



Optimizing long-reach, real-time HD video transmission

The challenge

High Definition (3G/HD) video is transmitted at serial data rates of 2.97 Gbps or 1.485 Gbps; these rates are good for short distances, but for applications which require long distance transmission, the maximum supported cable length may not be enough, or the cost of the high-quality cable required may be prohibitive.

The solution

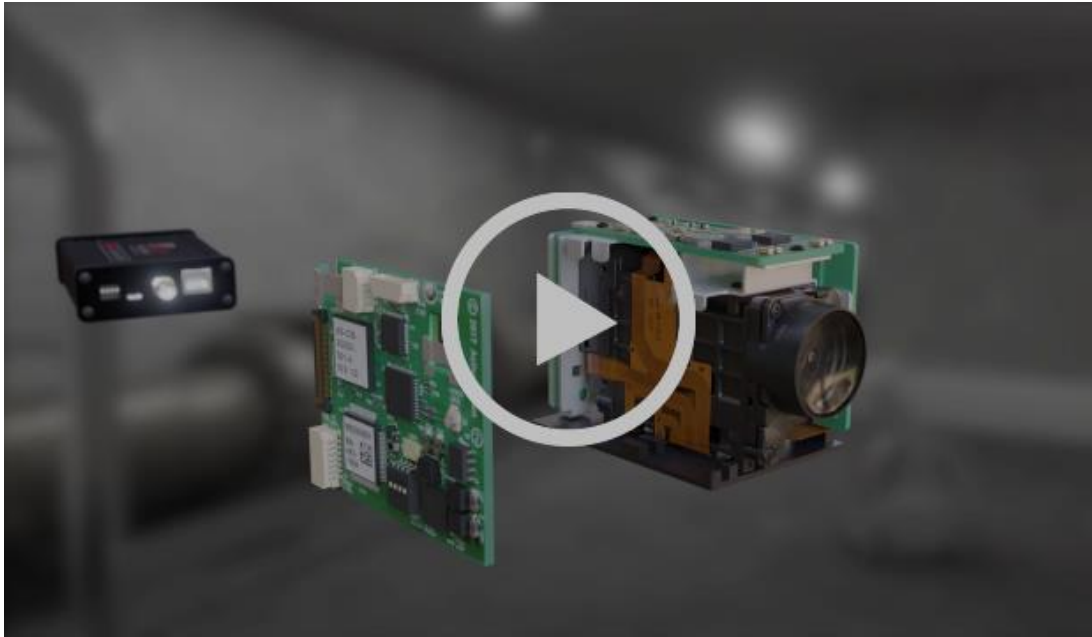
The answer is to compress the video and reduce the data rate in order to increase the maximum cable length that can be used and/or enable the use of lower cost cable. High-Definition Visually Lossless CODEC (HD-VLC™) compresses the video to 270 Mbps (HD), or 540 Mbps (3G) and has been proven to **extend cable length by a factor of three** (compared to standard HD-SDI) with no image artefacts or reduction in resolution. These rates are the same as standard definition video, enabling the use of lower cost cables (e.g. twisted pair or low-cost coax cable) over distances that will not work with standard 3G/HD video transmission.



Active Silicon has developed the Harrier range of [camera solutions](#) to support **real-time 3G/HD video transfer over greater cable lengths** and multiple slip rings.

Our [Harrier 3G-SDI Camera Interface Board](#) for autofocus-zoom cameras, and [Harrier SDI adapter](#) for USB/HDMI/SDI video output, support HD-VLC™ for applications that require extended cable length or lower cost 3G/HD video transmission. This technology is supported by a well-established semiconductor supplier, delivering a dependable and consistent solution. The advantages of using HD-VLC™ include:

- Ability to use **coax cables up to 700m**, twisted pair cables up to 150m and fiber optic cables over many kilometers.
- Compact hardware, allowing the **smallest possible components** to be produced.
- No additional latency is introduced to the system, so **images are transmitted in real-time**.
- **Superior image quality**.
- Multiple HD/Coaxial cable **slip rings** can be used.



Watch Harrier in action

See how the Harrier series is optimizing long-reach, real-time HD video transmission in pipe inspection.

Applying the technology

The Harrier solution enhances the transmission of digital video for **inspecting pipes, industrial ducts, nuclear facilities and other industrial environments**, allowing cable lengths not reached before, and even accommodates the addition of several slip rings in series.

The interface board enables the transmission of real-time, high-quality digital video in a range of imaging and surveillance applications. Video captured in the operating theatre can be used in live observation and teaching, advanced **surgical imaging** including AR programs or recorded for viewing at a later date. Similarly, applications using **robotics, drones, ROVs, low vision aids, endoscopes and microscopes** will also benefit from this compact and cost-effective board.

[Advantages of Harrier technology](#)

In addition to a board-only version, the Harrier 3G-SDI interface board can be supplied

mounted to a [Tamron MP1110M-VC](#) camera or [Sony FCB-EV7520A](#) camera, with all the required cables included. These camera solutions feature:




- Exceptional optical zoom function.
- Support for all camera HD-SDI and 3G-SDI video modes up to 1080p or 3 Gbps.
- Simultaneous high quality analog and digital video (720p50/60).
- Full screen analog image on 16:9 and 4:3 monitors.
- HD-VLC™ technology supports extended cable lengths.
- Cost-effective solution.

The full description and spec for the Harrier interface board are on our [website](#). You can also read our [whitepaper](#) on HD long-reach video transmission technologies.

[Contact us to find out more](#)

[Active Silicon](#) is a leading manufacturer of imaging products and embedded vision systems. If you would like to stay informed of upcoming events, products and news in general, then please follow us on one of our social media channels below.



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