

VISLINK – UltraCoder 4K Capable 4 Channel H.265 Encoder



UltraCoder 4K Capable H.265 Encoder

UltraCoder Half Rack Width Encoder with ASI & IP In and Outputs

19" x 1RU Half Rack Width <3kg. 25% of size and fraction of the weight and power consumption of competitor units.

BASE UNIT – 1 x H.265 and 1 x H.264 SD 4:2:0

8-bit encoding

SD/HD SDI with embedded Audio Input Only

H265 - 8 pairs of AAC Compression or Dolby Pass-through configurable between Encoders # 1 to #4

H264 – 2 pairs of MPEG L2

H.265 SD 4:2:0 Upgrade per Channel

Adds up to 3 more H.265 Channels

HD 4:2:0 Upgrade

for H.264 channel

SD/HD 4:2:2 Upgrade

H.264 channel (8-bit)

Each H.265 channel (10-bit). Also enables 10-bit 4:2:0 encoding.

ASI Mux License

MUX License enables Multiplexing of all enabled H.265 channels with H.264 channel, External ASI and ASI stream decapsulated from IP input)

BISS 1/E Encryption License

per encoder. For scrambling in 4K Operation Encoder #1 must be BISS enabled.

4K 4:2:0 Video Input Upgrade

to enable use as 4K H.265 Encoder (4 x H.265 Channels must be pre-enabled and Encoder #1 must have H.265 HD License pre-enabled). Uses 4 x 1080p inputs – 2 mini-BNC per SFP



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Encoder #1 will also need H.265 HD License pre-enabled.

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H.265 Video interface via small form-factor pluggable (SFP) connectors which can be configured as Dual Coax 3G, Single Coax 12G, HDMI or Fibre by the user. Note: Quad HD requires 2 x Fibre SFP connectors). These are registered to Vislink so only SFP's purchased from Vislink will function.



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BISS Encryption can be applied to each Encoder but not external ASI Inputs. Encoder 1 requires BISS if BISS is to be used with 4K Video

UltraCoder 4K Capable H.265 Encoder

Licence options

H.265 #1	H.265 #2	H.265 #3	H.265 #4	H.264
4K	-	-	-	-
HD	HD	HD	HD	HD
	SD	SD	SD	SD
422/10bit	422/10bit	422/10bit	422/10bit	422/8bit
BISS	BISS	BISS	BISS	BISS

IP Video In
IP Video Out
IP Data In
IP Data Out

UltraCoder 4K Capable H.265 Encoder

REAR PANEL LAYOUT



SFP Modules

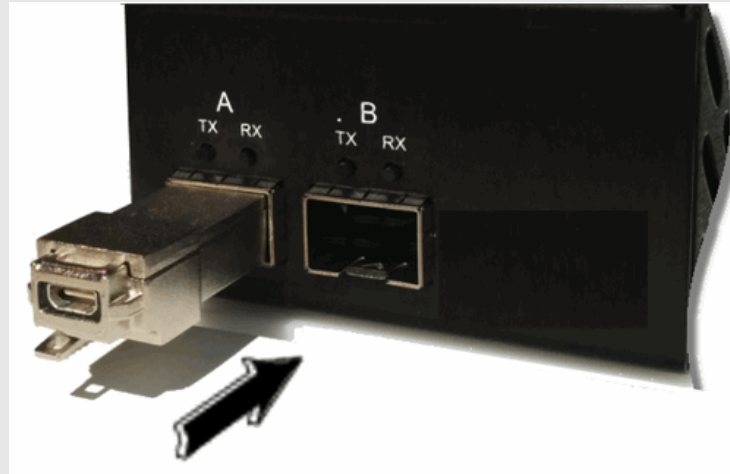
- Replacement Video Interfaces
- 2 x Dual 3G Mini BNC (fitted to base unit)
- Option Single BNC 12G BNC
- Option Dual Fibre 6G for 4 x HD Input
- Option Single Fibre 12G Input for 4K Input
- Option Mini HDMI

H.265 Video uses SFP connectors which can be changed from coax to HDMI to fibre by the user. These are registered to Vislink so only SFPs purchased from Vislink will work.

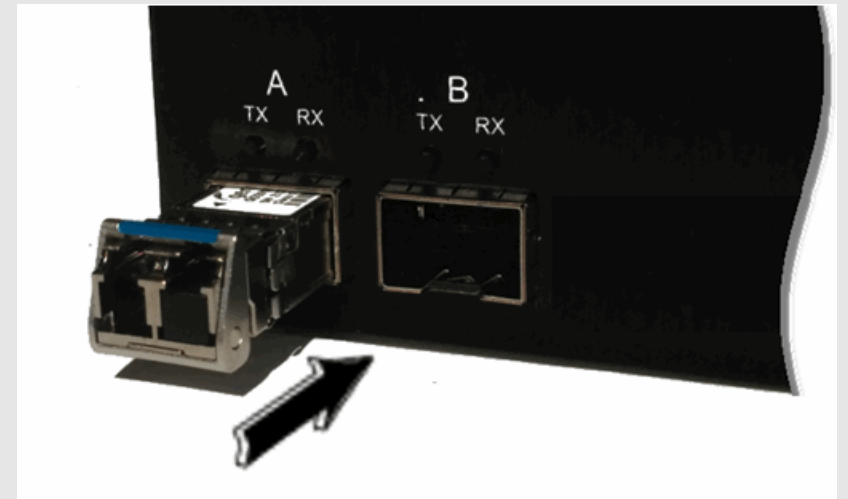
UltraCoder 4K Capable H.265 Encoder



SDI Coax Video SFP
support speeds from
50Mbps to 12Gbps
(12G-SDI (UHD-SDI)).



HDMI Video SFP
converts an HDMI v1.4
signal to 3G-SDI, HD-SDI
and SD-SDI signal



SDI Fiber Video SFP
support speeds from
50Mbps to 12Gbps
(12G-SDI (UHD-SDI)).

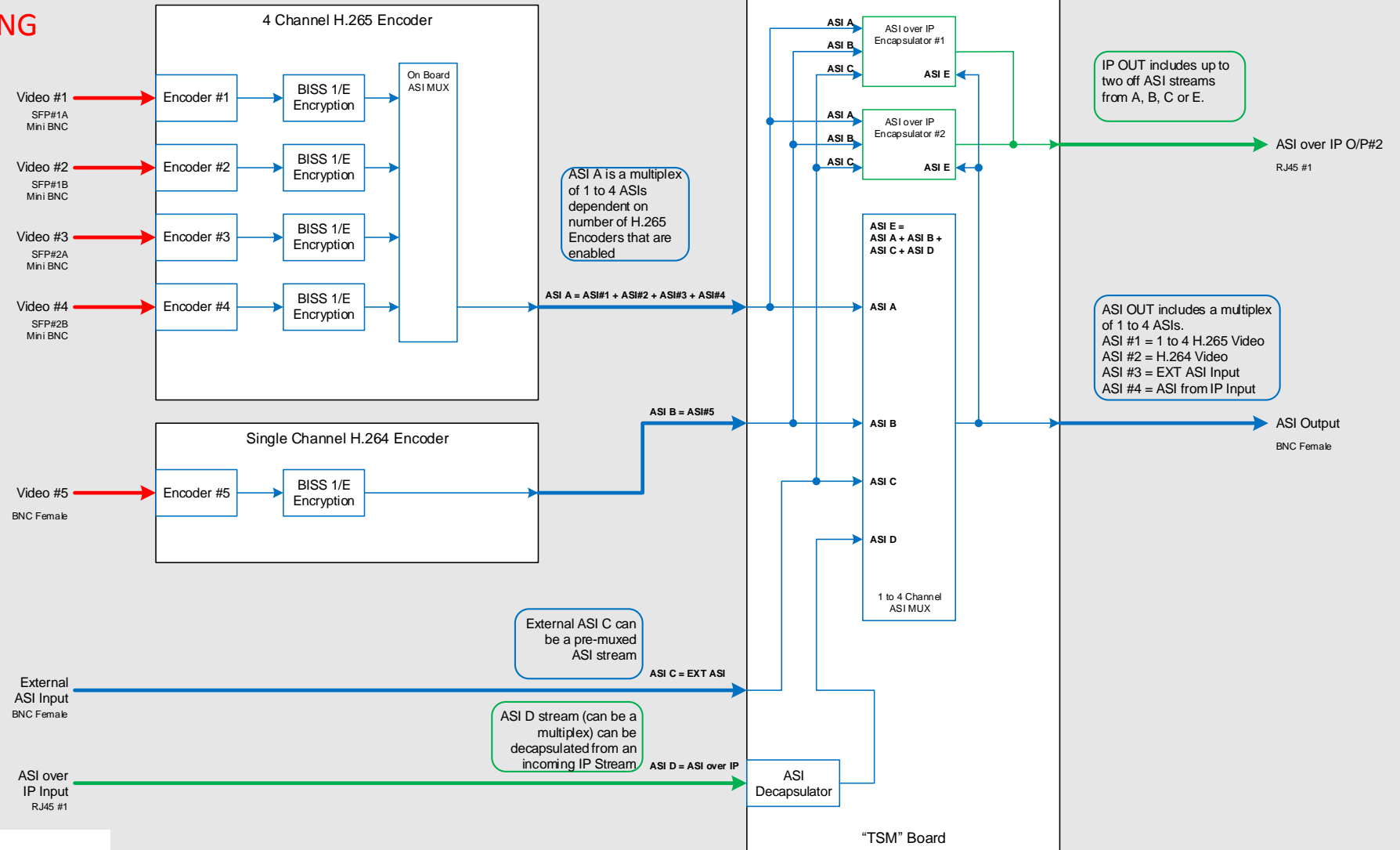
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ASI MULTIPLEXING AND ROUTING

YSLBK

Signal Key

- Video (Red line)
- ASI over IP (Green line)
- ASI (Blue line)



UltraCoder 4K Capable H.265 Encoder & L-Band Modulator

The UltraCoder with integral modulator will be a different physical unit

Note: UltraCoder will not be field upgradable

Requires installation of new Control PCB and L-Band PCB

Optional DVB-S2 Modulator

DVB-S2 QPSK as standard

950-1950MHz Freq Range

DVB-S2 Licenses

DVB-S2 8PSK

DVB-S2 16/32PSK

Hi Stab 10MHz Ref. enable

H/W fitted with Modulator option. License to enable use over TX L band cable

HPA Control



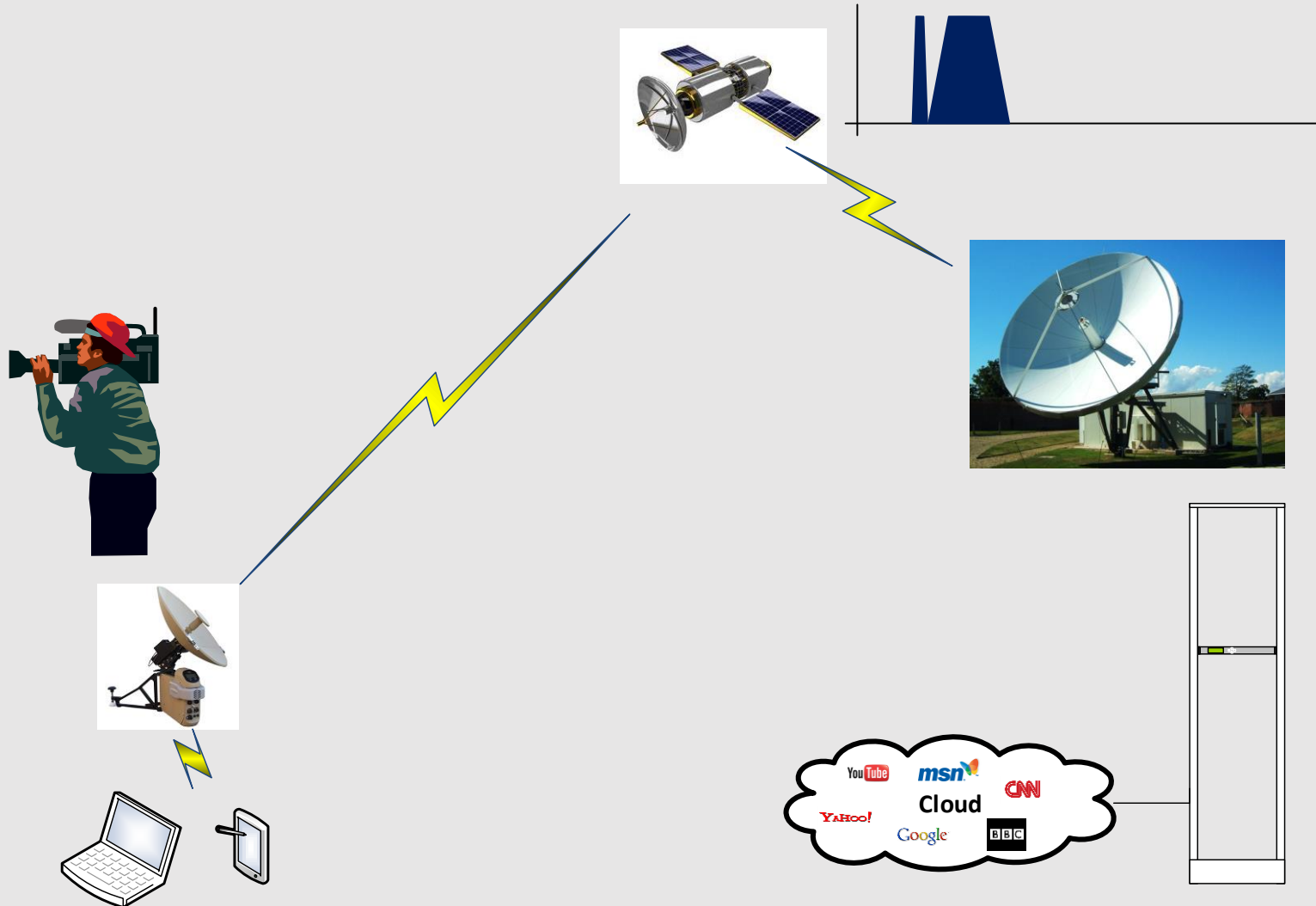
Satellite IP Systems

Vislink Solutions



Point to Point – Video and Data

VISLINK



The Traditional Approach

Traditionally, broadcasters have used a separate serial or IP modem combined at L-Band to give the two-way communications facility:

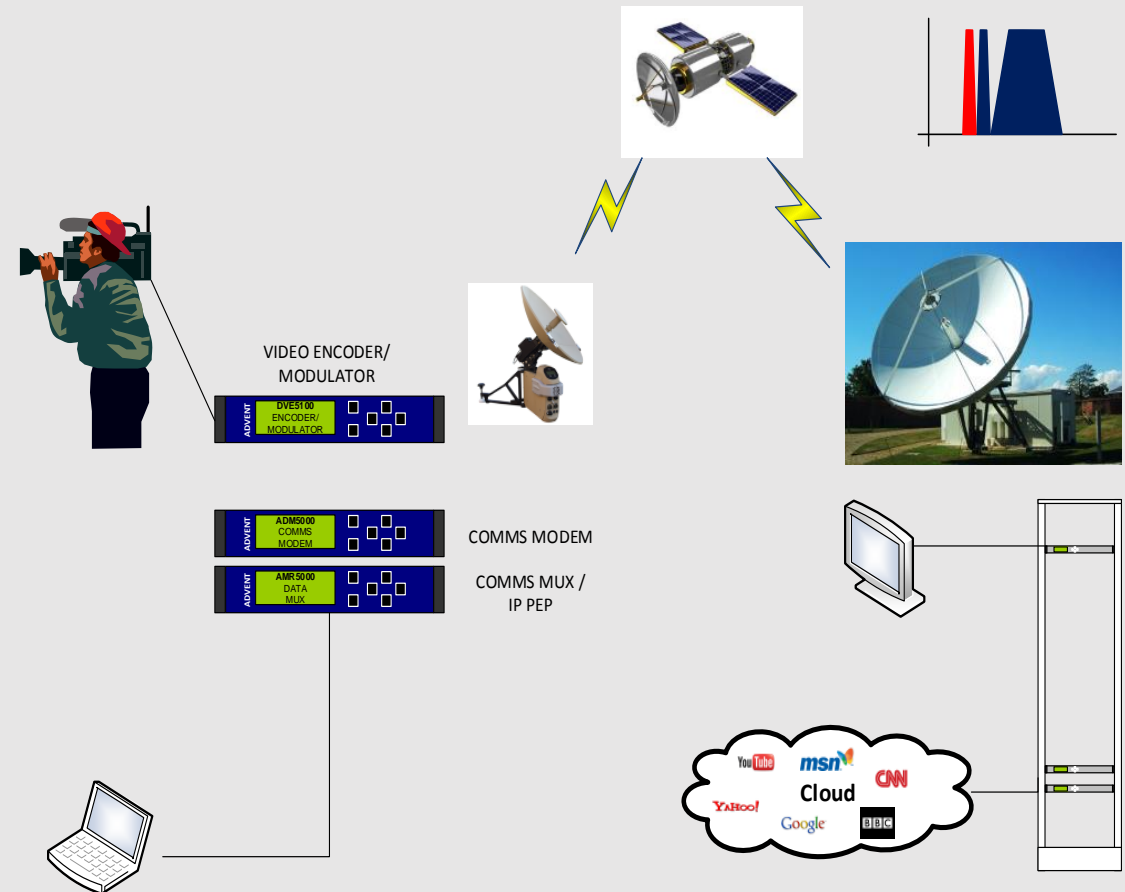
Pros:

- Allows comms carrier to be initiated before the main video carrier if required.

Cons:

- Inefficient in bandwidth due to carrier roll-offs.
- Inefficient in power due to multi-carrier back-offs.
- Does not scale well to multiple remote terminals.

Appropriate in large SNG applications where transmit power and bandwidth considerations are not primary.



The IP Modem Approach

More recently organisations have begun to stream video over an IP Modem:

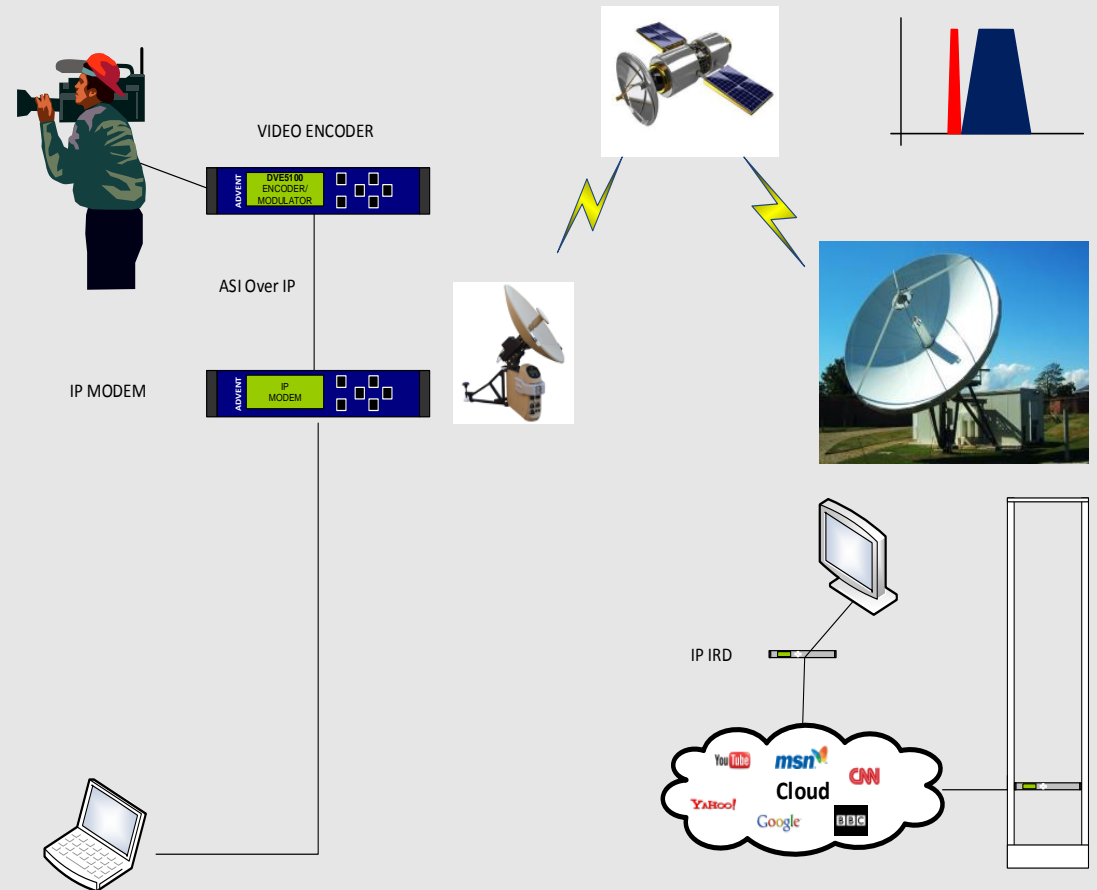
Pros:

- Single carrier required in each direction.
- TCP acceleration often implemented directly in the IP modem.

Cons:

- Inefficient in bandwidth due to packetization overhead.
- Depending on technology used, video routing at the hub may result in long latencies.
- Video tends to suffer from jitter.

Appropriate if the primary purpose is IP comms and video is a secondary requirement.



The Vislink Approach

VISLINK

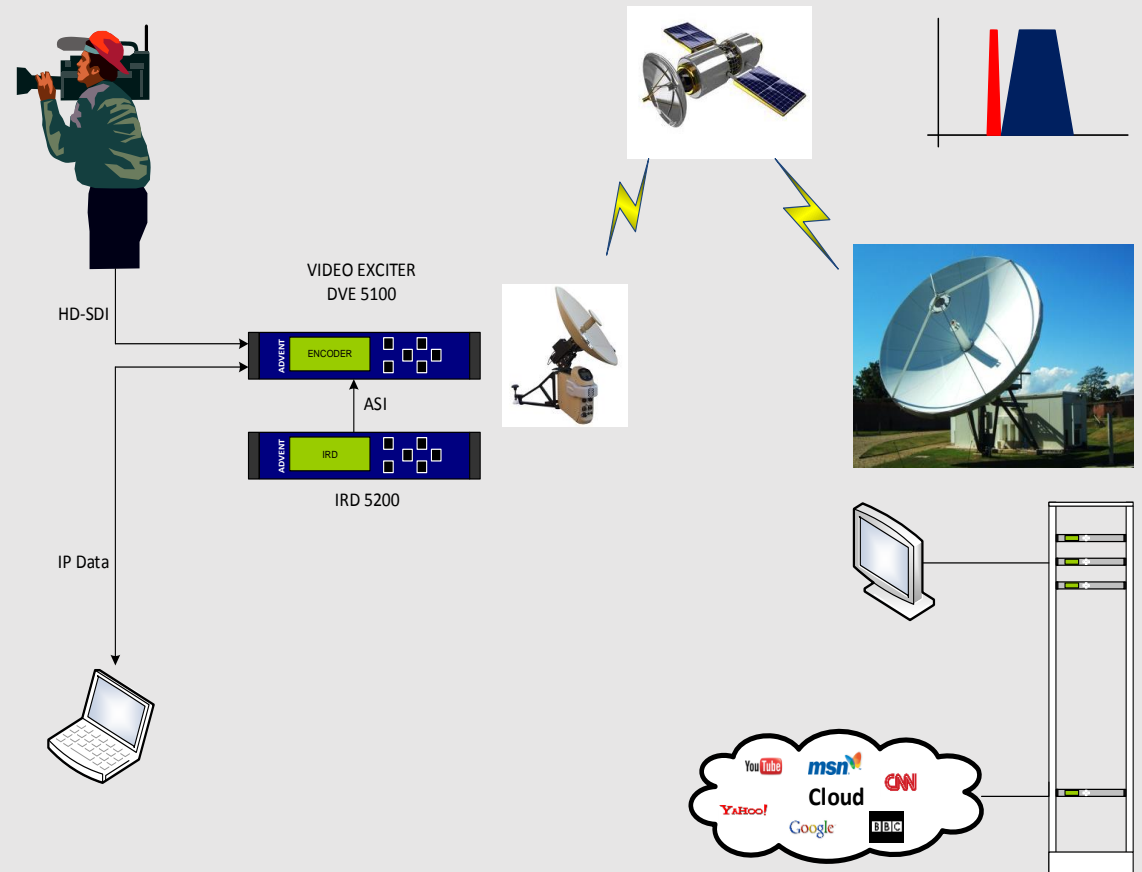
Almost everything needed for IP data already exists in Vislink equipment:

DVE5100:

- Splits IP Packets and Encapsulates them into ASI Packets.
- Remuxs the result with the Video stream for transmission.
- Decapsulates and reassembles IP packets from ASI stream received from IRD.

IRD5100:

- Receives the return signal and sends the ASI stream to the DVE.



System Gateway Server - SGS5000

VISLINK

Provides:

Wireless Access Point.

IP Router.

DHCP server, i.e. connect laptop without having to set static addresses.

WAN port, connection to upstream network of any kind.

Single Board Computer.

System Navigation Page.

Gigabit Switch – 6 ports available.

Can be used standalone i.e. just in the truck/Mantis system.

Why this matters:

The system is user friendly for non-technical users, e.g. you just connect to the Access Point or connect an Ethernet cable.

Prerequisites:

None.



1U ½ width chassis or MSAT integration

IP Optimization Pack

Provides:

Based on XipLink technology. Compliant with SCPS-TP and iPEP standards.

QOS and Rate Control with Traffic Shaping.

TCP-IP Acceleration with Connection Fast Start – Overcomes the delay/bandwidth product limitations.

Header / Payload Compression – Increases Bandwidth efficiency.

Packet Coalescing – Reduces packetization overhead with small packet connections such as VOIP.

Why this matters:

This allows the Terminal to be used as an efficient IP Modem, extending services such as VOIP/Intercom and Network Access for connection to an News Room Computer System or other Internet Service.

Prerequisites:

SGS5000 in Truck/SGS equipped MSAT.

Xiplink Hardware Appliance at Hub.

Recent DVE at Hub.

Connectivity Pack

The logo for VISLINK, featuring the word "VISLINK" in a bold, sans-serif font. To the right of the text is a large, stylized letter "V" composed of thin lines.

Provides:

Connection to predefined networks e.g. Studio LAN or Vislink Customer Support with:

Automatic VPN Dial-in.

Via: USB Modem, Public Wi-Fi or Satellite/Microwave Data Link.

Why this matters:

Engineering Control and Support can be given to Journalist/Cameraman crews remotely from the studio, without the Satcom link established. Extends services such as VOIP/Intercom and Network Access for connection to NRCS.

Prerequisites:

SGS5000 in Truck/SGS equipped MSAT.

Complimentary Options:

IP Optimization Pack, reduces overhead traffic when Bi-Directional communications available.

SGS5000 in Studio.

File Transfer Pack

Provides:

Store & Forward File Transfer Capability.

Multimode File Transfer:

Unidirectional-Best Effort, i.e. when there is no return path, slower due to FEC Overhead.

Symmetric, when there is a return path via satcom link.

Asymmetric, return path via USB Modem/Public Wi-Fi etc.

Why this matters:

Enables Non-Linear Workflows over Satcom, regardless of what Comms are available on location.

Prerequisites:

SGS5000 in Truck/SGS equipped MSAT.

SGS5000 at Hub.

Recent DVE at Hub.

Complimentary Options:

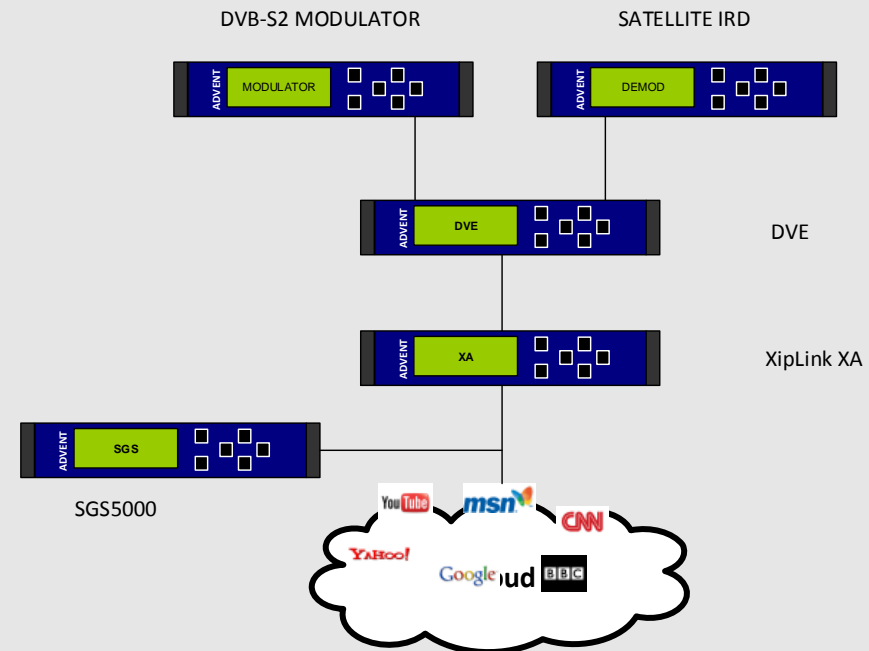
IP Optimization Pack.

Connectivity Pack.

Hub Infrastructure

The requirements for additional hub infrastructure are minimal:

- A satellite IRD. This can be the same IRD used to receive the video as long as it can output the transport stream as ASI or IP.
- A DVB-S2 modulator. This can be an existing modulator as the return IP data can be remuxed with an existing signal.
- Vislink DVE. This packetizes the IP packets into a DVB-ASI transport stream for transmission and performs the reverse for the receive signal. The DVE can, of course, be used as the modulator and can be used with or without the encoder.
- XipLink Appliance. This performs the hub end optimizations. One hub appliance can support many remote terminals.
- SGS5000. Optionally provides the hub end for the File Transfer Pack.



Point to Point USPs

- Vislink are Modem Agnostic. We have the ability to integrate many different types of Point to Point data modems into the MSAT or traditional flight case/vehicle mount systems.
- The ability to transport IP Data over ASI not only allows a customer to use an extremely efficient means of transmitting IP Data and Video at the same time but it also allows them to UPGRADE their existing video terminals to full IP Data capability without having to add a separate comms modem.

Any Questions?

VISLINK

