

# PSi

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The PSI guide to making installations more cost-effective

# BASIC SURVEILLANCE JUST GOT A WHOLE LOT EASIER!

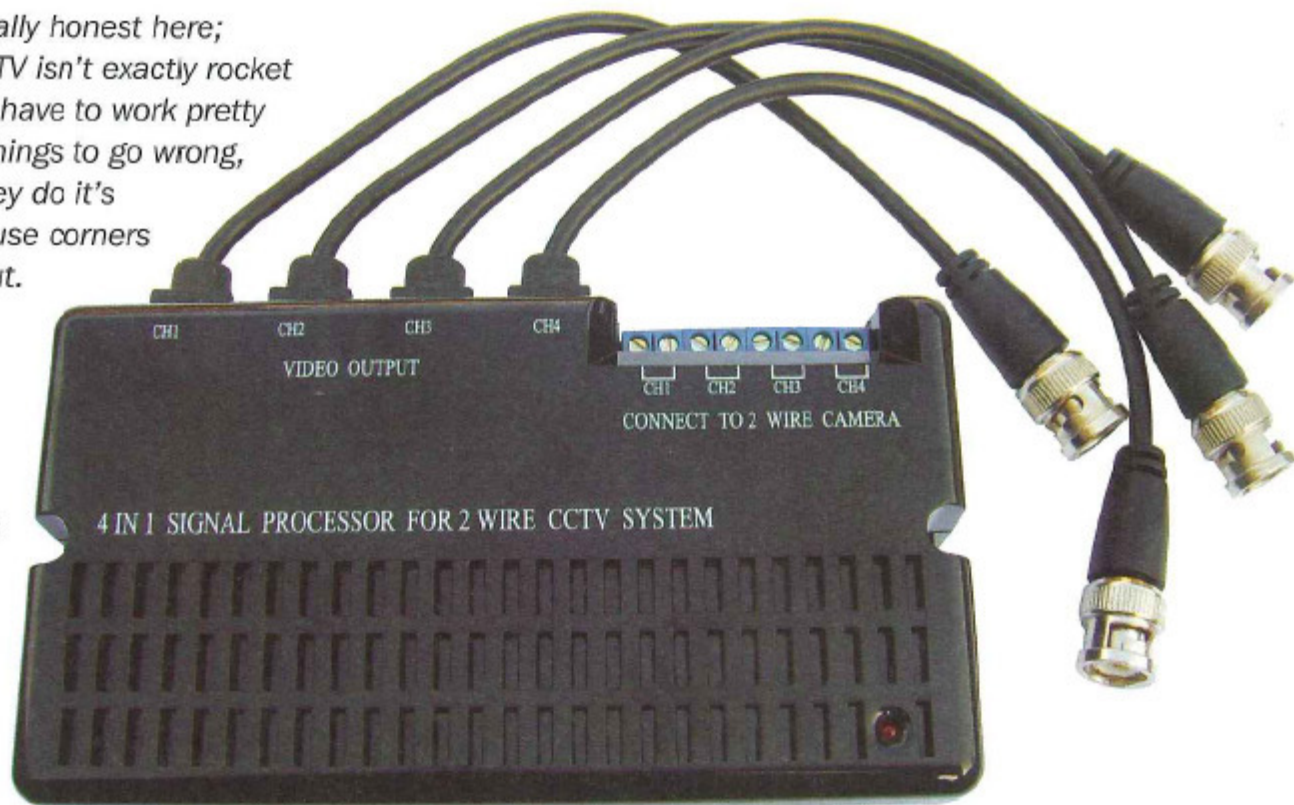
Let's be brutally honest here; analogue CCTV isn't exactly rocket science. You have to work pretty hard to get things to go wrong, and when they do it's usually because corners have been cut.

Whilst the install might be simple, it also involves one of the biggest pains associated with CCTV, and that is cabling. Coax does a job, and does it

reasonably well, but it's not the best cable in the world to work with, which is why the universal 4-way CCTV signal processor kit from Leeds Electronic Engineering is so interesting.

Look at any new product being launched into the security industry, and there will be a few claims that are made as standard. 'Easy to install' is one, and 'cost-effective' is another. The manufacturer will probably be a 'market-leader' of some description, and even where the product is brand spanking new, it will be 'proven in the field'! Now, this isn't to say that these descriptions are wrongly applied; sometimes they are accurate. However, they're so over-used as to have lost their impact. This makes it difficult for installers who are looking for an easy-to-install cost-effective product that is proven in the field from a market-leading manufacturer.

When the universal CCTV signal processing kit from Leeds Electronic Engineering first came to our attention, we recognised it for what it was; a cost-effective solution that is easy to install. Fair play to Leeds, they didn't claim it was proven in the field or that they were a market-leader, but



they did flag it up as revolutionary. Short of wearing a beret and sporting a handlebar moustache, we were not 100 per cent certain that this wasn't another hype job, so we got our hands on one of the kits.

## Product design

The Clo4 is billed as a universal CCTV signal processing kit. Essentially, what it does is supply power to, and transmit video from, any attached 12V DC camera over basic bell cable.

Now, that might not sound too revolutionary, but the more you think about it, the more it makes sense.

The kit includes a master unit, which is located with the DVR, four connectors (Leeds refers to them as mixers) and a PSU. The quoted range is up to 500 metres depending upon wire used and the camera's specifications (more about this in a moment). Now, consider the benefits of this device. Firstly, there are two





*Suddenly you realise that the CIO4 kit could actually be cost-effective, in that on a pound-for-pound basis, installations will be cheaper, easier and faster.*

savings to be made with regard to power. There is no requirement for fused spurs adjacent to each camera location, and there is no need to purchase PSUs for each camera. For many installers, that would be enough of an incentive to consider the CIO4 as an option.

The other major benefit is with regard to cabling. Now, coax is a marvellous thing. It delivers all the bandwidth you need for real-time high resolution video. For years it has been the backbone of CCTV solutions, and it will be used widely for many more years to come. However, it's not the best cable in the world to work with. It's heavy for a start. It's tiresome to pull, and tiresome to terminate. It has a very low bend radius and it fills ducting faster than a banker's hand grabs tax-payers' money.

Two-wire cable (AWG26, 24, 22 and 20 can be used) is light, flexible and low-cost. It also relies on basic screw connections. Additionally, if you use a cable with multiple pairs, you can run a single cable and 'break out' pairs for each individual camera if the cable run passes multiple units. Again this reduces costs further, and simplifies installation.

With regard to range, it depends upon the wattage of the camera and the cable used. With AWG20, 500 metres can be achieved with cameras of 3W or less, and 300 metres for cameras of 3-4W. AWG22 deliver 500 metres with cameras under 2W, 400 metres for 2-3W and 200m for 3-4W. AWG24 gives 500 metres for less than 2W, 300 metres for 2-3W and 100 metres for 3-4W. Finally, AWG26 has ranges of 250 metres for under 2W, 200 metres for 2-3W and 50 metres for cameras of 3-4W.

Suddenly you realise that if the unit delivers, then it could actually be cost-effective, in that on a pound-for-pound basis, installations will be cheaper, easier and faster. Given the current economic situation, it's not something to turn your nose up at!

### Installation and performance

As we mentioned at the start of this test, the term 'easy to install' doesn't really mean a lot. However, in this case, there really isn't a lot to the installation at all. The control unit is supplied with four connected flyleads to attach to the BNC inputs on the DVR. These are of a fixed length, which means the unit needs to sit on top of the DVR. This isn't a real issue as the type of application the kit is aimed at is unlikely to use racks!

The control unit is powered by a supplied PSU with a modular plug. Simply plug it in and the unit is powered up. There are screw-type connections for the twin cable connections to the cameras. At the camera end, the cable simply connects to the mixer, which has modular plugs for power (you can simply cut off the plug if the camera has screw connections for power) and video out (BNC). That's it; there are no settings to make.

Once up and running, the video images are clean and sharp with good colour rendition. There's no real difference to viewing the pictures on coax links, even with all four channels running. If you push the cable runs to the maximum, you see a very small amount of interference, but only if you take liberties!

### In summary

The manufacturer states the CIO4 is revolutionary; it might be an overstatement. However, it is clever and it does work, and it is certainly easy to install. That leaves us with the device's strongest point; it's cost effective. If you want lower cost CCTV solutions, then this device is certainly worthy of

### SPECIFICATION

**Model:** CIO4  
**Supplier:** Leeds Electronic Engineering  
**Type:** Universal CCTV signal processing kit  
**Video Capacity:** 4 Channel  
**Video Output:** 1V p-p 75 Ohm x 4  
**Video Input:** 1V p-p 75 Ohm x 4  
**Power Input:** 32V DC  
**Power Output:** 12V DC x 4

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### PSI RATINGS

Product Design	■■■■■■■■□□	Instructions	■■■■■■■■□□
Build Quality	■■■■■■■■□□	Features and Functions	■■■■■■■■□□
Ruggedness	■■■■■■■■□□	Value for Money	■■■■■■■■□□
Ease of Installation	■■■■■■■■□□	Video Quality	■■■■■■■■□□
Ease of Set-up	■■■■■■■■□□	Overall Performance	■■■■■■■■□□