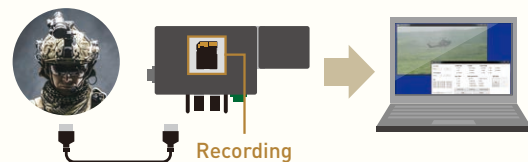


Recording and playback modes

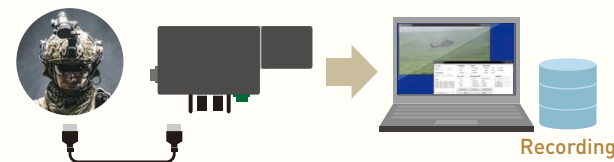
Recording Local Recording

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



Recording Receiver Side

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



Battery operation

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



Specifications

ULC encoder ULC-E2000M



Model		ULC-E2000M
Video	Resolution	128×96~1920×1080
	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°C ~ +55°C 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 ~ 1920×1080
	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°C ~ +50°C Humidity : 30% ~ 90% (Non Condensing)
Dimensions and Weight		Dimensions : W313 x H46.1 x D288.4 mm Weight : 2.76kg

The contents of this catalog are current as of August 2019. The contents are subject to change without prior notice for product improvement. HEVC-ULC® is a registered trademark of Hytec Inter Co., Ltd.



HYTEC INTER Co., Ltd. <https://hytec.co.jp/english/>

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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 battlefield

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

ULC
(Receiver)

Tactical radio

Video transmission using the existing network infrastructure



Camera
(reconnaissance vehicle)



ULC
(Transmitter)



In vehicle radio



Mobile camera
Night vision goggles



ULC
(Transmitter)



Mobile radio



Radio
(Command post)



ULC
(Receiver)

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®

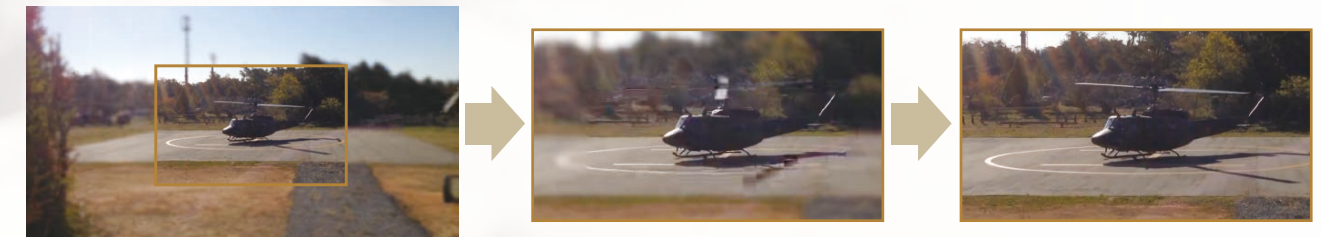
HEVC-ULC (Ultra Low-rate video Codec) is a next generation video compression technology at the core of ULC. Based off H.265, the HEVC-ULC encoding algorithm offers significantly improved coding efficiency at low data rates. So when compared with the conventional codecs, such as H.264, the video compression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

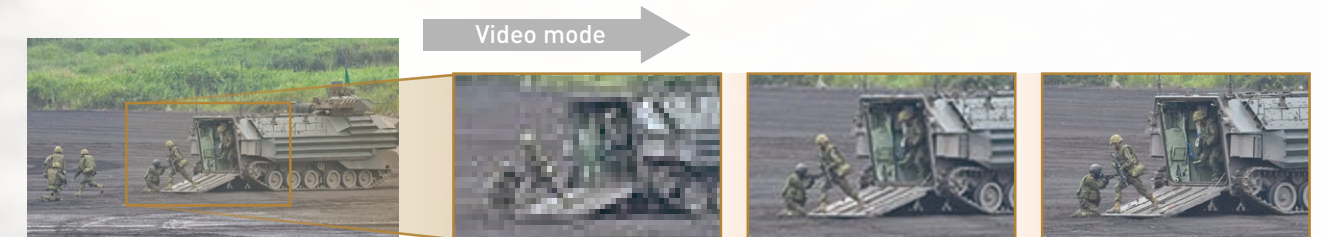
RoI (Region of Interest)

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.



RoI Area