

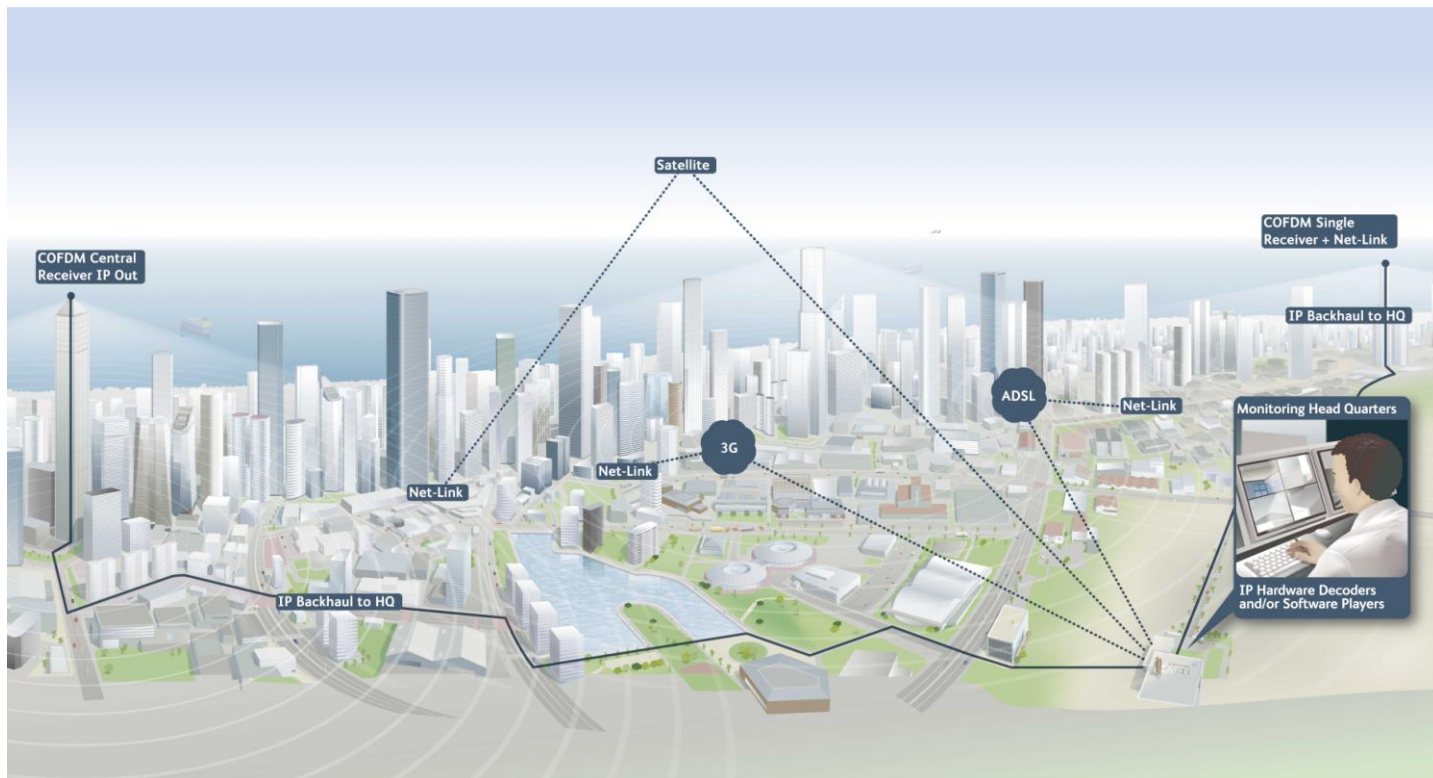
# Netstream IP Solutions

COFDM – Video, Audio Telemetry and IP Products

# COBHAM

September 2011 Data Sheet

The most important thing we build is trust



## Introduction to Cobham Surveillance NET-IP products

Cobham Tactical Communications and Surveillance has designed a range of products with Cobham technology at their core (under the common name of NET-IP) that allow the secure transmission of video data across IP networks. Distribution of high quality video data across real-world IP networks is non-trivial, because typically networks are restricted in terms of capacity and may contain security features that prevent such transmissions. The following brief guide is aimed at helping customers understand these issues and select appropriate products. For more detailed information, contact Cobham, and a training course can be arranged.

### What is Streaming Video?

The transmission of compressed video across an IP network is often known as 'streaming' video and can vary from full frame rate high quality to reduced resolution low quality (often called 'thumbnails'). Streaming video connections can be point-to-point, going from one source to one receiver (uni-cast) or from one source to multiple receivers (multi-cast).

### Private Networks v Public Networks

IP Networks can be either private networks, operated by a single organisation (usually described as Private LANs or WANs - Local Area or Wide Area Networks), or public networks, where the capacity is shared between many users (the internet or 3G networks are typical of public networks).

In a private network such as those operated by many police and security customers, the capacity available on the network is typically 10 to 100Mb/s and the network is rarely operated close to this capacity.

In a public network the capacity is usually purchased by the user on a 'pay per use' scheme, and the capacity is typically very limited and is contended in nature. The capacity on contended networks is both limited and variable. Normally, 200kb/s is available on average, but this might vary at times from 0kb/s to 500kb/s. This limited, but variable, capacity makes streaming video of any quality very difficult.

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## Uni-cast v Multi-cast

Private networks will often allow multi-cast transmissions, but this may require intervention of the network controller to configure routers and switches to allow multi-cast video streaming. Public networks, on the other hand, rarely allow multi-cast transmissions.

## Cobham Net-IP Products

Cobham Surveillance produces two types of IP products - IP video streamers and IP video receivers.

## NET-IP Products

### Cobham NET-IP video streamers

The Netstream video streaming device is suitable for private networks only, whilst Net-Link is suitable for public and private networks alike.

### Netstream

This can be installed as an option to some Cobham receivers, including the SOLO4 receiver, the Central Receiver and the new PRO-RX and NanoVue receiver products. In some receivers this is a software option, in others it requires the installation of dedicated hardware - contact Cobham for details. The Netstream option allows receivers to stream multi-cast high quality video onto IP networks. Because of high capacity and the multi-cast nature of the transmission, the Netstream option will only work on private networks. Typically, it requires 1.2 to 4.8Mb/s of capacity per video service streamed (depends on user RF transmission parameters). Netstream is most often used as a mechanism for connecting a remote RF reception point (mast or tower) to the user control centre (e.g. police station) via a private LAN network. The Netstream product adds very little delay to the RF video, maintains the selected AES security and causes no loss of quality.

### NetLink

Cobham NetLink is a stand-alone boxed product that can connect to Cobham receivers and enables streaming video on to public or private networks. When connected to private networks, the NetLink generates a high quality multi-cast video stream. When connected to a public network, it produces a reduced frame rate thumbnail stream at a data rate matching that available on the network.

The NetLink product can be upgraded with some powerful options:

**NetLink DVR(I or E)** - Upgrading the NetLink with the remote DVR option creates a sophisticated 'store and forward' product allowing the viewing of video across real world low bitrate public networks, such as 3G or the internet. The remote DVR option records the incoming high quality video to a local hard disk, whilst streaming out a live low bitrate thumbnail service to the user at a capacity which matches that available on the public network. If the user is interested in something seen on the thumbnail stream, then the high quality video can be retrieved in non-real time by download from the hard disk. To assist the user to retrieve the video of interest, NetLink offers a sophisticated range of time logging and trigger functions, and also fast forward and rewind viewing options. NetLink is a uni-cast product, but can support multiple uni-cast sessions simultaneously.

**NetLink AV** - Upgrading the NetLink with the video input option enables the NetLink to connect direct to a camera, in addition to being able to connect to the output of a Cobham microwave receiver. This function enables IP video and audio transmission across public and private networks.

### Cobham Surveillance IP receivers

There are two main types of IP receiver products in Cobham's range: the PC based software IP receivers (also called 'players'); and hardware based IP receivers.

#### Software players

We have two types of PC based software receivers - NETSWDR and NETEPLAY. The first is a standard PC decoder that presents video in a window on the PC. It can be used with multi-service streams and has built in AES decryption for secure operation. The NETSWDR also has a basic option for recoding and playing from file. The NETEPLAY is the software decoder and control application that accompanies the Net-Link IP Streamer described above. The NETEPLAY can be used to decode and play streams in a window on the PC - playing from files of decoded live and full frame rate streams, as well as thumbnails. The NETEPLAY software incorporates sophisticated tools for trigger analysis, programming remote recording events, file transfer and even remote PTZ.

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## Hardware receiver

For those who do not wish to view the IP stream on a PC platform, but instead want to view the video on a traditional video monitor, Cobham Surveillance produces the NETIPHW hardware decoder family. This 19" rack device will decode video and audio streams back to composite PAL or NTSC for viewing on traditional video monitors. More detail on NETIPHW can be found below.

Note: it cannot be used with Net-Link.

## IP Products

### IP Hardware Decoder

The IP Hardware Decoder from Cobham Surveillance is a professional digital video decoder designed to receive multicast audio/video streams from Ethernet networks and output decoded video in composite and S-Video formats, as well as stereo audio. The IP decoder is designed to be used with Netstream and other Cobham streaming video products, such as the CRX Central Receiver.

The unit decodes Ethernet network video streams back to video, for connection to monitoring equipment in control room facilities. The IP Hardware Decoder incorporates low delay decoding technology and built-in buffering to remove network jitter, as well as optional AES decryption for security.

All four NETIPHW units come as a single rack-mountable chassis 1U high. The NETIPHW11 can decode one video and two audio channels and the NETIPHW21 can decode two video and four audio channels. The NETIPHW22 can decode two video and four audio channels, but can be licence upgraded to a NETIPHW42 that can decode four video and eight audio channels.

The IP Hardware Decoder complements the Cobham SOLO4 and SOLO2 product range, which enable the user to build wireless digital microwave video systems. The standard SOLO4 and SOLO2 Encoder/Transmitter and Receiver/Decoder products have been designed to provide rugged point-to-point links for high quality full frame rate video and audio, even in non-line of sight and urban environments.



### Features:

- Ethernet control via web browser or Mission Commander
- RS232 interface to set up Ethernet parameters
- Internal AES128 or 256 decryption
- Automatically selected MPEG2, MPEG4 or mixed mode (where applicable)
- Two bidirectional RS232-over-IP links when used with CRX receiver
- Ability to follow a transmitter across different receivers when used with Mission Commander

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## Specification:

### Input

DS	4 pin Lemo
Ethernet	RJ45
RS232	3 pin Lemo

### Output

Composite Video	BNC (2 x on NETIPHW2)
S-Video and NETIPHW42)	S-Video Connector (2 x on NETIPHW22)
Audio NETIPHW42)	5 pin Lemo (2 x on NETIPHW22 and NETIPHW42)

### Ethernet

Format	10/100BaseT
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### Video

Line Standard	PAL/NTSC
Resolution	704, 528, 480, 352
Coding Mode	MPEG2 or MPEG4
Delay	150ms to 1sec depending on mode
Frame Rate	Full/Half/Quarter/Eighth (optional)

### Audio

Line Level Output	Phono
Sample Rate	32KHz, 16KHz, 8KHz
Bits per Sample	12 or 8 bit

### Data Interface

RS232 Data Output	1k2 to 115k2 baud switchable
Encryption	
Format	ABS (standard) AES128/256 (optional)

### Control

Interfaces	RS232 or Ethernet
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### Physical

Dimension	19" Rack 1RU height
Weight	3kg

### Power

DC Input	11-13V
AC	When using adaptor supplied

### Environment

Temperature Range	-10 to +50 deg C
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### Product Codes:

NETIPHW11	One Decoder, One Video, Two Audio
NETIPHW21	One Decoder, Two Video, Four audio
NETIPHW22	Two Decoders, Two Video, Four audio*
NETIPHW42	Two Decoders, Four Video, Eight audio

\*licence upgradable to NETIPHW42

### Product Code Includes:

CA0001	RS232 cable Lemo-Dsub9 3m
CA0006	BNC Video lead 3m
CA0023	Standard 12V power block
CA0183	Single keyway Audio Output cable

### Accessory Options:

NETIPHW22-UP	Upgrade to Four Video, Eight audio
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### Licensing Options:

AES128IPHW	AES IPHW 128 Bit Decryption
AES256IPHW	AES IPHW 256 Bit Decryption

For further information please contact:

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