



# Instruction Manual

MIT500

Wireless 2MP AHD Transmission

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VideoMitter.com

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## Introduction

The 2MP HD MegaMitter can transmit one AHD CCTV camera wirelessly.

The MegaMitters are sold in pairs and one acts a transmitter and the other a receiver for a one to one transmission.

For greater distances consider upgrading the antennas to directional ones which are sold separately.

Up to 4 pairs of MegaMitters can be used on the same site but it is recommended to use directional antennas when using multiple sets and keep them a minimum of 2m apart.

The MegaMitters require power from regulated 12V DC power supply.

*Note: power supplies are sold separately.*

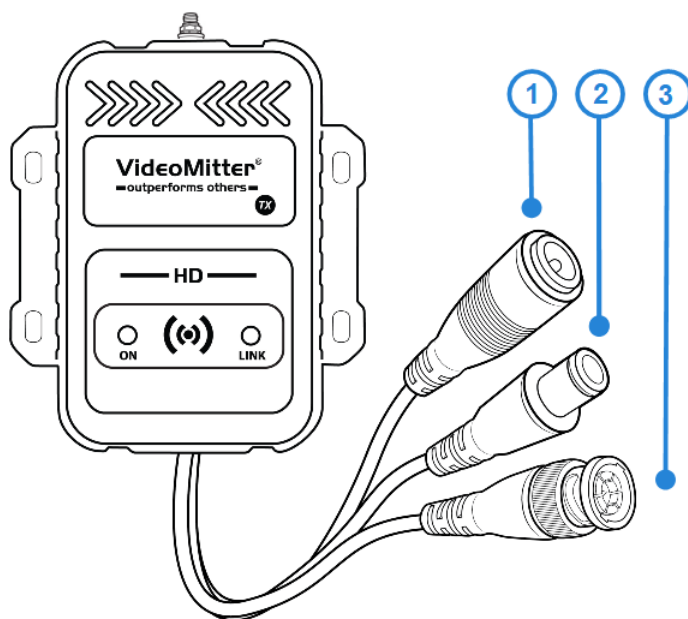
## User Information

- Ensure the camera connected has a 4-in-1 selectable output set to AHD or have a AHD video output (2MP).
- Ensure the MegaMitters are installed in line of sight with no obstructions in between the TX & RX.
- The connections must be kept clean and dry, where they will not be exposed to high temperatures, moisture or excessive dust.
- Do not touch the product connections with wet hands.
- Ensure the power is switched off if the product is not in use for a long period of time.
- There are no user serviceable parts in the product. Opening or attempting to repair the product will void the warranty.
- Only use a suitable regulated 12V DC power supply.
- Do not install or use the device if the power cable or video connections are damaged.
- Do not use alcohol or solvents to clean the product, only clean using a damp cloth.

## Connections and Powering

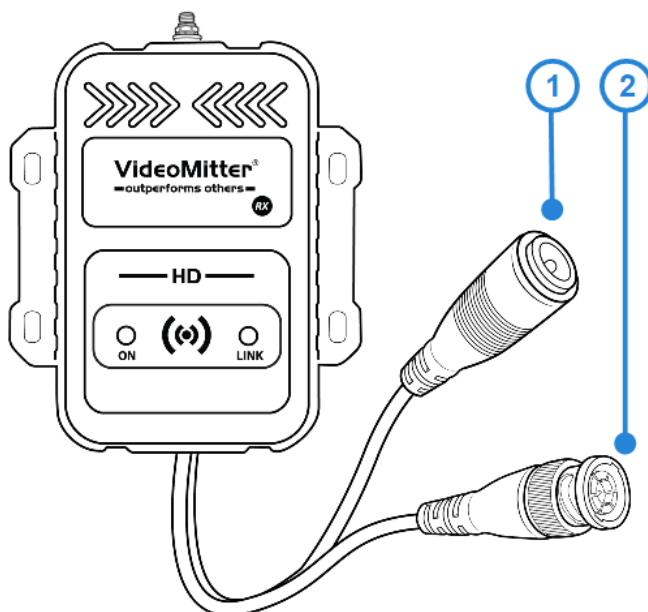
Before installation it is recommended to connect the whole transmission setup on a bench or local to the DVR / monitor. To ensure compatibility, and that all parts are in working order.

Both the transmitter and receiver require a regulated 12V DC power supply individually. When they are powered up a red power light will come on. The PSU for the receiver and transmitter needs to be capable of supplying 12V D.C. @ 190mA continuously as a minimum. (Not including the power out connection on TX for powering a camera)



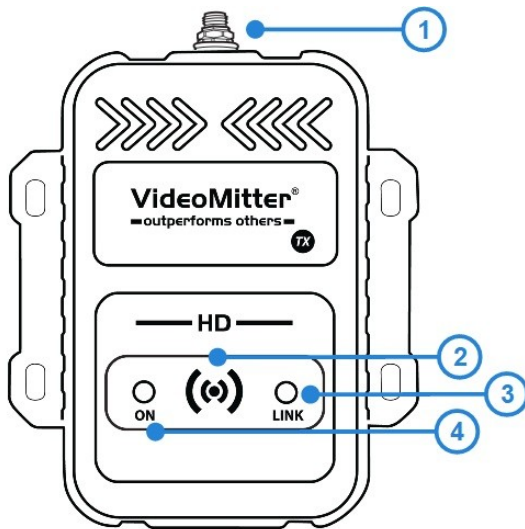
The **Transmitter (TX)** unit has the following connections:

1. **2.1mm 12V DC Power in** connection.
2. **2.1mm 12V DC power out** connection for power pass-through so camera and TX can share one PSU.
3. **Video in** connection via a **BNC Lead**.



The **Receiver (RX)** unit has the following connections:

1. **2.1mm 12V DC power in** connection.
2. **Video out** connection via a **BNC Lead**.



Both units have the following:

1. **Antenna Connection** (RP SMA Male Socket) connects to extension cables or direct connection antenna models.
2. **Pair Button**.
3. Green **Link** Indicator LED.
4. Red **Power** Indicator LED.

## Connecting Video

**AHD 720p / AHD 1080p** are the only compatible video input signals.

Connect the video input feed to the video BNC socket on the Transmitter.

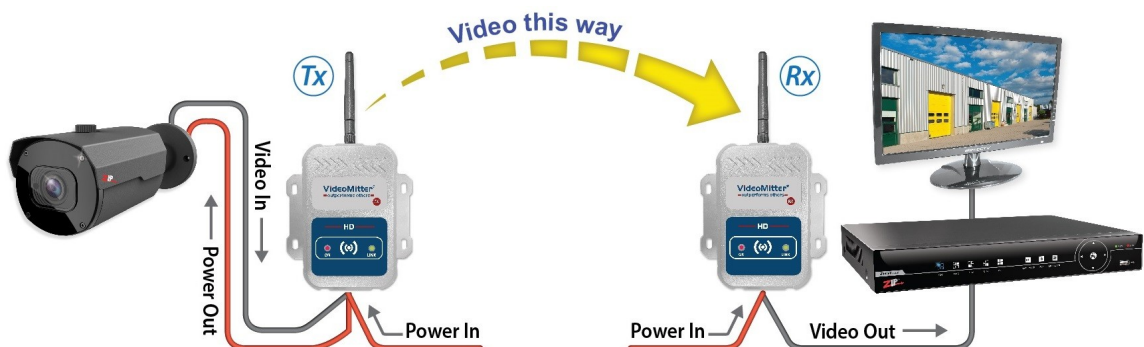
Connect the video output feed to the BNC socket marked on the Receiver.

## Powering a Camera

If the Transmitter (TX) power out connection for powering a camera is to be used, then ensure the PSU is rated enough to power both the MegaMitter and the camera.

For Example; most eyeball cameras on average require 750mA. Combined with the Transmitter this is roughly 950mA. Therefore a PSU rated a 12V D.C. @ 1.5A would be recommended for the Transmitter and an eyeball camera. Other cameras may require more current, so ensure the correct power rating is calculated.

To power a camera via power pass-through connect the power out cable (1) on the transmitter to your camera's power in female lead.

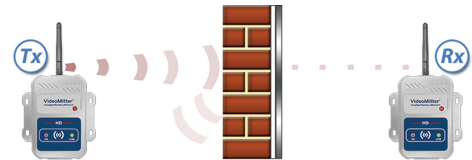


*Note - If you press and hold the reset button you will need to re-pair the units, see [Pairing](#)*

## Signal Transmission

Different site conditions will affect the signal transmission, and therefore will affect; distance, range and performance of the MegaMitters.

In modern buildings sometimes the structure is lined with “FOIL”. This can reflect or “ground” the wireless signal, avoid transmitting through such. If wiring is not an option then try mounting the MegaMitter on the exterior of a building with the connections in an ABS IP66 (waterproof) box.



When it is raining heavily microwave signals will be absorbed by the rain and reduce the distance it travels.

Keep the distance to a minimum between TX and RX, or use directional antennas, see [Additional Antenna](#)<sup>11</sup>.



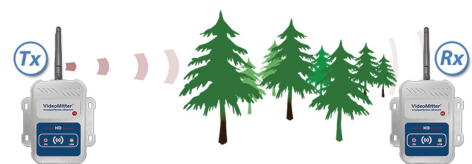
On some sites you may have other RF equipment that can interfere with the MegaMitters.

Fitting directional antennas help “block” out the interference, see [Additional Antenna](#)<sup>11</sup>



Weather can affect transmission and reduce the distance it travels.

Keep the distance to a minimum between TX and RX, or use directional antennas, see [Additional Antenna](#)<sup>11</sup>.



Microwave signals will not go through hills, as the density of the hill absorbs the signal.

Ensure the MegaMitters are installed in line of sight, avoid landscape obstacles and large changes in elevation.

Allow for the use of directional antennas, see [Additional Antenna](#)<sup>11</sup>.





## Pairing

The MegaMitters are supplied bench tested, and pre-paired. Only one Receiver (RX) can receive video from one Transmitter (TX), ensuring private secure connections.

When both the TX & RX are powered up and in within transmission range of each other the green light will illuminate to indicate they are connected.

### Pairing Process

*As supplied the MIT500s are already paired, but if they do need pairing follow the process below;*

1. Connect AHD Video into the Tx. Connect 12V DC Power to both Tx and Rx. Press the **PAIR**  button down on the RECEIVER for 3 seconds. The Link LED will start to flash.
2. A countdown will start for 30 seconds, then press and hold the PAIR  button on the TRANSMITTER until the link LED starts flashing.
3. Once pairing is complete both Link LEDs will display solid Green. If a monitor is connected to the RECEIVER it will display a signal strength bar at the top left hand corner of the display.

## Multiple Pairs

When installing it is good practice to keep the MegaMitters away from another transmission devices including other MegaMitters. This is because interference can cause poor performance which may result in intermittent loss of signal or non operation.

The standard antenna that the MegaMitters are supplied with is called an “Omni-directional” antenna, this means it transmits in “all” directions.

So when two transmitters are close to each other they will be transmitting signals at each other as well as the receiver.



When using multiple pairs, keep the transmitters and receivers spaced apart. A spacing of 1-2 metres is required between each transmitter, and the same between each receiver.

It is recommended to use **no more than 4 pairs** per site to minimise any chance of cross interference.

Don't install two transmitters close together with omni directional antennas, as the signal can cause distortion and this can overwhelm the transmission causing loss of signal.

Keep the MegaMitters at least 1-2 metres apart and add directional antennas.





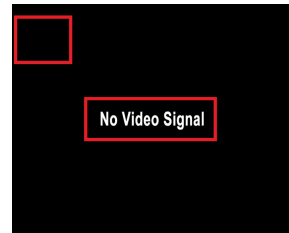
## Troubleshooting

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### No Video Signal displayed and the transmission signal icon does not appear

This means there is no signal between the MegaMitters.

1. The wireless signal between the TX and RX is low, meaning something is impeding the signal, stopping the transmission - see [Signal Transmission](#)<sup>[6]</sup>
2. The two devices are currently too far away from each other with the current aerials.
3. Something is causing interference stopping the wireless transmission between the two MegaMitters - see [Signal Transmission](#)<sup>[6]</sup>
4. The MegaMitters are not Paired, try the pairing process again - see [Pairing](#)<sup>[7]</sup>

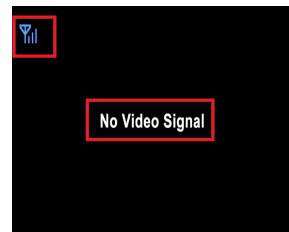


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### No Video Signal is displayed but the transmission signal icon is displayed

This means the wireless transmission between the two MegaMitters is OK, but the input video signal is not compatible or no video input signal is detected.

1. The video input signal is not being received by the TX. Signal could be too low, or the camera is not powered.
2. The video input signal is not compatible. Check the signal is AHD 720p / AHD 1080p.

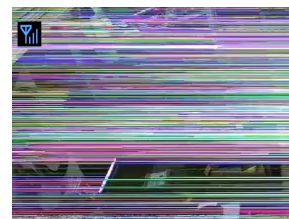


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### Video is displayed in black and white / Corrupted Video

This means the video input signal is being detected by the MegaMitter TX but is the wrong video format or the video signal is too low.

1. The video input signal is not being received by the TX, signal could be too low or no video is detected.
2. The video input signal is not compatible. Check the signal is AHD 720p / AHD 1080p.
3. If a camera is also being powered from the same power supply (at the TX), then the camera may require a separate power supply to drive the camera and the MegaMitter.



### Flashing green Link LED

This means the MegaMitters units are not paired or there is no input video signal to the TX unit.

1. The wireless signal between the TX and RX is low, meaning something is impeding the signal, stopping the transmission - see [Signal Transmission](#)<sup>[6]</sup>
  2. The two devices are currently too far away from each other with the current aerials.
  3. Something is causing interference stopping the wireless transmission between the two MegaMitters - see [Signal Transmission](#)<sup>[6]</sup>
  4. The MegaMitters are not Paired, try the pairing process again - see [Pairing](#)<sup>[7]</sup>
  5. The video input signal is not being received by the TX, signal could be too low or no video is detected.
  6. The video input signal is not compatible. Check the signal is AHD 720p / AHD 1080p.
- 

### Flashing red Power LED

This means the power supply does not have enough power to drive the MegaMitter.

1. Check that the power light comes on when power is applied. Check the same at both ends.
  2. Disconnect video input or output connections as the video connection could be at fault.
  3. The issue could be related to voltage drop or the voltage being too low at the MegaMitter.
  4. The power supply may not be providing enough current output to the MegaMitter.
  5. If a camera is also being powered from the same power supply (at the TX), then the camera may require a separate power supply to drive the camera and the MegaMitter.
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### Video loss at night

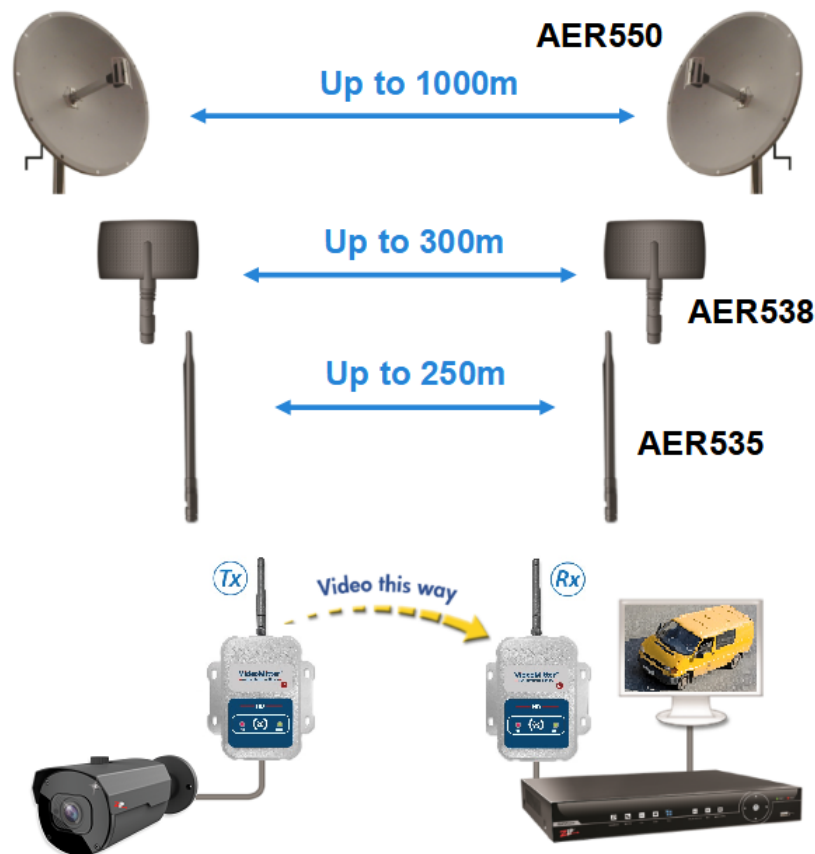
Not enough current supplied to the camera.

1. The issue could be related to voltage drop or the voltage being too low at the MegaMitter.
2. The power supply may not be providing enough current output to the MegaMitter.
3. If a camera is also being powered from the same power supply (at the TX), then the camera may require a separate power supply to drive the camera and the MegaMitter.

## Additional Antenna

The antennas that are supplied with the MegaMitters are specified to work up to 200 metres with line of sight\*, This range can be extended up to 1Km.

\*Line of sight means no physical obstacles and the antennas can actually see each other.



To see our full range of aerials please visit;

<https://systemq.com/store/Category/Wireless-CCTV-Video-Antennas>



## Quick Links

<http://www.videomitter.com/>



The screenshot shows the VideoMitter.com website. The main banner features the 'MegaMitter' product, which is a 'Wireless 2MP AHD Transmission' device. The text on the page includes 'VideoMitter Digital Transceivers', 'Wireless 2MP AHD Transmission', 'MegaMitter - outperforms others -', and 'Transmit 4 in 1 CCTV Cameras.' A '100m Range' is indicated with a double-headed arrow. A list of features includes: 'Superb images', 'Robust aluminium case', 'Almost no loss of picture quality', 'Antenna upgrades for greater distances', and 'Compatible with older and newer DVR's'. A small note at the bottom says 'Easily transmit AHD Video from one location to another 1... up to 10M without wires!'. The website also has a navigation menu on the left with links like 'Home', 'MegaMitter - New for 2012', 'MiniMitters', 'Accessories', 'How to install...', 'CCTV News', 'CCTV Video', 'Free Stuff...', 'Trade Enquiries', and 'CCTV Support...'.

<https://voiceoff.com/>



The screenshot shows the VoiceOFF.com website. The main banner features the 'VoiceOFF.com' logo and the text 'PRE-RECORDED MESSAGES ... at your fingertips'. Below the banner is a navigation menu with links: 'Home', 'Features', 'Hardware', 'Software', 'Applications', 'MP3 Messages', 'Bespoke Messages', 'Support', and 'Contact Us'. The main content area has a 'Download' button and the text 'Find Your Message! Pre-Recorded MP3 Files'. Below this, there are sections for 'Pre-recorded MP3 Messages' and 'Available Voices'. The 'Available Voices' section shows two options: 'Angela AI Female English' and 'Britney AI Female American', each with a play button icon. The 'Pre-recorded MP3 Messages' section includes text: 'You'll find 100s of messages and even sound effects suitable for your MP3 device or player, simply decide on your message, pick a voice you like the sound of and add it to your basket.' and 'Whether it's a security message, business related, for your own private property, or may be you are in retail, either way we have a large collection of MP3 sound files to choose from'.

## Specifications

Frequency	2.4Ghz
Video Format	AHD 720p / AHD 1080p
Range	200m (as supplied)
Max Range	Up to 1Km (with additional aerials)
Audio	No
IP Rating	IP65 (providing connections are made IP65)
Antenna	RP-SMA
Video Connection	BNC
Input Voltage	12V DC
Current Consumption	Tx 250mA Rx 140mA
Power Connection	2.1mm DC Socket
Operating Temperature	-30 ~ 70°C
Delay	150mS Max
Modulation	16QAM/QPSK/BPSK
Transmission Channels	19 (FHSS – maximum 4 pairs per site)
Pair separation distance	Minimum of 2m apart
Dimensions	110mm x 95mm x 25mm (Not including aerials or wires)

## Conditions

### 11.1 General Company Disclaimer

*All specifications are approximate. System Q Ltd reserves the right to change any product specifications or features without notice. Whilst every effort is made to ensure that these instructions are complete and accurate, System Q Ltd cannot be held responsible in any way for any losses, no matter how they arise, from errors or omissions in these instructions, or the performance or non-performance of the equipment that these instructions refer to.*

### 11.2 WEEE Declaration



*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 WEE/CG0783SS collection point as defined by your local council.*

### 11.3 Copyright

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S40 2WB