

Features**Video & Dual Audio Transmission****Range* 100mtrs ext. / 30mtrs int.****Robust Construction****Wall Mounting Lugs****License Exempt 1ETS300440****12v D.C Operation****12v DC 1A PSU supplied****16 Channel Selectable**

** Range can be affected by the environment.*

Read these instructions before using the CCT197 Transmitter and CCT198 Receiver

The CCT197/8 wireless video and audio transmitters will work with any video and audio equipment that has a 1V pp (peak to peak) PAL output. These useful devices enable camera pictures and audio to be transmitted from one building or location to another without the need for interlinking cables. As both units can be wall mounted, they are ideal for professional installations and can be installed externally in a suitable IP rated enclosure. As the transmitter and receiver can use external antennae it allows the units the best possible transmission and reception of video & audio signals.

Important –**Never power up the transmitter without the transmitter aerial connected.**

You should not fit an **external** antenna to the transmitter in the UK due to licensing restrictions as this may increase the transmitter's effective output. An external antenna must only be fitted at the Receiver end.

Connections.

Both units have the following connections 12v D.C. power connection with a 2.1 power jack plug -

1 Video Connection via a "Phono" socket (Yellow) -

2 Audio Connections via "Phono" sockets (Red Right & White Left) -

1 Antenna F plug connection

1 Channel selection Dipswitch. (Dipswitch settings in transmitter and receiver **must** be identical)

**Powering the Units.**

Both the transmitter and receiver need a power supply of 12v DC 1A. When choosing any PSU for CCTV equipment always ensure that it is **fully regulated** or you may risk damaging the CCTV equipment. If you are using any other PSU you **MUST** check the polarity of the power supply that you are using to ensure the power is connected correctly.

Always check this with the actual instructions!

Video and audio signals are connected to the transmitter phono connectors. Remember that both video and audio signals require both a signal AND a ground connection to complete the circuit. The units are not weatherproof and therefore if you are using them externally you will need to house them in a suitable waterproof external enclosure.

Changing the Transmitting and Receiving Channels

Both the TX and RX have dipswitches that are used to select the transmission channels. To select a channel you must put the appropriate dipswitch to "ON". If you have set up the TX to transmit on a certain dipswitch setting the RX must be set to exactly the same setting for it to communicate with the TX unit.

	Dipswitch 1	Dipswitch 2	Dipswitch 3	Dipswitch 4
Channel 1	OFF	OFF	OFF	OFF
Channel 2	ON	OFF	OFF	OFF
Channel 3	OFF	ON	OFF	OFF
Channel 4	ON	ON	OFF	OFF
Channel 5	ON	ON	ON	ON
Channel 6	OFF	ON	ON	ON
Channel 7	ON	OFF	ON	ON
Channel 8	OFF	OFF	ON	ON
Channel 9	ON	ON	OFF	ON
Channel 10	OFF	ON	OFF	ON
Channel 11	ON	OFF	OFF	ON
Channel 12	OFF	OFF	OFF	ON
Channel 13	ON	ON	ON	OFF
Channel 14	OFF	ON	ON	OFF
Channel 15	ON	OFF	ON	OFF
Channel 16	OFF	OFF	ON	OFF

1 Transmitter and 2 or more Receivers!

It is possible to use one transmitter and have 2 or more receivers. For example, you may use this type of configuration to transmit the camera signal from an entrance porch to say two different locations so either location can keep an eye on the entrance porch. In this configuration you will need to set both the transmitter and the two receivers all to the same channel number.

Transmitters and Receivers!

It is possible to simultaneously transmit several camera pictures at the same time by using a number of transmitters and receivers. In this instance you are effectively creating a "wirefree" camera installation. Please remember that there is no such thing as a totally wirefree installation as you will still need to power your camera and transmitter but this is often easier to do locally than running all the cables out for a totally wired job!

***TIP1** –When using more than one transmitter on the same site try to keep the transmitters a reasonable distance apart. What is a reasonable distance? The further the better; as the transmitters share a very narrow transmission bandwidth you do not want a TX on one channel affecting the picture of another TX on a different channel. Try and keep transmitters at **least 5 metres** apart as it helps get the best results.*

Obtaining the best picture quality.

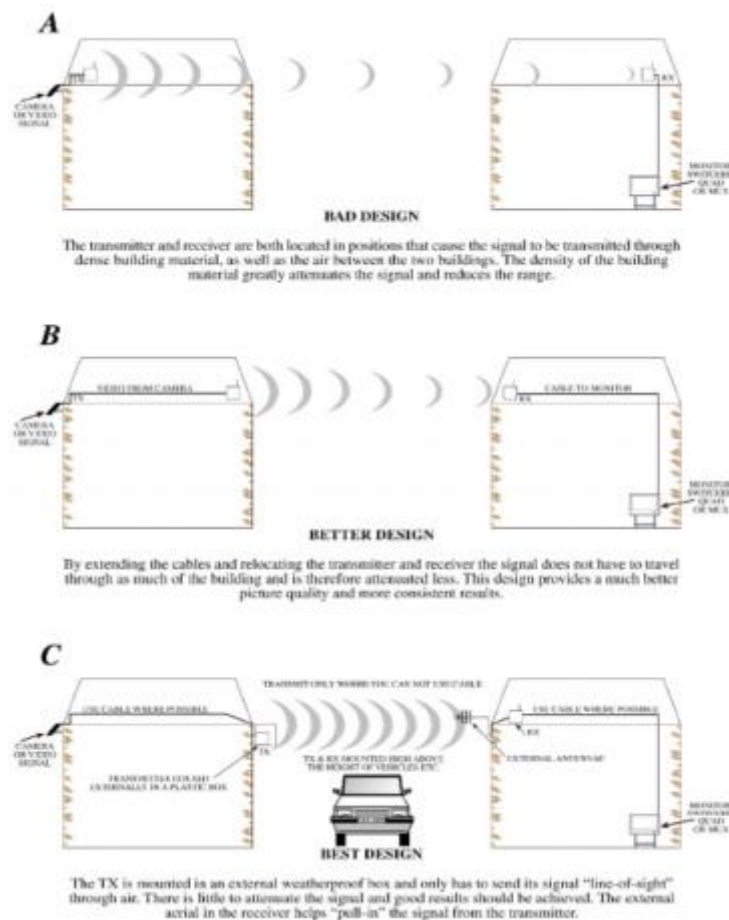
Both the transmitter and receiver are supplied with standard antennae. Ideally both antennae should be installed in an upright position but you should try rotating both in various positions to obtain the best picture quality.

When using the TX & RX indoors, the construction of the building **will** attenuate the signal and therefore affect the picture quality. Buildings with lots of steelwork or foil backed plasterboard may attenuate the signal more than simple brick and studwork. The transmission frequency of the devices is in the 5.8Ghz band, so if you are installing the devices in any commercial (possibly residential) property or environment; check that no other devices are transmitting on the same frequency that may effect the performance of the CCT197/198. Devices that may be on this frequency to check for are; Wirefree computer networks, wirefree computer keyboards & mice, transmitted telecom and computer links from one building to another (usually with a parabolic type aerial). Generally if you are obtaining poor pictures you need to qualify the reason why, by a logical method of deduction. You must remember that objects in the path of the transmitter and receiver will attenuate the signal and reduce the effective range and picture quality.

TIPS

When using the units externally, lines of sight will always achieve the best results. A line of sight means the units can visibly see each other without any obstructions. Remember whatever is in the way of the line of sight between the two units will attenuate the signal. A building, people, hills or a mound of earth for example will reduce the overall range at which a good picture quality is attainable. Transmitting *over* water can also reduce the range, as the signal won't bounce off the water but will be absorbed by it. As the units are easy to move using a 12v battery, camera and monitor, it is quite easy to test the actual distance and quality before your actual installation.

You can often get good or near line of sight, by taking your power and video signals to the ends of facing buildings using cabling and then transmitting between the two buildings (rather than through them) using the TX & RX. If you are going to put the units in external enclosures make sure the enclosures are the plastic/ABS type, as these will allow the radiated signal to pass through them. Whatever you do you must not put the receiving or transmitting aerial in a metallic box as this will adversely affect the products and their performance. ***This also means that you must not put either device in a metallic CCTV housing.*** The transmitter operates at quite a high frequency (Ghz) and such signals can be attenuated by water so in heavy rain, or even possibly dense fog, the range of the units may be shortened. Mount the units at a reasonable height.



If you mount both units at over 2.5 metres high indoors, people walking around will not get in the line of sight of the two units and attenuate the signal. Similarly when using the units externally mount them above the height of any passing cars and lorries, which would drastically attenuate the signal.

Do not paint or attach metallic stickers to the transmitter.

Do not touch or hold the transmitter aerial when it is powered up.

The transmitter and receiver should not be within 10 metres as the video gain may be too high. It may help to remove the receiver antenna to overcome this problem **but on no account should the transmitter aerial be removed when powering up as this can damage the transmitter.**

Fault Finding

Rule number 1 is always reread the instructions as it's quite possible you have missed something simple but vitally important to the correct operation of the devices. Don't go against the instructions; if they recommend a certain way of wiring something or a particular cable or PSU then use it!

After rereading the instructions if you still don't get the desired results look through the following section and try to break the problem down logically and work out which bits are working correctly and which bits aren't. For example, the PSU may not be big enough for the load or the wrong voltage, the camera may not be working or the lens has not been fitted correctly.

Symptom No picture on the monitor screen.

The first thing you need to know is that the camera is producing a picture, never take this for granted. By taking the monitor (or test monitor) to the camera you should get a good picture. Only when you have **proven** that the camera is producing a **good** picture is it worth looking at other equipment in your installation.

Symptom – Poor picture on the monitor screen.

Similar to the above, the first thing you need to know is that the camera is producing a good picture, never take this for granted. By taking the monitor (or test monitor) to the camera you should get a good picture. Only when you have **proven** that the camera is producing a **good** picture is it worth looking at other equipment in your installation.

Symptom – I know the camera is giving a good picture but I still don't get anything on the monitor.

If you are absolutely sure that the camera is feeding a good picture into the transmitter but you are still not getting a picture on your monitor via the receiver there are several possibilities to look at:

- a) Video TX and/or RX not connected correctly. Remember that a video circuit needs video & ground.
- b) PSU not suitably rated. Both the TX & RX need a 12v DC 500mA regulated power supply minimum. If your PSU is not adequately rated the units may be dragging the PSU down and reducing the voltage or even damaging the PSU. You will need to check the output voltage of your PSU with the TX and RX connected. Don't check the voltage without a load connected, as this reading is meaningless!
- c) Make sure you are not using a burglar alarm PSU. These give out a voltage of 13.8v, which is too high for the TX & RX (and camera!!) this will overheat the units and invalidate the guarantee.
- d) Is it a distance problem? Are you trying to get too much out of the product? The working environment does effect how well the CCT197/198 perform. As they operate via microwave frequencies their signal is attenuated by obstacles in its path, including people and buildings, so careful planning is needed. Don't install them in or near metal objects, or water.

Symptom – I know the cameras giving a good picture but I get a weak/poor picture on the monitor.

If you get a picture on your monitor but not a very good one it could still be that you have not wired the units correctly or you have overloaded the PSU (check voltage ON LOAD). A typical mistake people often make is a bad connection on the video or earth connection. A black & white "zebra" type fault is often the result of getting the video and ground connection the wrong way around.

Symptom – I get a picture but it's very weak I think I have a distance problem

If you think every thing is connected correctly and you get a picture but a very weak or grainy one you may have a distance problem. The first thing you need to do is to try moving the TX /RX aerial to see if this improves the picture quality. If this does improve the picture but not enough you may have to consider relocating the TX & RX so they are in their optimum line of sight configuration (see previous instructions). Steel works and foil-backed plaster board can both cause poor transmission results and this would mean that you have to carefully plan the system to minimise their effect by positioning the TX and RX outside the problem area. As a last resort with any fault finding make sure you connect the TX and RX up with a camera and a monitor in a convenient place starting at the minimum distance of 10 metres apart and slowly increase the distance and fine tune the aerial position. As you get to know the product it will greatly assist you for any onsite installation snags.

As per the R&TTE Directive (99/5/EC) the video transmitter and receiver have been declared license exempt to 1ETS300440 as and when it is used as per these instructions. Modifications to the transmitter or receiver are not permitted.

Technical Specifications CCT197 Transmitter/CCT198 Receiver

Frequency 5.8 Ghz

Channels 16

Voltage 12V D.C.

Current 500mA minimum

Video 1v pp 75 ohm

Audio 600 ohms / 10K ohms

Size 95mm x 90mm x 30mm

Connectors Video=Phono, Audio Red (Right) = Phono, Audio White (Left) = Phono



WEE/CG078355

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