

OgierElectronics

Analogue v Digital

When real time, broadcast quality video is required with no latency, analogue transmission is often the ideal solution. Digital can provide high quality video but time is required to undertake the compression and decompression processing. The delays introduced by our digital equipment are as low as possible at less than 50 mS, but nevertheless it is not true real time. Similarly although digital DVB-T provides high quality images, far higher than that possible with IP based systems, some of the video is nevertheless discarded, thus inevitably some of the detail will be lost.

The conclusion from this is that analogue transmission is generally particularly applicable to safety critical monitoring systems in railway applications where no significant delays or loss of quality can be accepted. They are also applicable to long-range camera systems where loss of clarity or resolution would be unacceptable because it would necessitate even longer focal length lenses, or to city centre systems where real time operation is essential for the efficient tracking of targets.

The major disadvantage of analogue is that it has a very limited non-line of sight capability. Thus if there is no line of sight between the camera and the Control Centre, it will be necessary to install repeaters or relays. Digital links on the other hand, if they use the lower frequency bands, have a non-line of sight capability albeit at 10% of their line of sight range, and therefore are ideal for mobile and transportable applications.

The other disadvantage of analogue is that the bandwidths are generally higher than those required for compressed digital transmission, although in practice within the frequency bands used by our equipment, several hundred cameras can be installed in a medium sized town without any limitations or interference

Thus in general, the digital links are preferred in mobile or transportable systems where lines of sight cannot be guaranteed or if there are many hundreds of cameras located within a few square kilometres of one another.

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