Recording and playback modes
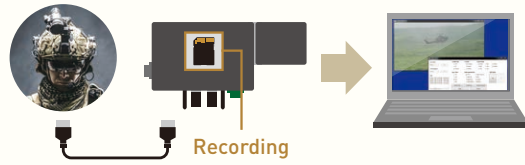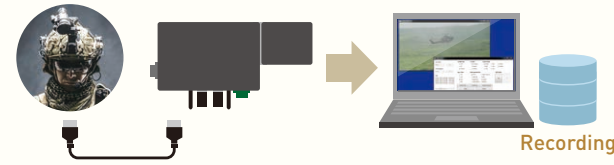
Recording · Local Recording

Users can record video on local storage and transmit over a low bandwidths

Recording

Recording · Receiver Side

Receiver side users can record the live video streams and replay in the decoder suite

Recording

Battery operation

Video can be transmitted from the field without an additional power source

Specifications

ULC encoder
ULC-E2000M

	Model	ULC-E2000M
Video	Resolution	128×96~1920x1080
	Codec	HEVC_ULC®
	Framerate	0.25~30fps
	Bitrate	HEVC_ULC® : 5kbps~1Mbps
Protocol		TCP/IP、UDP/IP
I/O	Video In	1x HDMI　1x composite video (via USB port)
	Network	10/100BASE-TX
	Other	1x USB2.0 A-type
Power		DC 9V-16V Battery
Environmental		IP65 / MIL-810G (Planned)
Operating temperature / humidity		Operating Temp : -10℃ ~ +55℃ Humidity : 10% ~ 90% (Non Condensing)
Dimensions and Weight		Dimensions : W162 x H60 x D110 mm (excl. battery) Weight : Less than 1.5 kg (excl. battery)

※K-cipher2 encryption (optional)

ULC decoder suite
ULC-D2000M

	Model	ULC-D2000M
Video	Resolution	128×96 ~ 1920x1080
	Codec	HEVC_ULC®
	Framerate	0.25~30fps
	Bitrate	HEVC_ULC® : 5kbps~1Mbps
Protocol		TCP/IP、UDP/IP
I/O	Video Out	1x HDMI
	Network	1x 10/100/1000BASE-T
	Other	2x USB 3.0、1x USB 2.0、1x Serial Connector、1x Display Connector (Analog RGB)、1x Headset Terminal (Mic in / Audio out)
Power		AC Adaptor (Input : AC100V~240V)
Environmental		IP65 / MIL-STD-810G
Operating temperature / humidity		Operating Temp : -10℃ ~ +50℃ Humidity : 30% ~ 90% (Non Condensing)
Dimensions and Weight		Dimensions : W313 x H46.1 x D288.4 mm Weight : 2.76kg

ULC
Ultra Low rate video Codec

Real time video over bandwidth constrained networks

- **Peak Rate Control**
- **High Resolution Snapshot Mode**
- **Mobile / Rugged Hardware**
- **Extended Field Operation Time** (10 hours+)

Video transmission from the battlefront

Satellite networks

Sharing vital situational awareness information with command structures using the satellite network

Mobile camera
Night vision goggles

ULC
(Transmitter)

Encryptor
Satellite antenna
/ modem

Encryptor
Satellite antenna
/ modem

ULC
(Receiver)

Tactical radio

Video transmission using the existing network infrastructure

Camera
(reconnaissance vehicle)

ULC
(Transmitter)

In vehicle radio

Radio
(Command post)

ULC
(Receiver)

Mobile camera
Night vision goggles

ULC
(Transmitter)

Mobile radio

Comparison between ULC and conventional video encoding

ULC

Conventional video codec (H.264)

Parameters : 100kbps Resolution : 640x360, 10fps

Ultra low rate video compression technology HEVC_ULC®

HEVC-ULC (Ultra Low-rate video Codec) is a next generation video compression technology at the core of ULC. Based off H.265, the HEVC-ULC encoding algorithm offers significantly improved coding efficiency at low data rates. So when compared with the conventional codecs, such as H.264, the video compression is optimized with a bandwidth reduction rate of up to 60%.

Peak rate control

HEVC-ULC exercises peak rate control by fixing the upper limits of the data rate and then clipping any video data that exceeds this peak limitation. Peak rate control ensures the network conditions are not exceeded enabling video to be sent over even the most unstable networks without experiencing drops in video quality.

RoI (Region of Interest)

The RoI feature allows the user to select an area of interest and enhances the picture in the selected region, sharpening it to a clear image quality all whilst still maintaining peak rate control.

Snapshot mode

Snapshot mode is a feature that sharpens the image in a focused area to a higher picture quality by transitioning from video to a still image. The mode can also be used with an RoI area selected to improve the picture sharpness further and expanded it to the remainder of the display.

Video mode

RoI Area