CX80 Pro

Independent Controller

Specification

Update history

Release version	Release time	Update description
V1.zero	2022-03-11	First release.

brief introduction

CX80 Pro is a flagship 8K independent master of Nova's new generation control system Coex series, with a maximum on-board resolution of 7680×4320@30HzIt has rich video input interfaces (HDMI 2.0, HDMI 2.1, DP 1.4, 12g-sdi), and supports 5Gbps network port output and 40g optical fiber remote output. Cooperate with the new visual management platform VMP to provide users with a better control experience.

Based on the modular design concept, the CX80 Pro adopts a plug-in card structure, which can flexibly replace sub cards and simple maintenance. At the same time, the CX80 Pro is equipped with a 5.5-inch touch LCD screen, and the operation commands can be reached at one touch, so as to easily realize human-computer interaction.

CX80 Pro supports high image quality algorithms such as color processing and dynamic engine. The color of the display screen is more real and the image quality is exquisite. With the support of HDR, 3D and other display technologies, CX80 Pro is committed to bringing users excellent visual experience.

Certification

Application in progress, please contact Novastar if necessary.

If the product has no relevant certification in the country or region to which it is sold, please contact Novartis Nebula for confirmation or treatment at the first time. Otherwise, if it causes relevant legal risks, the customer shall bear it or Novartis Nebula has the right to recover.

characteristic

Input and output

- **Two cards can be inserted and selected as required**
  - 4 *12g-sdi + 1-*HDMI 2.1 + 1-* DP 1.4
  - 4-* 12g-sdi + 4-* HDMI 2.0
- **Equipped with 2 output sub cards**
  - 1×16 channel Neutrik 5g network port output card
  - 1×2-way 40g pluggable optical port output card
- **Equipped with one pluggable control sub card, including the following interfaces**
  - 1×Genlock synchronization signal input (with loop output)
  - 2×Ethernet control network interface
  - 1×Aux auxiliary interface
- **12bit / 10bit / 8bit video source input**
- **Splice input**

  When 12g-sdi / HDMI 2.0 interface is used for input, input source splicing is supported.

- **The net port load is calculated according to the box**

  The network port load is calculated by the sum of the resolution superposition of all screen boxes, with high bandwidth utilization.

- **Frame rate adaptation**

  Automatically adapt to various input frame rates, including decimal frame rates.

Display effect

✚ **Color processing**

It provides a variety of functions to adjust and calibrate the color of video source, including color replacement, color calibration, curve and 3D LUT.

✚ **Dynamic engine**

Greatly improve the display contrast and picture details, bring better visual experience, and effectively control and reduce the power consumption of the screen.

✚ **Full gray scale correction**

The brightness and chroma of the display screen are more uniform under different gray scales, and the image quality of the display screen is improved. It is especially suitable for indoor small spacing screens.

✚ **Illumination by illumination chromaticity correction**

Cooperate with Nova high-precision correction system to correct the brightness and chroma of each light point, effectively eliminate the brightness difference and chroma difference, and make the brightness and chroma of the whole screen highly consistent.

✚ **HDR**

– support hdr10 and comply with SMPTE St 2084 standard.

– support HLG and comply with bt.2100 standard.

✚ **delay**

– support low delay, 0 frame delay at the sending card end, less than 1ms, and realize low delay without load reduction.

– support additional frame delay, which can increase 0 ~ 4 frame delay.

Operation control

✚ **Touchable LCD**

Equipped with 5.5-inch touch screen and 1080p high-definition display, it is sensitive, firm and durable. Users can give instructions with a single click, and the operation is easy.

✚ **VMP software control**

The new software VMP of Novartis is used to connect and manage the equipment for input source configuration, screen configuration, screen correction, color processing, output configuration, preset scheme management and screen maintenance. It has practical functions and simple operation.

✚ **Ethernet cascade control**

Gigabit Ethernet control network port, supporting TCP / IP protocol and star connection.With network switching function, serial cascade control of multiple devices can be realized without switch.

Video source characteristics

Input interface	characteristic		
	Bit depth	Sampling format	Maximum input resolution
HDMI 2.0	8bit	RGB4:4:4 YCbCr4:4:4 YCbCr4:2:2	4096×2160 @60Hz
		YCbCr4:2:0	Don't support it
	10bit/12bit	RGB4:4:4 YCbCr4:4:4	four thousand and ninety-six×1080@60Hz

		YCbCr4:2:2	four thousand and ninety-six×2160@60Hz
		YCbCr4:2:0	Don't support it
HDMI 2.1	8bit	RGB4:4:4 YCbCr4:4:4 YCbCr4:2:2	7680×4320@30Hz
		YCbCr4:2:0	Don't support it
	10bit/12bit	RGB4:4:4 YCbCr4:4:4	5120x2160@60Hz
		YCbCr4:2:2	5120×3200@60Hz
		YCbCr4:2:0	Don't support it
DP 1.4	8bit	RGB4:4:4 YCbCr4:4:4 YCbCr4:2:2	7680×4320@30Hz
		YCbCr4:2:0	Don't support it
	10bit/12bit	RGB4:4:4 YCbCr4:4:4	5120x2160@60Hz
		YCbCr4:2:2	five thousand one hundred and twenty×3200@60Hz
		YCbCr4:2:0	Don't support it
12G-SDI×four	�ı Support st-2082 (12g), st-2081 (6g), st-424 (3G), st-292 (hd) standard video input. �ı Maximum input / output 4096×2160@60HzVideo source. ı Input resolution and bit depth settings are not supported.		

explain

Ÿ The maximum input resolution of HDMI 2.0 and DP 1.4 interfaces in the table needs to be obtained after setting the graphics card end.

appearance

front panel

Serial number	explain	function

1	Standby key	ι Short press to turn on / off.
		ι Press and hold for 5 seconds or more to restart the device in the power on state.
2	USB 2.0	Support system upgrade, export equipment self-test results, etc.
3	Operation indicator	ι Red always on: standby.
		ι Blue always on: turning on.
		ι Green always on: normal operation.
		ι Red flashing: abnormal startup.
4	Touchable TFT screen	Displays the current state of the equipment, as well as setting parameters and issuing instructions. The size is 5.5 inches.
5	Function knob	ι In the main interface, press the knob to enter the menu operation interface.
		ι In the menu operation interface, rotate the knob to select the menu or adjust parameters, and press the knob to confirm the operation.
		ι Press and hold the knob and back key for 5 seconds or more at the same time to lock or unlock the key.
6	BACK	Return to the previous menu or cancel the current operation.

Rear panel

Input card
Input card 1 (4-way 12g SDI + 1-way HDMI 2.1 + 1-way DP 1.4)

Interface	quantity	explain	
12G-SDI	4	standard	Support st-2082 (12g), st-2081 (6g), st-424 (3G), st-292 (hd) standard video input.
			Support 3G level a / level B (DS mode).
		resolving power	Maximum resolution 4096×2160@60Hz。
		Frame rate	Supports up to 60Hz frame rate.

		Splicing	When the input source is SDI, input source splicing is supported.
		remarks	When the input source is 12g-sdi and long-distance transmission, it is necessary to use the SDI data line of canare / l-4.5chd + / uhdtv-sdi specification, and the length is less than 50m.
HDMI 2.1	1	resolving power	Maximum resolution 7680×4320@30Hz。 Minimum resolution 1920×1080@60Hz。
		Limit width and height	Limit width 8192 (1920 ~ 8192). Limit height 8192 (1080 ~ 8192).
		Frame rate	23.98/24/25/29.97/30/47.95/48/50/59.94/60/71.93/72/75/100/119.88/120/143.86/144/240Hz。
		HDR	Support hdr10 and comply with SMPTE St 2084 standard. Support HLG and comply with bt.2100 standard.
		EDID management	Support preset resolution, up to 7680×2160@60Hz。 Support custom input resolution.
		HDCP	Support HDCP 2.3, downward compatible.
		Interlaced signal input	I won't support it.
DP1.four	1	resolving power	Maximum resolution 7680×4320@30Hz(additional settings for graphics card). Minimum resolution 1920×1080@60Hz。
		Limit width and height	Limit width 8192 (1920 ~ 8192). Limit height 8192 (1080 ~ 8192).
		Frame rate	23.98/24/25/29.97/30/47.95/48/50/59.94/60/71.93/72/75/100/119.88/120/143.86/144/240Hz。
		HDR	Support hdr10 and comply with SMPTE St 2084 standard. Support HLG and comply with bt.2100 standard.
		EDID management	Support preset resolution, up to 3840×2160@60Hz。 Support custom input resolution.
		HDCP	Support HDCP 2.2, downward compatible.
		Interlaced signal input	I won't support it.

Input card 2 (4-way 12g SDI + 4-way HDMI 2.0)

Interface	quantity	explain	
12G-SDI	4	As above, please refer to the description of 12g-sdi interface in input card 1.	
HDMI 2.0	4	resolving power	Maximum resolution 4096×2160@60Hz(additional settings for graphics card). Minimum resolution 800×600@60Hz。

		Limit width and height	Limit width 8192 (800 ~ 8192). Limit height 8192 (600 ~ 8192).
		Frame rate	23.98/24/25/29.97/30/47.95/48/50/59.94/60/71.93/72/75/100/119.88/120/143.86/144/240Hz。
		HDR	Support hdr10 and comply with SMPTE St 2084 standard. Support HLG and comply with bt.2100 standard.
		EDID management	Support preset resolution, up to 3840×2160@60Hz。 Support custom input resolution.
		HDCP	Support HDCP 2.2, downward compatible.
		Interlaced signal input	I won't support it.

Output card

Interface	quantity	explain
1~16	16	Neutrik (ne8fbh) 5g network port. ı The maximum load of a single road network port is 2.6 million pixels. ı Support redundancy between network interfaces.

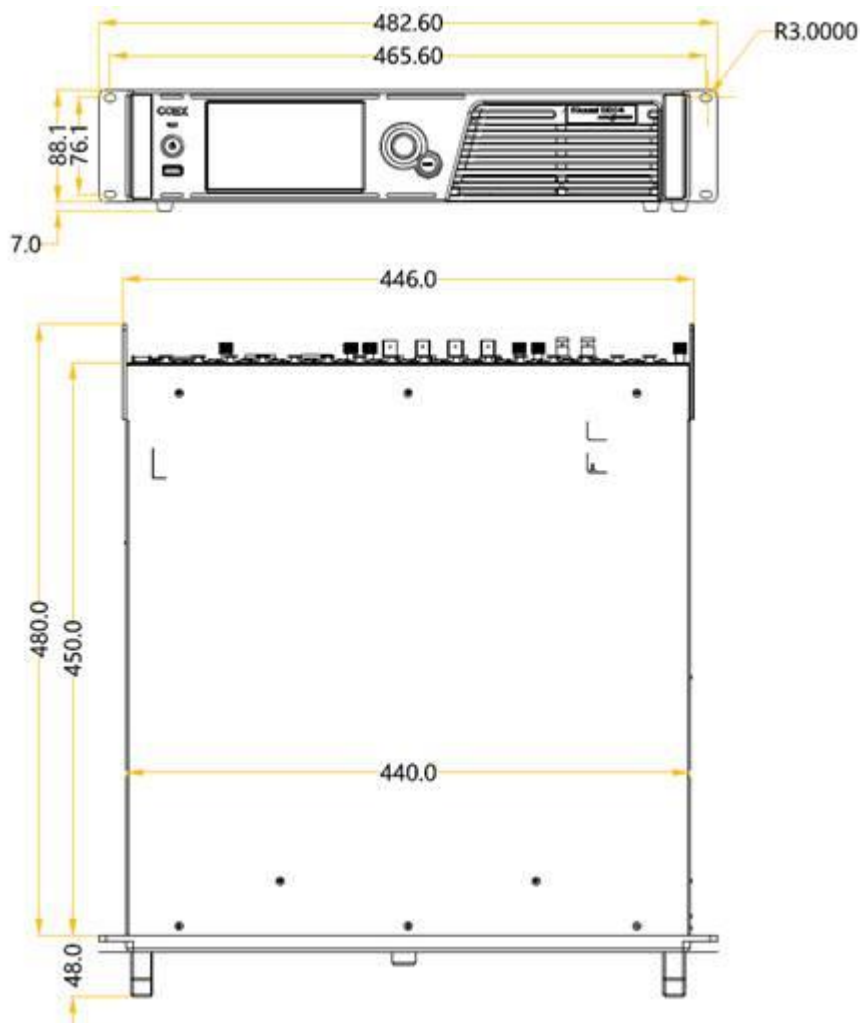| Interface	quantity	explain
1~2	2	40g optical fiber interface.(reserved) A single optical fiber can carry up to 8 5g network ports. 1Corresponding network port 1 ~ 8 2Corresponding network port 9 ~ 16

Control card

Interface	quantity	explain
ETHERNET	2	Gigabit Ethernet control network port, supporting TCP / IP protocol and star connection.

		The functions of the two channels are the same, without priority and sequence. It can connect VMP software, and has its own network switching function. It can carry out serial cascade control on multiple devices without a switch.
GENLOCK	1	Synchronous phase-locked signal interface, supporting bi level (black burst) and tri level. ı In: synchronization signal input. ı Loop: synchronous signal loop output. For standard genlock signal generators, up to 20 devices can be cascaded.
AUX	1	Auxiliary interface, connecting central control equipment (RS232).(reserved)
SPDIF OUT	1	Digital audio output interface.(reserved)
Power interface		
100-240V~ ，50/60Hz，2A		AC power input interface and switch.

size

Tolerance: ± 0.3 unit: mm

Specification parameters

Electrical specifications	input voltage	100-240V~，50/60Hz，2.0A
	Rated power consumption	200W
work environment	temperature	-20℃～+60℃
	humidity	0% RH ~ 80% RH, no condensation
Storage environment	temperature	-30℃～+80℃
	humidity	0% RH ~ 90% RH, no condensation
Physical specifications	size	482.6mm × 94.2mm × 528mm
	Net weight	10.5kg
	Total weight	12.5kg
Packaging information	Large outer box	660.0mm×570.0mm×210.0mm kraft paper carton
	Accessory box	408.0mm×290.0mm×50.0mm, white cardboard box
	Accessories list	∣1×power cord ∣1×Network cable ∣1×HDMI cable ∣1×DP line
Waterproof grade		IP20 Please pay attention to waterproof, for example, prevent water from dripping into the product, do not get wet or wash the product, etc
Noise level (typical 25 ℃ / 77 ℉)		45dB（A）

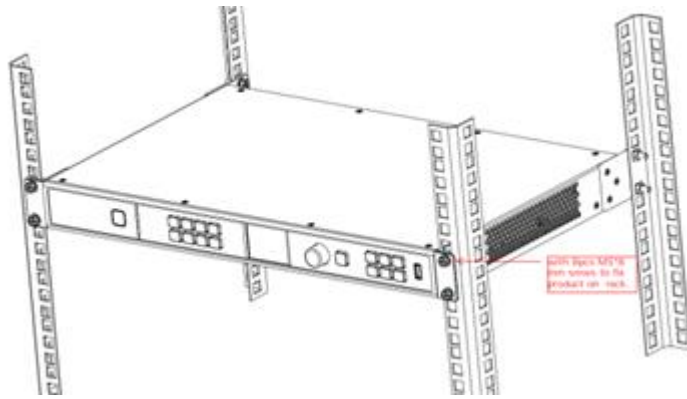Power consumption may vary according to product settings, environment, usage and many other factors.

Statements and warnings

Battery declaration

∣ The battery is not replaceable.
∣ Putting the battery into a fire or heating furnace, or mechanically squeezing or cutting the battery, may cause the battery to explode.
∣ Placing the battery in an extremely high temperature environment may lead to battery explosion or leakage of combustible liquid or gas.
∣ Exposing the battery to extremely low air pressure may lead to battery explosion or leakage of combustible liquid or gas.

Installation statement

When the product needs to be installed on the support, please use 8 M5 * 8 screws for installation. The installation support should be able to bear the weight of at least 32kg.

l Elevated operating ambient temperature - if installed in a closed or multi unit rack assembly, the operating ambient temperature of the rack environment may be higher than room temperature.Therefore, when installing the equipment, it should be considered to install the equipment in an environment matching the maximum ambient temperature (TMA) specified by the manufacturer.

l Air flow reduction - when the equipment is installed on the rack, ensure that the air flow required for the safe operation of the equipment is not affected.

l Mechanical load - when the equipment is installed on the rack, it shall be ensured that there will be no dangerous situation due to uneven mechanical load.

l Circuit overload - the connection between the equipment and the power supply circuit and the possible impact of circuit overload on overcurrent protection and power supply wiring shall be considered.When solving this problem, due consideration should be given to the rating of the equipment nameplate.

l Reliable grounding - the equipment installed on the rack shall be reliably grounded.Special attention should be paid to the connection to the power supply rather than directly to the branch circuit (e.g. patch panel).

Other statements

When using the equipment, please place the equipment horizontally, and do not flip or place it vertically.