to adjust the gain control by turning the 'Gain' control switch on the Mules (figures 1 & 2). This is done with a flat blade screwdriver, turn clockwise a fraction on the TX and review the video output again this may need a few turns to fully improve video quality.

Q.5 I have my audio device connected to the TX Mule but no audio is coming out at the receiver end.

A.5 Ensure that the audio input is in 'Video In 4' on the transmitter (TX) Mule as this is the only port that will transmit audio. Check the audio output device at the receiver (RX) end is in 'Video Out 4'. The 'V4 or RS485' switch must be set to V4 and NOT RS485 (figures 1 & 2).

Q.6 My video going into the TX Mule is clear and bright but the video coming out of the RX Mule is dark.

A.6 You can adjust the brightness on 1-3 video channels on the TX Mule, however the video from the RX Mule can not be adjusted as this video channel is fixed.

Q.7 I can't get any video out of the units and I have my RG59 co-ax cable connected to 'Video In' of the TX.

A.7 Connect the RG59 co-ax cable to the 'Video Out' port on the TX Mule (Figure 1, 6) and connect the other end to the 'Video In' port on the RX Mule (Figure 2, 5). You can not use any other port on the Mules as these two ports are for the transmission of the video & data between the pair of Mules.

Q.8 I have video coming out of 1-3 of the video outputs from the RX Mule but can not get any video out of channel 4.

A.8 Make sure you have the 'V4 or RS485' switch set to V4 on both the TX and RX mules.

Q.9 I have all my inputs and outputs connected, the video going into the TX Mule is clear but the video coming out of the RX Mule is very poor. My cable run between both mules is over 200 metres.

A.9 The maximum cable run between the Mules is up to 200 metres.

Q.10 I have my RS485 device connected to the Mules but the 'Data' LED is not lit.

A.10 The 'Data' LED is only lit when data is being transmitted and received.

V4 or RS485 Switch Setup

NB: Switches on both Tx and Rx must be set identical to one another.

Mode	Tx	Rx
1	V4 or RS485 <input type="checkbox"/>	V4 or RS485 <input type="checkbox"/>
2	V4 or RS485 <input type="checkbox"/>	V4 or RS485 <input type="checkbox"/>
3	V4 or RS485 <input type="checkbox"/>	V4 or RS485 <input type="checkbox"/>
4	V4 or RS485 <input type="checkbox"/>	V4 or RS485 <input type="checkbox"/>
5	V4 or RS485 <input type="checkbox"/>	V4 or RS485 <input type="checkbox"/>

Other Great CCTV Products

CCTV Mule Range

Also available in 2 way - the Mule2

Send 2 Video signals down 1 Co-ax cable

...with a **CCTV Mule™**

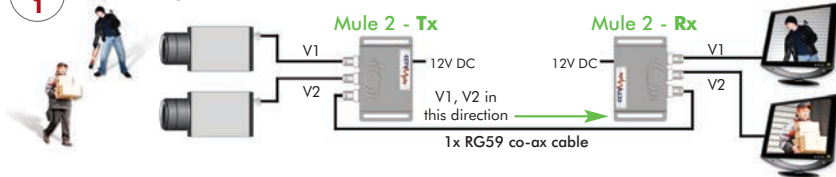


No need to run in extra cables, it does the donkey work not you.

CCTV MULE2 2 Video signals down 1 co-ax.

4 Operation Modes!

Mode 1 2 Video signals down 1 co-ax cable



MULE002	TX	RX
Voltage	12 V DC	
Current Consumption	125mA	120mA
Video Inputs	2x BNC	1x BNC
Video Outputs	1x BNC	2x BNC
Video Quality	D1 @ 25FPS - Every Camera	
Gain Control	For different cable lengths	
Operation Modes	4	
Cable Required	RG59 or better	
Max Cable Length	200 Metres	
Size	91 x 88 x 28mm	

Other operation modes:

- ② 1 Video signal in one direction, 1 video signal in the opposite direction.
- ③ 1 Video signal in one direction and 1 audio signal.
- ④ 1 Video signal in one direction and 1 audio signal in the opposite direction.

CODE	DESCRIPTION
MULE002	Mule2 Tx & Rx

For more info see:
www.cctvmule.com

Other Great CCTV Products

Other items to consider...

VoiceOFF™ MK2

With RS232 Input triggers up to **9999 sounds!!**



plus **20** alarm inputs *trigger* 20 user recordable warnings!

The new **VoiceOff MK2** is an alarm activated voice or sound warning unit that has 20 separate alarm inputs to *trigger up to 20* different sound recording files and with the new added feature of an RS232 input *can trigger up to 9999 sounds!!*

Alarm activations can be triggered from an internal or external PIR, break beam detectors, panic button, keyfob or from a DVR detecting video motion in a camera's footage.

Voice warning messages can be downloaded or recorded yourself in a MP3 format onto a removable SD card stored in the VoiceOff unit and used to deter intruders or even welcome visitors. Similarly sound files such as a police siren or dog barking can be used to deter unwanted visitors in vulnerable areas.

Specification
20 x Alarm Inputs
Speaker output 8W 80 ohms
SD card compatible (supplied)
MP3 file compatible
8-18V AC/ DC
12V DC 120mA Standby
200mA max (depending on volume)
Wall Mounting Fixing Lugs
Ivory ABS Housing, Rated IP65
Max Size: H234 x W188 x D85 (inc. gland/speaker)

CODE	DESCRIPTION
VOX200	VoiceOff Unit

Features

- Accepts up to 20 alarm inputs
- Powerful 10 Watt Output
- Voice & sound files stored on a removable SD card
- Can be activated automatically using alarm inputs
- Can be used as a talkback amp with DVRs
- RS232 connection to PC or DVR
- Stores & plays 9999 sounds
- Voice & sound files available from www.voiceoff.com or scan the QR code >>>

VoiceOFF™
VoiceOFF.com



Use the VoiceOff for...



VideoMitters™ Digital Transceivers

*Monitor & control
video & sound from
one location to
another without wires!*



Up to 1.2Km Range*

The VideoMitters are a break through in the transmission of video signals.

By digitising the video & audio signals, far superior performance can be achieved in transmission distance and received image & audio quality.

The innovative VideoMitters can also transmit IR data in the reverse direction to the transmitted audio and video signals allowing any device that uses a hand held IR remote to be controlled from a different room or location without wires.

Simple, effective and low cost, the VideoMitter is an installer's dream product saving money on cabling and labour with outstanding results.



Order Code:
MITKIT

Tx and Rx unit with antennas, 2x Phono-BNC Converter
2x AV cables and 2x IR extension leads

— outperforms others —

Visit: www.VideoMitter.com

Or scan the QR code
with your phone to take
you to the website!



Specification:

2.4Ghz Frequency
Up to 20 pairs on 1 site
Auto channel selection
12V DC - Terminal Strip
Current - 200mA
300mA + 12V PSU required
Video Connection - 1x Phono Input
Audio Connection - 2x Phono Inputs
IR Socket
Antenna - RP SMA Female
Unit Size-113 x 95 x 25mm

*Additional antennas
available!*



CODE	DESCRIPTION
MITKIT	Tx & Rx Units

*Additional antennas available for 1.2KM.

Other Great CCTV Products

Keep vital evidence secure from tampering or theft by fitting your DVR into a KitVault lockable enclosure...

For more info go to:
www.kitvault.com

Hinged Lid for easy installation and engineer access

Wall & Desk bothholes for permanent fixing to wall/shelf

Hot Air Out!

Cool Air In!

How fan is fitted inside

Easy fit fan kits (12V DC) for extra cooling of stored equipment

Choice of 3 fan vents for full flexibility to suit the on-site conditions

Lockable to prevent unauthorised access

Tough window panel for easy monitoring of equipment

Ext Measurements:
W520x H150 x D550mm

Extra deep design for easy rear cable access to suit most DVRs

The CCTV Code of Practice 2008 that forms part of the Data Protection Act states that recorded CCTV images must be, "securely stored, where only a limited number of authorised persons may have access to them".

The KitVault is designed to house CCTV equipment such as DVRs to keep the equipment not just secure from unauthorised tampering by staff and visitors but also from theft of the equipment itself. In addition to the lockable door, the enclosure can be bolted to a shelf or desk and wall to prevent removal.

Finished in an attractive silver and graphite finish and built from 1.7mm steel, the enclosure blends easily into commercial environments. Fan vents situated on both sides and the rear allow the quick fitting of one or more of the 12V DC fan kits available to allow cool air to be circulated around the electronic equipment stored inside it.

The KitVault houses all the DVRs in this booklet as well as most on the market with internal measurements of: W515 x H130 x D525mm.

All NEW Design!

Extra room at rear for DVR connections

Fan Option for Cooling!

CODE	DESCRIPTION
CCT245	DVR KitVault
FAN012	12V Fan Kit



Scan the QR code with your phone to take you to the website!

Other Great CCTV Products

Introducing the Who is Watching Me Signage Solutions No Overprinting Required!



**FAST, EASY, LOW COST,
SMART & CONVENIENT**

Each sign is pre-printed with a unique serial number, so overprinting is a thing of the past.

1-Fit it!!

Pre-drilled holes speed up installation and rounded corners help comply with H&S regulations.



2-Register it!!

You register your unique "Sign ID" to your contact details at an online data base so the public are able to contact you as is required by the Data Protection Act.



Fit it - Register it - No need to overprint it!

Visit:
www.WholsWatchingMe.org

Or scan the QR code
with your phone to take
you to the website!



Other Great CCTV Products

CCTVMuleTM Specifications

**Send 4 Video signals down
1 co-ax cable with a Mule4**



CCTV MULE 4
4x Video In

**1x RG59
OUT**

*Even audio
& data!*

For further information or help please contact us by email:
support@cctvmule.com

or visit us online at: www.cctvmule.com



*Or scan the QR code
with your phone to take
you to the website!*

Technical Specification

MULE004	Transmitter TX	Receiver RX
Voltage	12 V DC	
Current Consumption	200mA	350mA
Video Inputs	4x BNC	1x BNC
Video Outputs	1x BNC	4x BNC
Video Quality	D1 @ 25FPS - Every Camera	
Gain Control	For different cable lengths	
Operation Modes	5	
Cable Required	RG59 or better	
Max Cable Length	200 Metres	
Size	175 x 110 x 30mm	



WEE/CG0783SS

This symbol on the products and/or accompanying documents means that used electronic equipment must not be mixed with general household waste. For treatment, recovery and recycling please return this unit to your trade supplier or local designated collection point as defined by your local council.

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Instructions - Instructions - Instructions