

CAMLYnk[®]

wire free CCTV transmission systems

instruction manual

Camlynk Video & Data 2k Transmission System

the all new Camlynk from Laserlynk 2003 is a high quality, licence exempt system for the wire free transmission of video and data for CCTV cameras and associated products up to 2k



(CAMLYNK)

contents

2. introduction to cam lynk
3. packing list & parts identification
4. choosing a location
5. safety notes
6. mountings and connections
8. electronic transceiver enclosures
10. video alignment
14. data alignment
16. troubleshooting
17. warnings
17. contact telephone numbers
18. typical video + single data layout
19. example set up

(CAMLYNK)

introduction to cam lynk

Thank you for purchasing a CamLynk CCTV transmission system.

CamLynk systems provide high quality, free-space transmission of video (colour & mono), data and audio over distances up to 2km. They are of a modular design to aid both installation and any future servicing that may be necessary.

CamLynk systems are made to be installer friendly. They incorporate electronic installation aids, a built-in alignment system, as well as a self-diagnostic capability for assessing the systems status at any time.

It is important that both the installer and purchaser of the system read this manual. Please ensure that it is handed on to the installer prior to installation.

On completion of the work, please keep the manual in a safe place for future reference.

Further copies are available from the Marketing Department telephone 01992 573550.

(CAMLYNK)

packing list and parts identification

Video & telemetry system

4 x TXRX1

New single action pan and tilt unit. TX/RX (Transceiver) pan & tilt Head-End units with 2 x laser transmit (LDD1.0) and 2 x receive tubes (PDA1.0).

1 x VTX/DRXMB2

Transceiver electronics enclosure contains Mother Board with switch mode PSU, laser transmit module - part no.LTX1.0, video transmit interface - part no.VITX1.0, laser receive module - part no. LRX1.0, data receive interface module - part no. DRX1.0 etc etc

etc

1 x DTX/VRXMB2

Transceiver electronics enclosure contains Mother Board with switch mode PSU, laser receive module - part no.LRX1.0, video receive interface - part no.VIRX1.0, laser transmit module - part no. LTX1.0, data transmit interface module - part no. DTX etc etc etc

4 x CIB1.0

Interface box.

2 x BNCPLG1

(CAMLYNK)

choosing a location

First and foremost you will require a clear line of sight between both ends of the system. Consideration should be given to the future growth of trees, moving vehicles and passing foot traffic and anything that could block the signal. Being an optical system, any obstruction in line of sight will obscure the signal.

It is important that when selecting locations for both ends of your system, you should ensure that the structure is stable and free of any movement.

Particular consideration should be given to any structure, such as a high tower, that could be affected by strong winds. Vibration or sway could result in temporary loss of signal. If utilising towers or poles please refer to the CamLynk sales/installation department.

The Tx and Rx head-ends should be securely mounted using appropriate single bolt fixing points. Suitable mounts can be purchased from your supplier, or direct from LaserLynk.

Using two systems next to each other

When installing more than one system on the same structure, units should not be positioned immediately alongside one another, particularly if they are transmitting and receiving in the same direction. If in any doubt please refer to the LaserLynk technical department. (01952 273130)

Due to the beams spread and the reception angle, care should be taken when using two systems next to each other because interference can take place.

(CAMLYNK)

safety notes

Pay special attention to the location of the transmitter, which is a class 3-laser product. Although covered with adequate labels warning people in the close vicinity not to look into the beam, it is important to fix the transmitter in a place where maintenance workers, window cleaners and other site workers cannot accidentally look into it.



(CAMLYNK)

mounting&connections

Head-end Units - sighting

Camlynk Transceiver pan & tilt head-end units come with single bolt fixing points and should be attached to suitably rigid mounting brackets. Camlynk is universal and carry either video or data or a combination of both. A transmitter can be mounted next to a receiver on the special 2 hole mount bear in mind comment already made about mounting RX and TX together.

Head-end Units - adjustment

Care should be taken to ensure that there is enough space behind the units to view the sight slots or optional telescopic sights. Testing of the head-end units has been carried out at wind speeds in excess of 100 mph and if set correctly they will perform well in exposed areas. Adjustment is effected by single adjuster arm.

Connecting the Head-end units

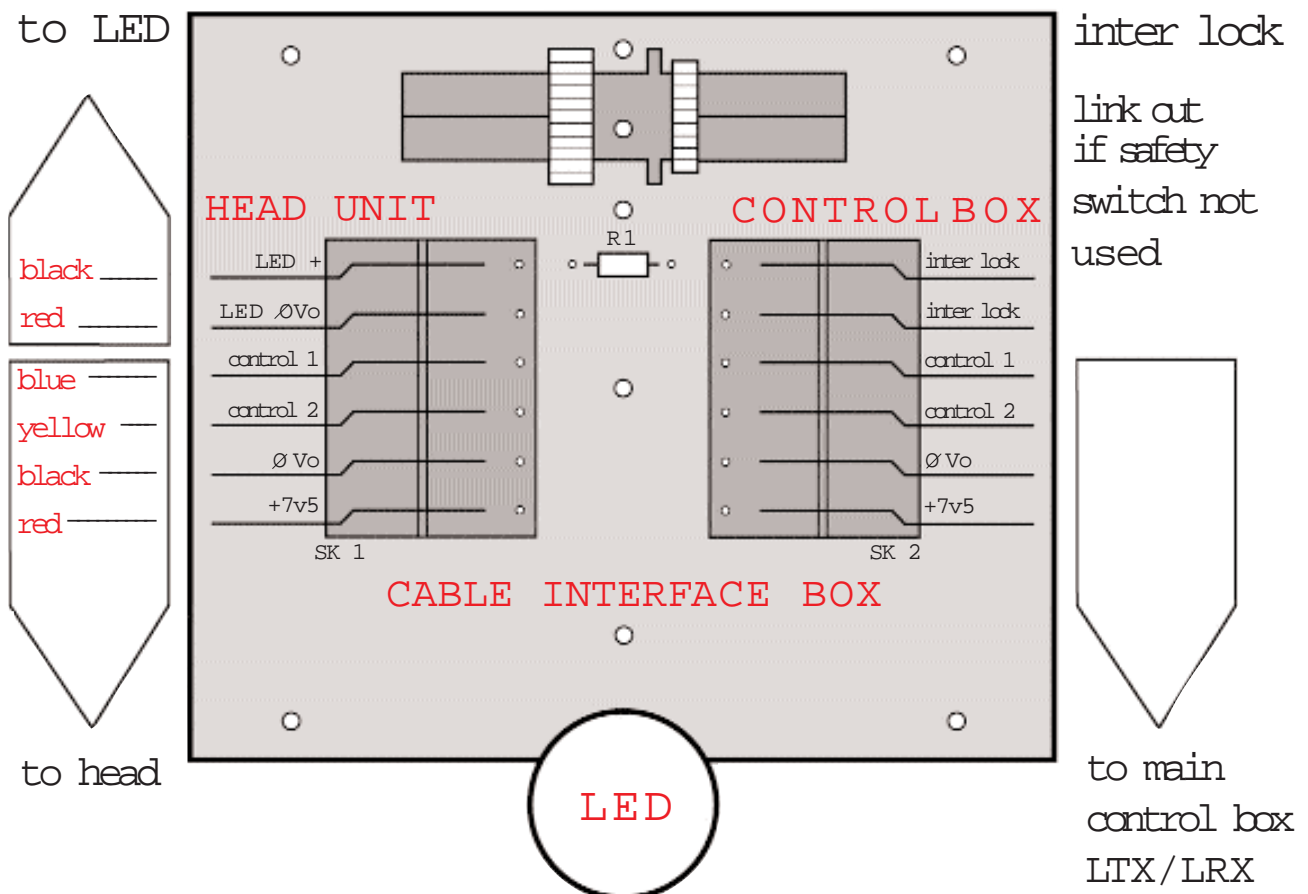
A standard 1 metre of multi-core cable is supplied ready connected into all four transmit and receive tubes. This cable should be connected into the CIB1.0 interface. The box can then be fitted to the wall close to the head end. RG59 cable and suitable good quality 4 core cable (through conduit) completes the final connection to the main electronic enclosure.

(CAMLYNK)

mounting&connections

CIB1.0 wiring instructions

Remove plugs from headers to facilitate easy wiring. Secure BNC plug and socket with tie wrap supplied.



IMPORTANT! if drilling and fixing box to wall use silicone in holes to preserve IP rating

Quick fit BNC line plug and sockets are supplied to connect RG59 cable inside the interface box. A screwed BNC plug is supplied for connection to the module in the main electronics enclosure.

(CAMLYNK)

electronics transceiver enclosures

The enclosures are to IP65 standard and can be mounted either internally or externally.

Normally wall mounted, they can also be attached to poles and towers with the addition of the optional lashing kit (IK1). Please note the comments about towers in choosing a location on page 3.

Video connection for both ends is via BNC plugs.

The data connection is via 2-core cable (data and common) or 3 core cable (balanced data and common) the cable may also have a shield/screen. The type of cable to be used should always be that cable which the data or telemetry system manufacturer advises you to use with their equipment details of which will normally be found in their equipment installation instructions.

The usual difficulties regarding mixed earths over a long distances have to be overcome. Generally the data cable shield should be earthed only at the driving end.

Input power of 90-260Vac for both ends is via the fused terminal block on the motherboard.

electronics transceiver enclosures

Mains supply

Supply to the transceiver electronic enclosures should be by 3 core cable allowing good earthing at both ends of the system.

Laser Transmit Tubes

The beam adjustment screw of the transmitter should not be adjusted without consulting the CamLynk Technical Department. Adjustment of this module was pre-set in the factory dependant on distance given when the original order was placed and which is noted on a document in the packaging.

CHECK THE DISTANCE. IF THERE IS ANY VARIATION IN THE ACTUAL OR NOTED DISTANCE OR IN THE LOCATION, CONSULT THE TECHNICAL DEPARTMENT IMMEDIATLY.

(CAMLYNK)

video alignment

Video v s Data

It is a fact of life that data transmission is more forgiving than analogue video transmission on which the system operates. Good data results can be obtained at lower power while good video requires a better quality signal so, it makes sense to start your installation with the video side of the setup.

Video alignment

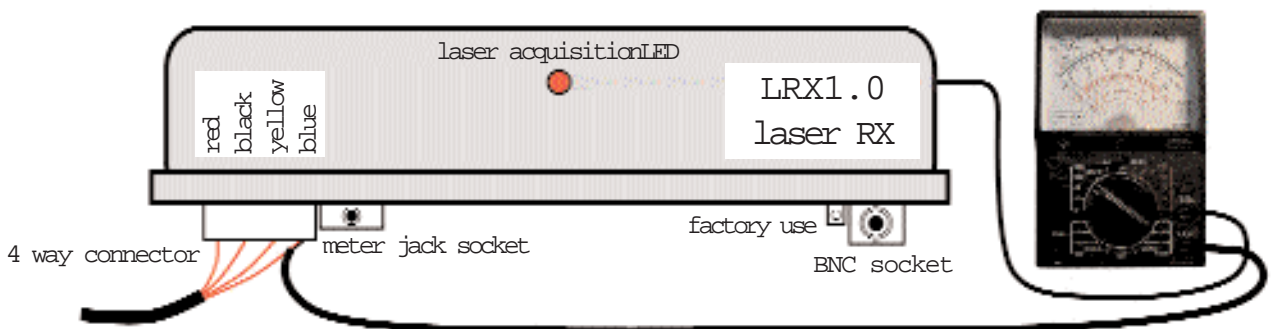
The alignment procedure is made simple, but must be carried out correctly to obtain best results. You will need to use the in built cross hair system and an installation meter.

Using our latest in-built cross hair alignment system gives a 98% accuracy, by aligning our new transmitter directory at the receiver we would expect some sort of signal. With both ends mounted in place, adjust the pan and tilt brackets. Aim the alignment slots or cross hairs of the sights of both units to the opposite ends. Initial alignment will not provide a precise alignment. During final alignment you will need to have an installer at each end with voice communication between them. After initial alignment and in the unlikely event that the red signal acquisition LED on the IRX module is lit, you will at the least be receiving a minimal signal from the transmitter. It is stressed that the red signal acquisition LED should not be used as an alignment aid but only as an indicator that minimal signal is being received during normal operation.

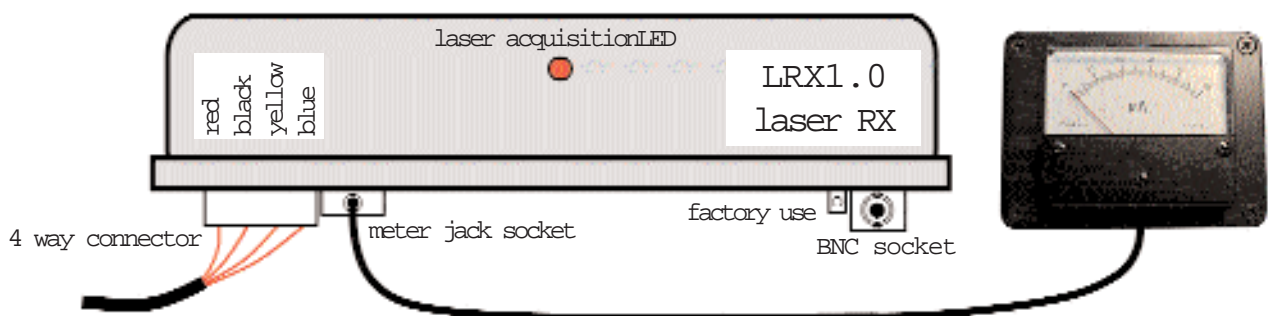
For the next step our installation meter adjustment aid (IM2) is required and is preferred. (If this is not available an analogue meter

(CAMLYNK) video alignment

For the next step our installation meter adjustment aid (IM2) is required and is preferred. (If this is not available an analogue meter or as a last resort a digital meter can be used. It is difficult to use a digital meter because the sampling rate is so slow and any change in true reading may be over before it is displayed. Meters should be 20,000 ohms per volt or greater. Connect the positive lead to Blue wire and the negative lead to earth on the LRX module as shown in the following diagram.)



If red signal acquisition LED on LRX is not lit, then no signal is detected. Connect the installation meter adjustment aid (IM2) into the jack socket on the LRX module in order to obtain a reading of received signal strength. See following diagram.



(CAMLYNK)

video alignment

IMPORTANT If you have not installed an optical link before you will be surprised at the small amount of movement needed to gain or lose signal. Think of the laser beam as a cone of light spreading out to a maximum circumference of 3 metres at 500 metres a beam set to a width of 3 metres would be on or off target with only a very small movement at the transmitter end. Our technical department are always on hand to discuss alignment if you are unsure - please phone ++ 44 (0)1952 273130.

Move the TX off line by an estimated 2 to 3 metres and slowly move it from side to side covering the area both above and below the RX. (Remember that this is achieved by moving the transmitter only a few millimetres.) This should soon obtain a signal. A signal of 3volts is the maximum obtainable signal due to the system design, 0.5 volts will give good result but, 1.5 - 2 volts is a desired good average. At this stage we are looking only for the maximum that we can obtain.

Hint if you do not receive any laser signal it may be that the receiver end is hopelessly out of line. Lining up the RX with the TX with a telescopic sight will normally allow the RX to receive sufficient laser light to get a reading.

While one person at TX adjusts the tilt of the TX head-end unit, the other person at RX calls out the meter reading (i.e. higher or lower). The object of the exercise is to position the centre of the beam on the RX unit in a vertical plane. Adjust higher till the signal disappears then, lower through the highest signal until

(CAMLYNK)

video alignment

until the signal again disappears and return higher to the position that you estimate as highest signal and therefore the centre point.

Repeat the exercise for pan so that the centre of the beam is on the RX unit in a horizontal plane. This will mean that the centre of the beam is at the centre of the RX end. This is unlikely to be the maximum voltage, the centre of the beam being more important.

When you are satisfied that the beam is centred, simply stop any further adjustment and tighten fully the locking adjustment.

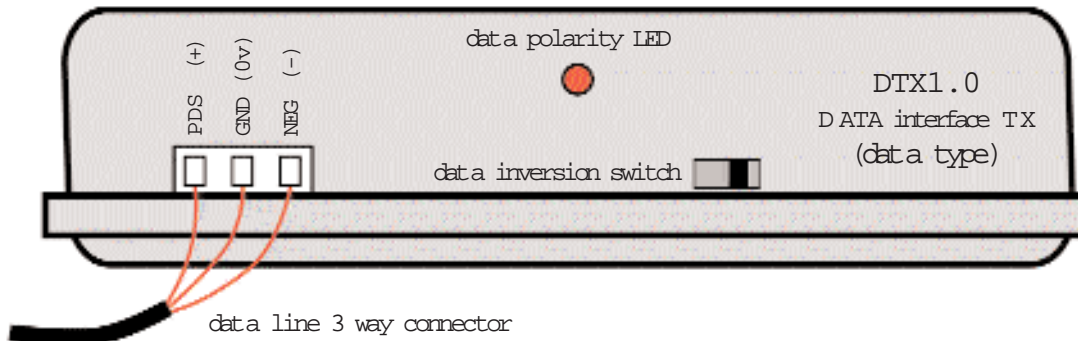
For perfect line up, you must now electronically line up the RX end. Keeping the installation meter installed, follow the same procedure outlined above but this time adjust the pan and tilt at the RX end to find the beam centre. Remember that this is unlikely to be the maximum voltage.

(CAMLYNK)

data alignment

Don't connect data line yet see following diagram.

Following the advice given under the heading video alignment, and using the installation meter adjust the data TX head end to give maximum signal at the data RX end. Do not worry if the signal reading is lower than you experienced with video alignment, simply adjust for best signal. When you have achieved best signal observe the data polarity LED on the DRX and DTX modules. This red / green LED appears centrally in the DRX and DTX modules which are identical in appearance. See following diagram.



Do not connect the data line to the system at this stage. If already connected simply unplug green sockets. Move the data inversion switch at the TX end and the colour will change at the TX end. At the same time check the RX end and if the colour changes, the TX end is talking to RX end. Note the colours may be different at both ends.

(CAMLYNK)

data alignment

With the LED now showing static green or red, connect the data line to the DTX module and observe the data polarity LED at that end. Depending on the type of telemetry system used, the LED may flicker when a command is passed or it may appear to show static green + red. It is difficult to see these changes in bright sunlight and a little shading could be useful. If there is no change and assuming that the telemetry system is switched on, try reversing the polarity of the input by reversing the wires in the green connector on the DTX module. Changes in status of the LED at the TX end will be duplicated at the RX end. This is further confirmation that the data link is working satisfactorily.

Power up that part of the telemetry system at the RX end and connect the data line to output of the DRX module. If the telemetry system does not respond and all systems are powered up, try reversing the polarity at the DRX module by reversing the wires in the green plug. Do not be surprised if commands seem to work in reverse, simply move the data inversion switch in the DRX module (see diagram above).

When you are satisfied, remember to remove the telescopic sights. They are not designed to withstand continuous outside use.

(CAMLYNK)

troubleshooting

Should your CamLynk system fail to transmit when installing or begin to malfunction at any time, you can carry out a diagnostic check by referring to the various LEDs attached to the modules contained within the enclosures.

The modules are identified as follows, with an explanation of the LED function:

MB2 (Mother Board)

This is common to both Transceivers and has two Indicators. The mains indicator is positioned bottom left and the 7.5V output supply LED is mid-way right side. Both should be permanently on.

VITX modules

Red LED = Will be on when there is a video input

VIRX modules

No LEDs

LTX module

Green LED = laser drive indicator. Will be off if BNC is disconnected or faulty.

Red LED = laser power indicator. Will only be on when laser is operating within acceptable parameters.

LRX module

Red LED = This is a signal received indicator and will be on when the head-end is receiving a carrier signal. It is not an indicator of signal strength.

DRX or DTX modules

Red/Green LED = Will be on and twinkling when data is passing through. A command may have to be sent to see this effect.

(CAMLYNK) **warning**

CamLynk transmitters use a class 3B laser, which should not be viewed directly.

Do not attempt to remove the inner tube of the transmitter when connected to PSU.

Do not look into the lens of the transmit unit for any reason.

Do not view the transmitter through the telescopic sight at a distance of less than 50 metres for extended periods of time.

If local safety rules require the laser beam to be isolated when untrained personnel enter a particular area, a suitable isolation switch can be wired into the control box plug at the positions marked inter lock . The link (fitted as standard) must first be removed.

contact telephone numbers

Technical department 01952 273130

Sales & Marketing 01992 573550

(CAMLYNK)

example set up

