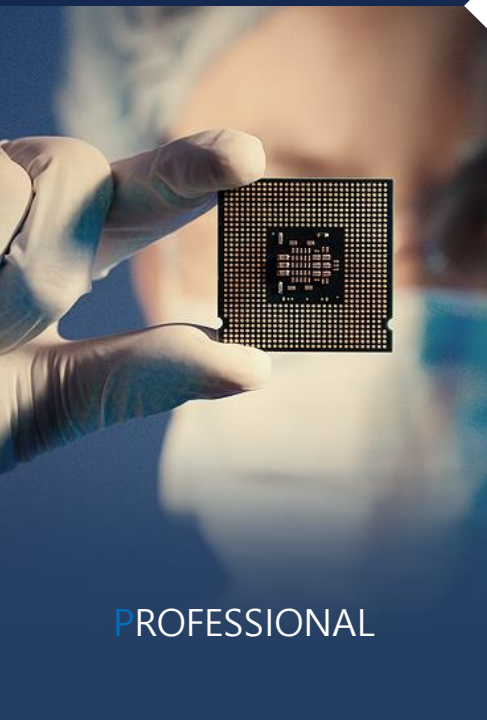




EX-SDI™



SURVEILLANCE



PROFESSIONAL



CONSUMER

EN675 GUIDE

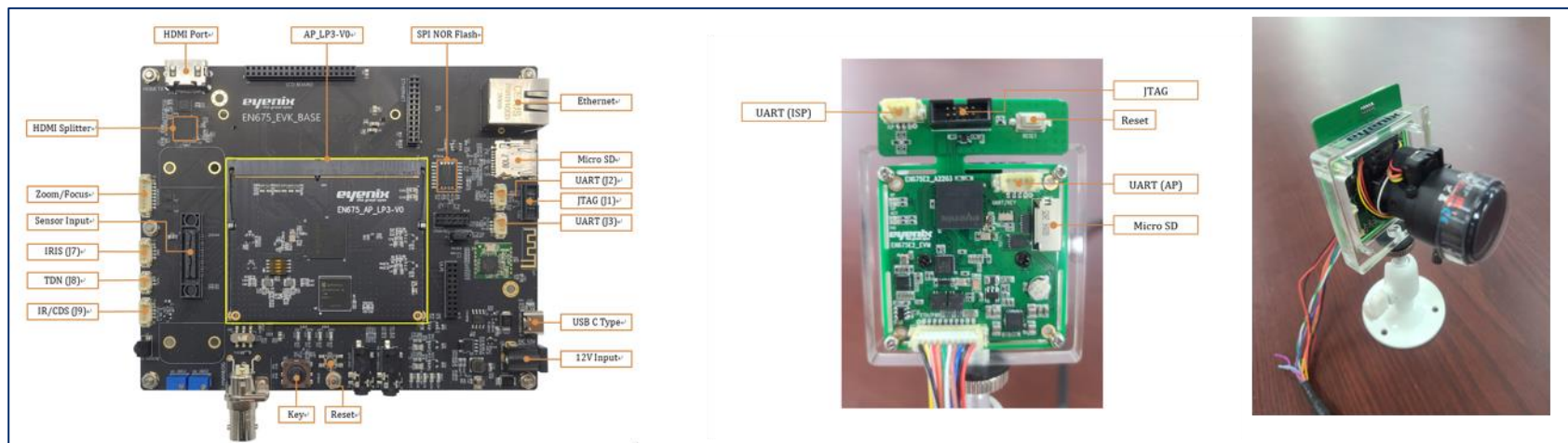
EYENIX

- USB Dongle 3.0

Device Image

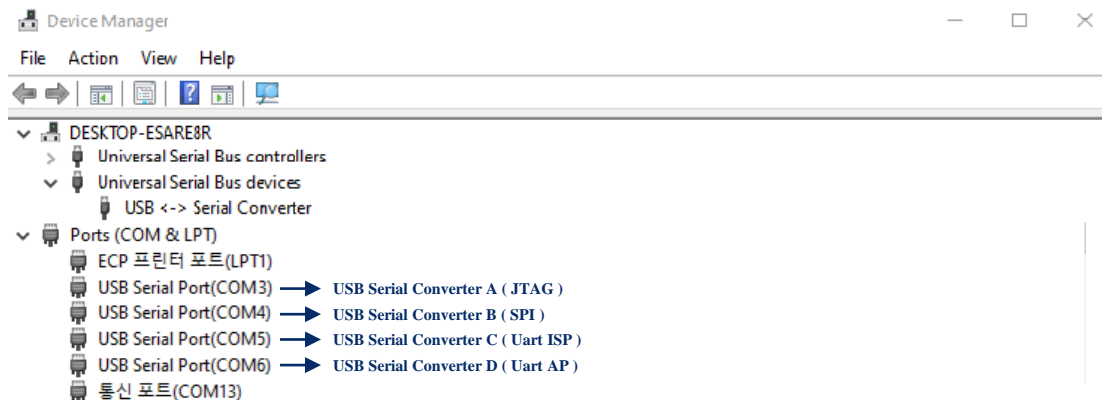
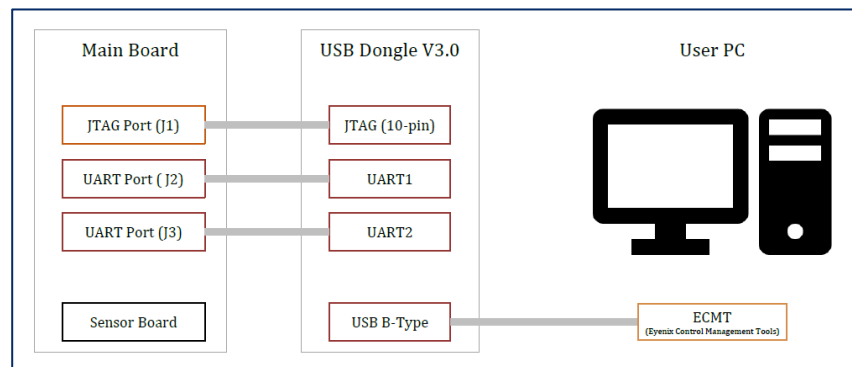


- EVM or EVK Board



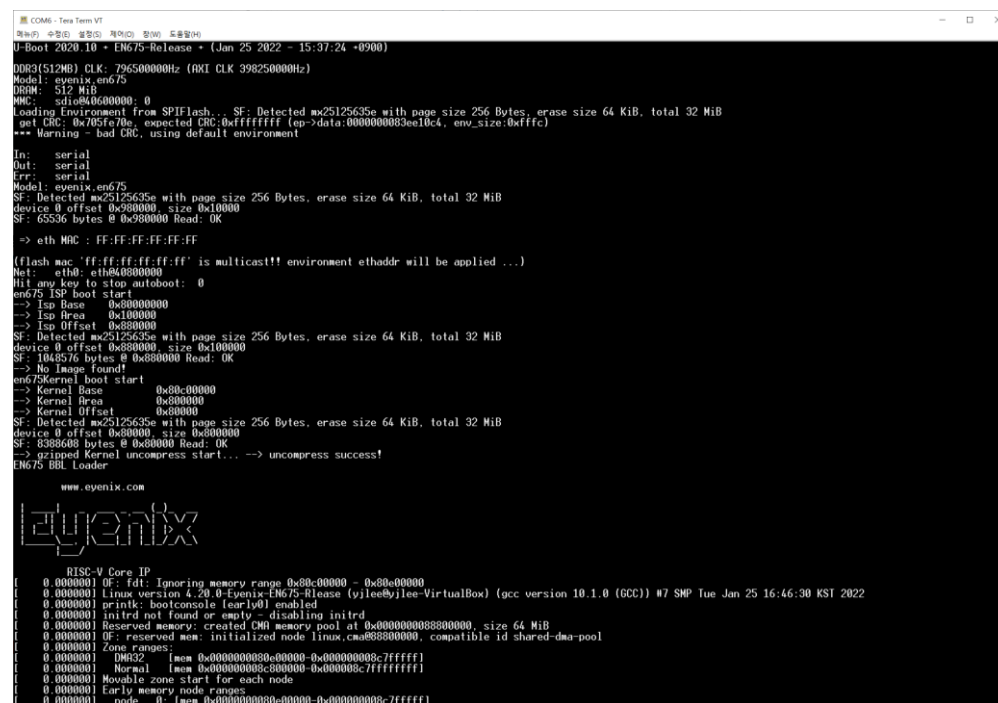
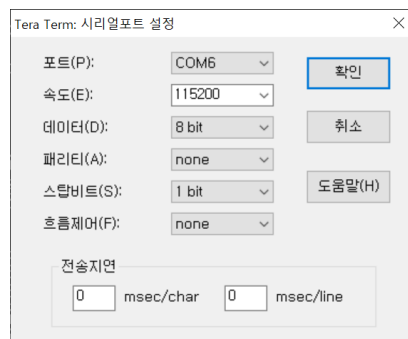
- ECMT (PC_Tools)

- Ref Connection



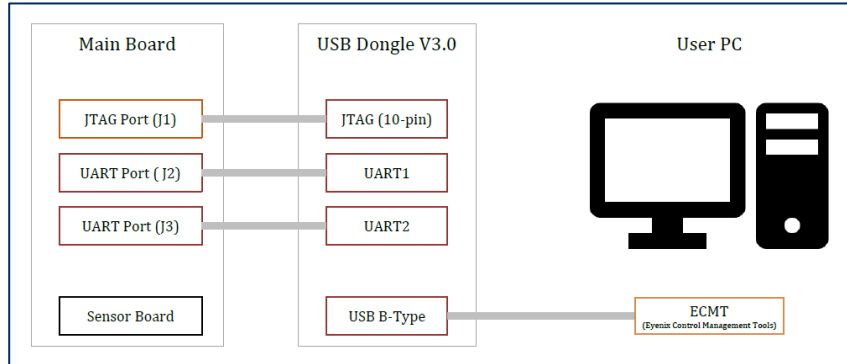
- Used terminal program (ex : Tera term, Putty, Xshell etc..)

- Board connection & setting serial port
- Power up



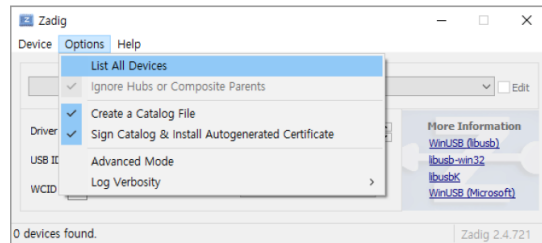
Setup(Binary Download)

- Ref Connection

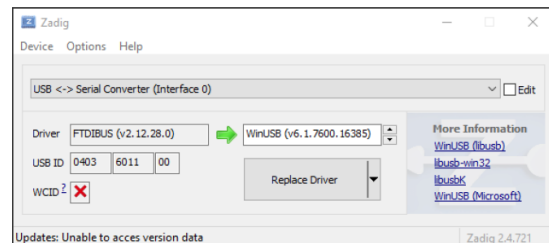


- Setup USB : Zadig Installation - <https://zadig.akeo.ie>

- 1) Open zadig-x.x.exe, choose **Options** -> **List All Devices**.



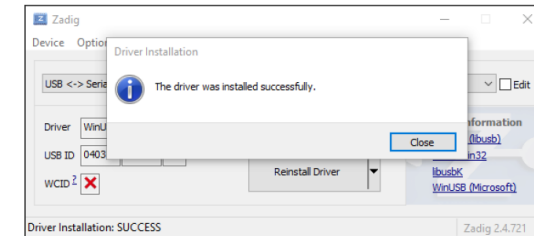
- 2) Choose the **USB <-> Serial Converter (Interface 0)**.



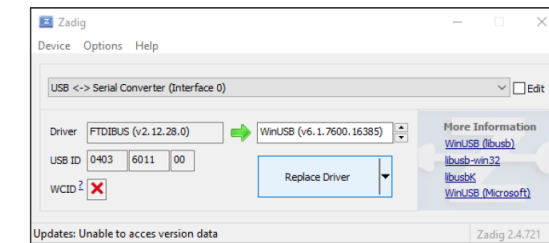
- 5) Open the **Device Manager** window to check if the drivers are installed properly in **Universal Serial Bus devices** category. If the connection is successful, 3 more ports are added. Among these, the port marked as USB Serial Converter C is the ISP UART, and the port marked as USB Serial Converter D is the LINUX UART. You can check port location at properties.



- 4) The **Driver Installation** dialog box will be pop-up to show the installation status.

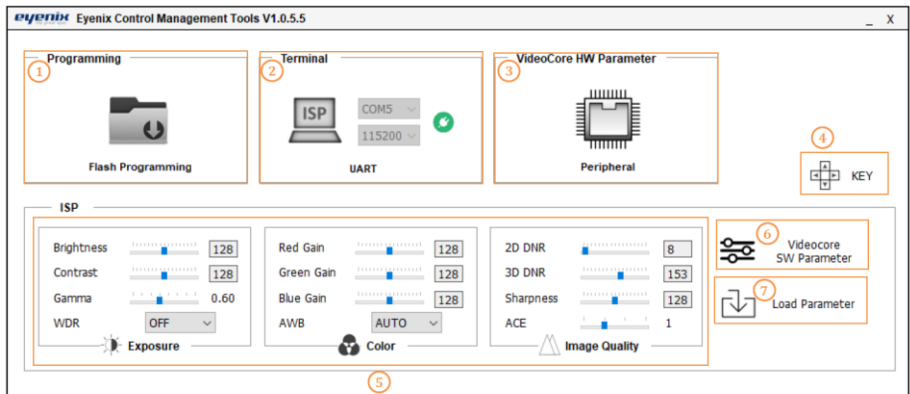


- 3) Click **Replace Driver** button.



Setup(Binary Download)

- ECMT Structure

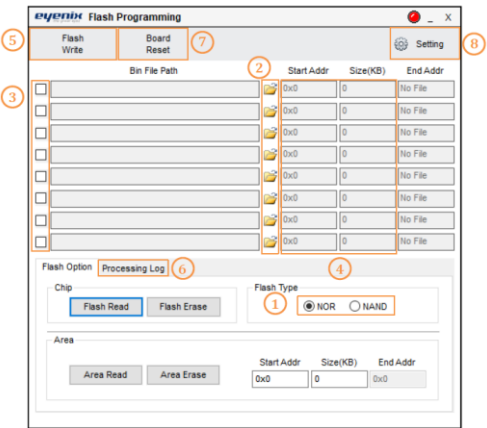


- 1) Flash Programming : Open Flash programming dialog for writing EN675 .bin, .gz, .img files.
- 2) UART : Connect UART COM port and Open UART terminal dialog for check ISP log.
- 3) Peripheral : Load and save videocore_hw.par file for configuring EN675.
- 4) Key : Open Key control dialog for control EN675 OSD menu.
- 5) ISP control box : Control main ISP parameters by sliders and comboboxes.
- 6) Videocore SW Parameter : Open Videocore SW Parameter for Controlling more detail parameters.
- 7) Load parameter : Load value of ISP box parameters currently set.

Default addr	NOR	NAND
u-boot.en675.bin	0	0
kernel.en675.gz	0x80000	0x100000
videocore.gz	0x880000	0xb00000
app.img	0x990000 (size : 22976KB)	0xd20000 (size : 49152KB)

Default binary partition

- Programming Serial Flash (by ①Programming tool)



Flash Write operates in the order of Read & Compare, Erase, Write and Verify.

- 1) Select Flash memory chip type between NOR or NAND.
- 2) Click the folder icon for selecting image to write.
- 3) Check the select box. Multiple selection is available.
- 4) To write image by dedicated address, write **Start Address**. The end address will be automatically calculated with respect to the volume of image file.
- 5) Click **Flash Write** button.
- 6) The Processing Log window displays the status of **Flash Write** operation.
- 7) Click Board Reset when user wants reset EN675 by JTAG.
- 8) Click Setting menu when user wants toggle show/hide server window.

- ID : root
PW : eyenix

- DHCP

```
root@en675: ~# ifconfig  
eth0      Link encap:Ethernet  HWaddr 00:30:BA:FF:67:50  
          inet addr:192.168.0.100  Bcast:192.168.255.255  Mask:255.255.0.0
```

- STATIC IP

```
root@en675: ~# ifconfig eth0 192.168.10.10 netmask 255.255.255.0
```

- The streamer application is located on /App/bin folder.

example)

```
/App/bin/streamer -eln 0,1 --main 2592,1944,30,4000,3 &
```

Description of option

streamer [-e|c|l|d|n|m]

```
streamer -e [--main [width,height,fps,bps,profile]] [--sub [width,height,fps,bps,profile]] [--thr [width,height,fps,bps,profile]] [--fou [width,height,fps,bps,profile]]
```

=> Encoder settings : width [320~3840], height [240~2160], fps [1~30], bps Kbps[1000~10000], profile [0 baseline, 1 main, 2 high, 3 hevc main, 6 JPEG]

```
streamer -c
```

=> Capturing of video data 'YUV 4:2:0 NV12' type (It is saved on '/img' folder overwritten after scaled down)

```
streamer -l
```

=> Display image on video '664x164 size eyenix logo'

```
streamer -d
```

=> developing...

```
streamer -n{m} [0,1]
```

=> [AI Model, OSD on/off], (Person detector, Face detector) = (0,1), (OSD off, OSD on) = (0,1)

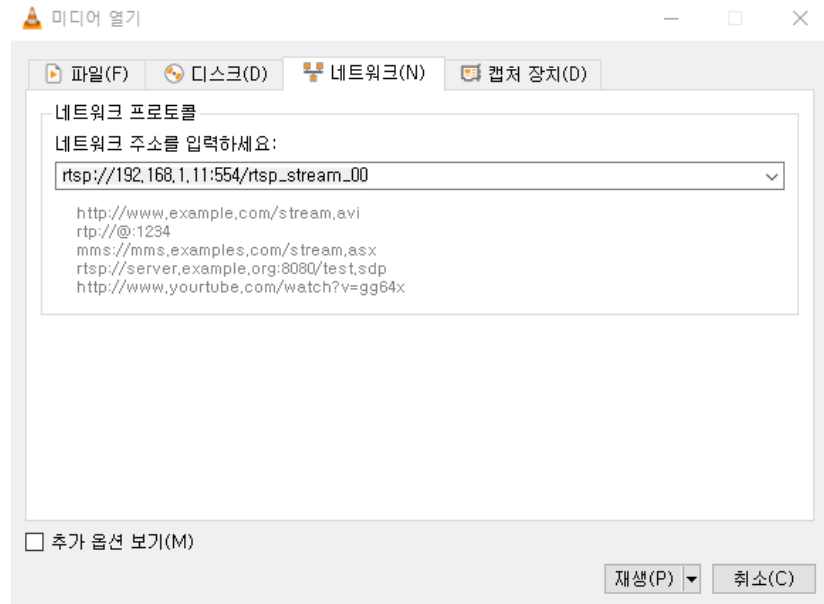
- url

rtsp:// ip address :554/rtsp_stream_00

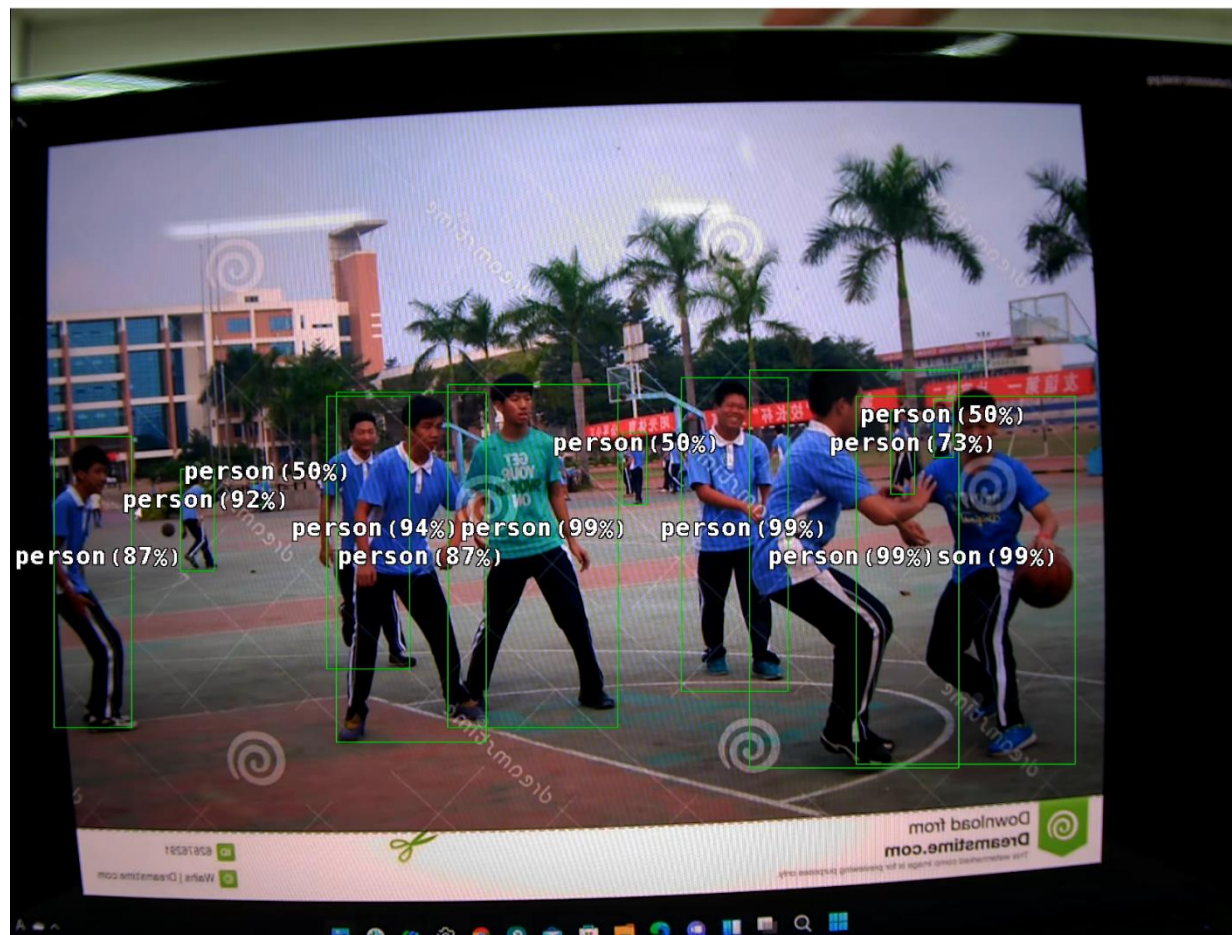
rtsp:// ip address :554/rtsp_stream_01

rtsp:// ip address :554/rtsp_stream_02

rtsp:// ip address :554/rtsp_stream_03

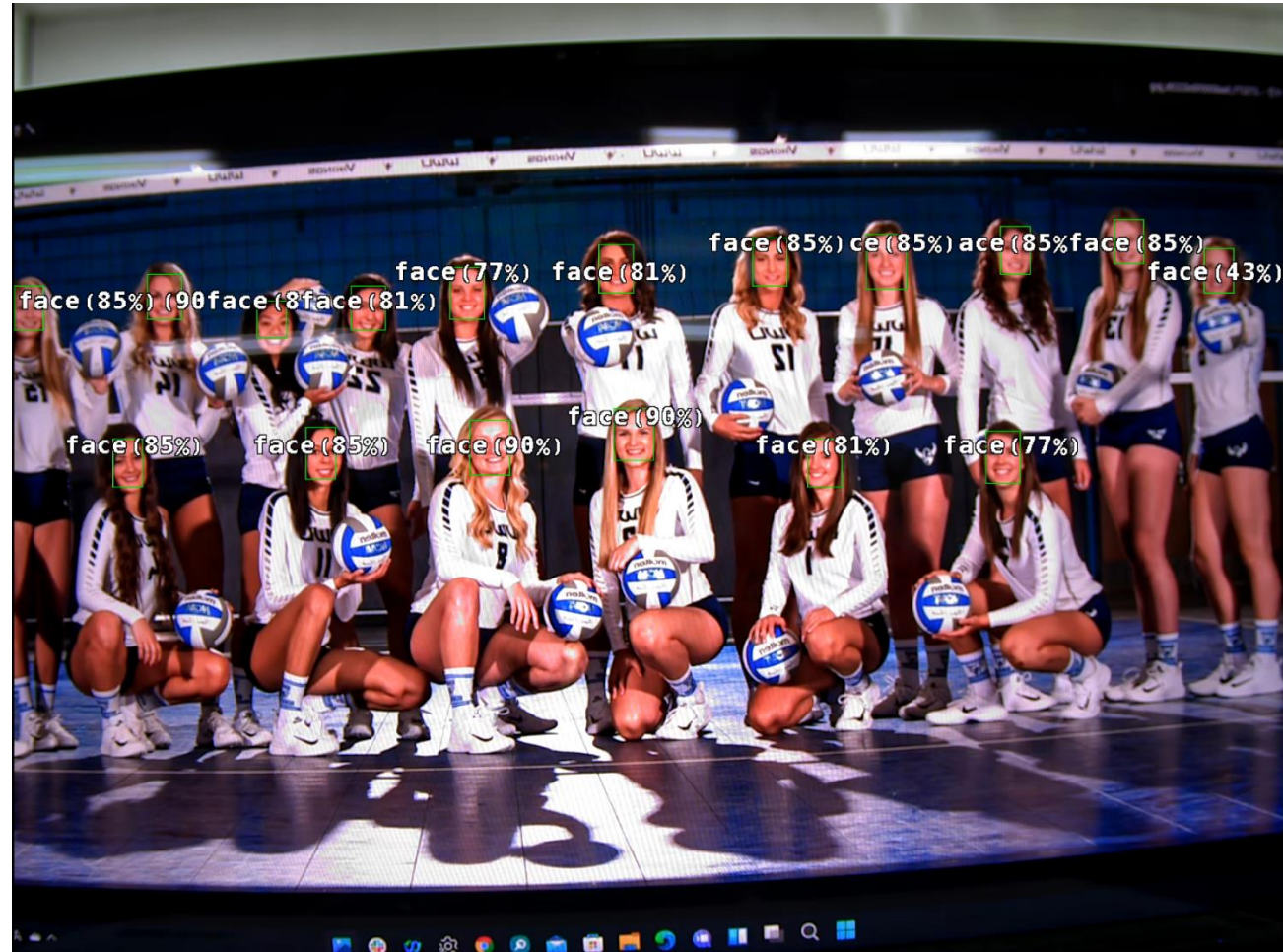


- Person Detector
(./streamer -en 0,1 -main 2592,1944,30,4000,3 &)



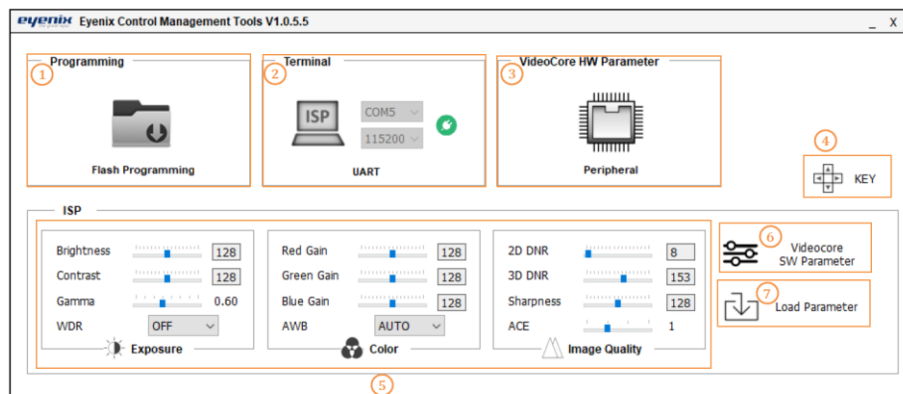
- Face Detector

```
(./streamer -en 1,1 -main 2592,1944,30,4000,3 &)
```



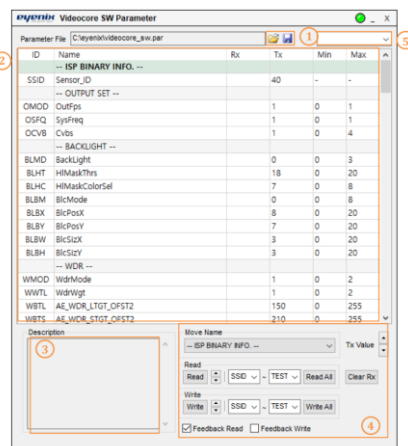
ISP (Software Parameter Control)

- ECMT Structure



- 1) Flash Programming : Open Flash programming dialog for writing EN675 .bin, .gz, .img files.
- 2) UART : Connect UART COM port and Open UART terminal dialog for check ISP log.
- 3) Peripheral : Load and save videocore_hw.par file for configuring EN675.
- 4) Key : Open Key control dialog for control EN675 OSD menu.
- 5) ISP control box : Control main ISP parameters by sliders and comboboxes.
- 6) Videocore SW Parameter : Open Videocore SW Parameter for Controlling more detail parameters.
- 7) Load parameter : Load value of ISP box parameters currently set.

- ISP Control (by ⑥Videocore SW Parameter)

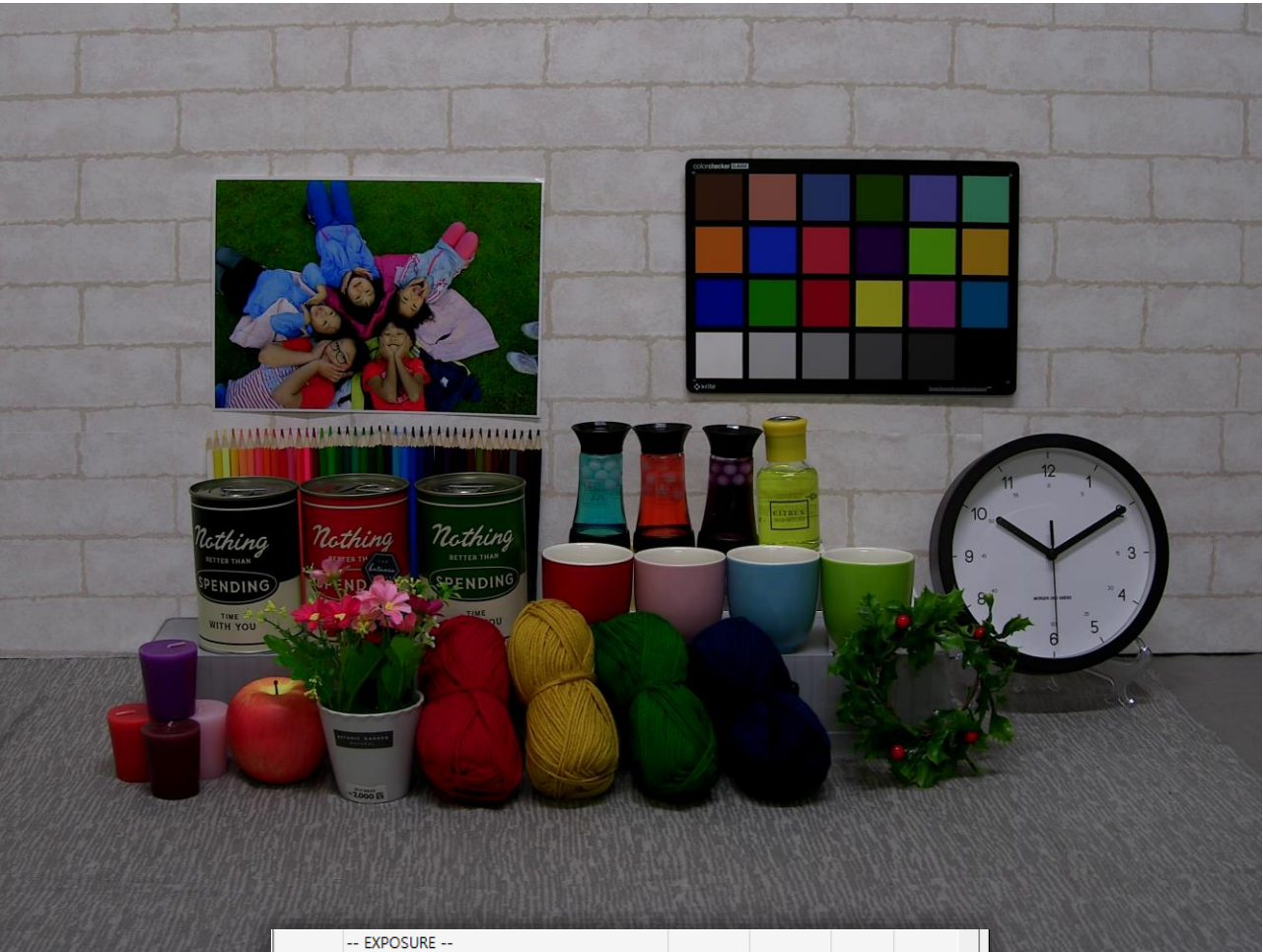


- 1) Load, Save videocore_sw.par file.
- 2) List up all ISP parameters. User can transmit value by writing value in TX tap.
- 3) Display Descriptions. Each parameter has its own description that explains features.
- 4) Control parameters. Move by title name, Read/Write value by UART Transmit.
 - Feedback Read : When user read parameter, change TX value.
 - Feedback Write : When user write parameter, update RX value
- 5) Search parameter ID or name by combobox.

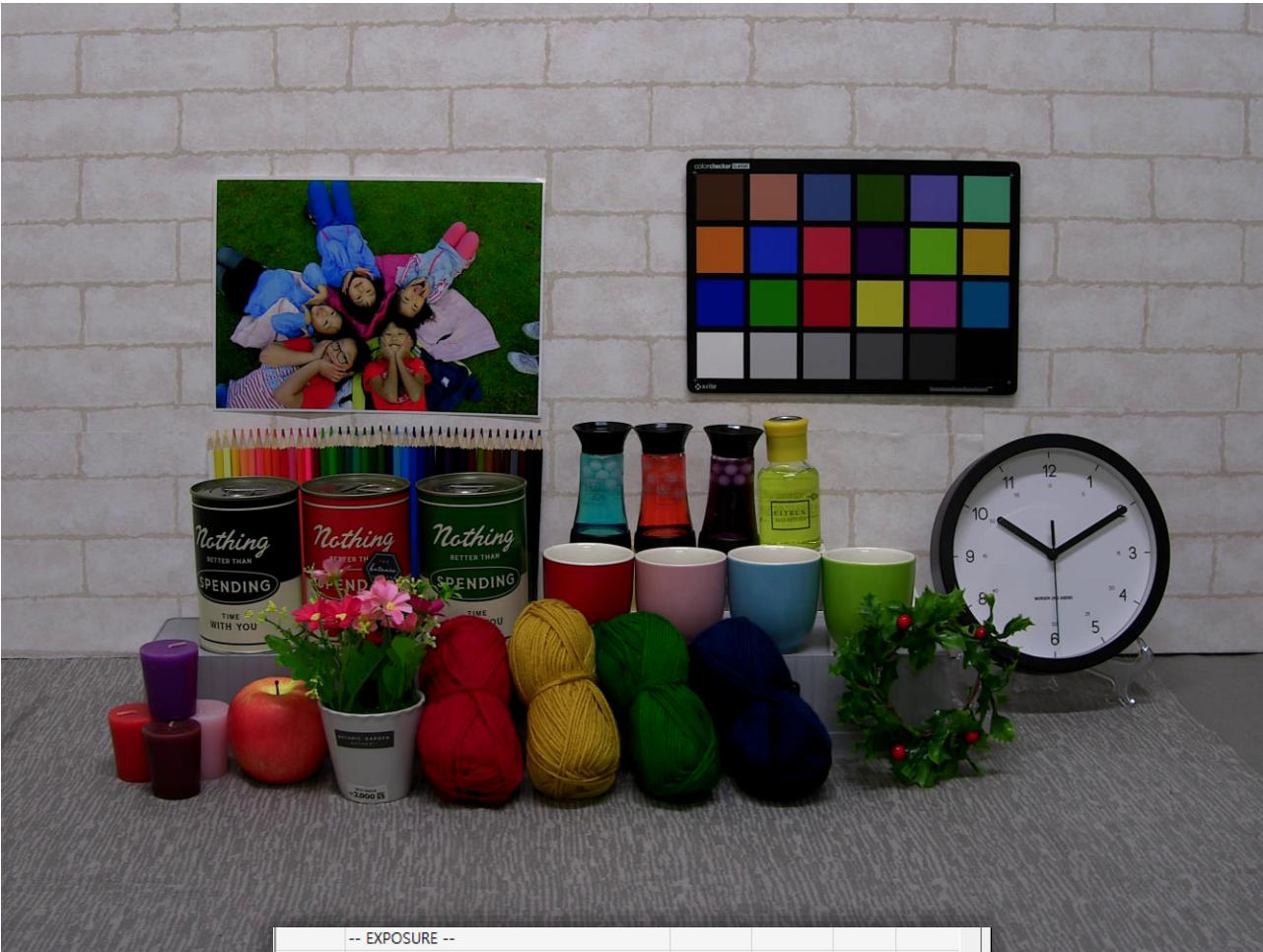


- Auto Exposure (Brightness)

(./streamer -en 1,1 -main 2592,1944,30,4000,3 &)



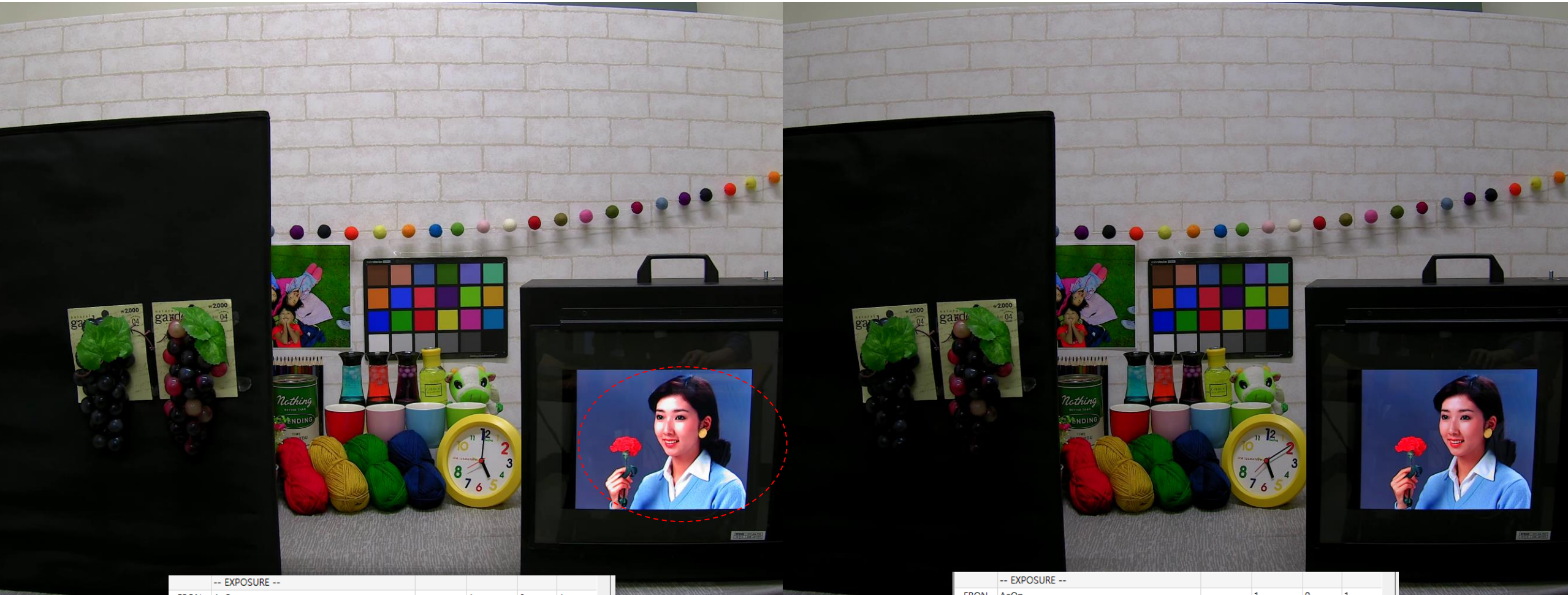
-- EXPOSURE --				
EBON	AeOn	1	0	1
EBTD	Brightness	128	0	255
EBTN	BrightnessMin	70	0	100
ESON	AntiSatOn	1	0	1
ESWT	SatBrt	2	0	20



-- EXPOSURE --				
EBON	AeOn	1	0	1
EBTD	Brightness	160	0	255
EBTN	BrightnessMin	70	0	100
ESON	AntiSatOn	1	0	1
ESWT	SatBrt	2	0	20

- Auto Exposure (Anti-Saturation)

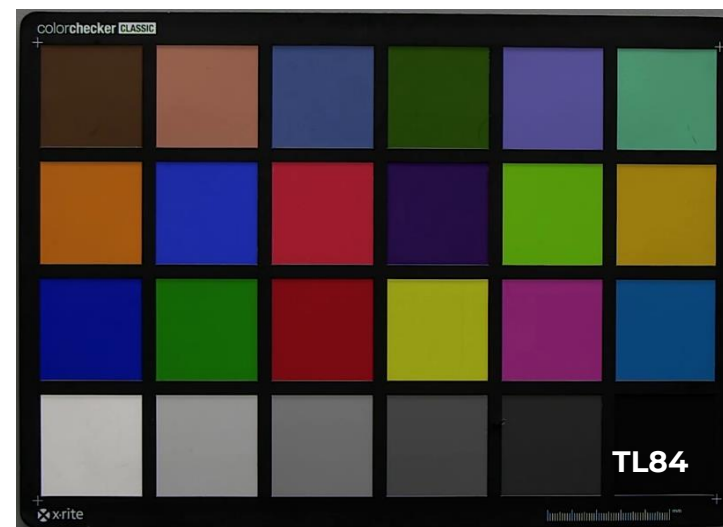
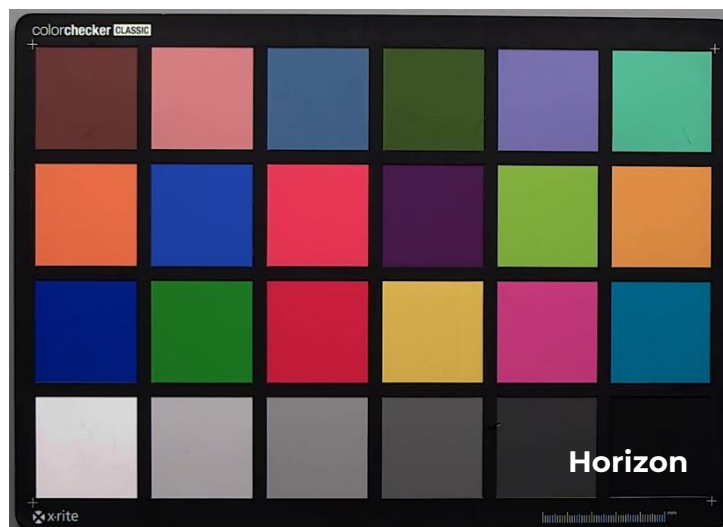
(./streamer -en 1,1 -main 2592,1944,30,4000,3 &)



-- EXPOSURE --					
EBON	AeOn		1	0	1
EBTD	Brightness		160	0	255
EBTN	BrightnessMin		70	0	100
ESON	AntiSatOn		1	0	1
ESWT	SatBr		2	0	20

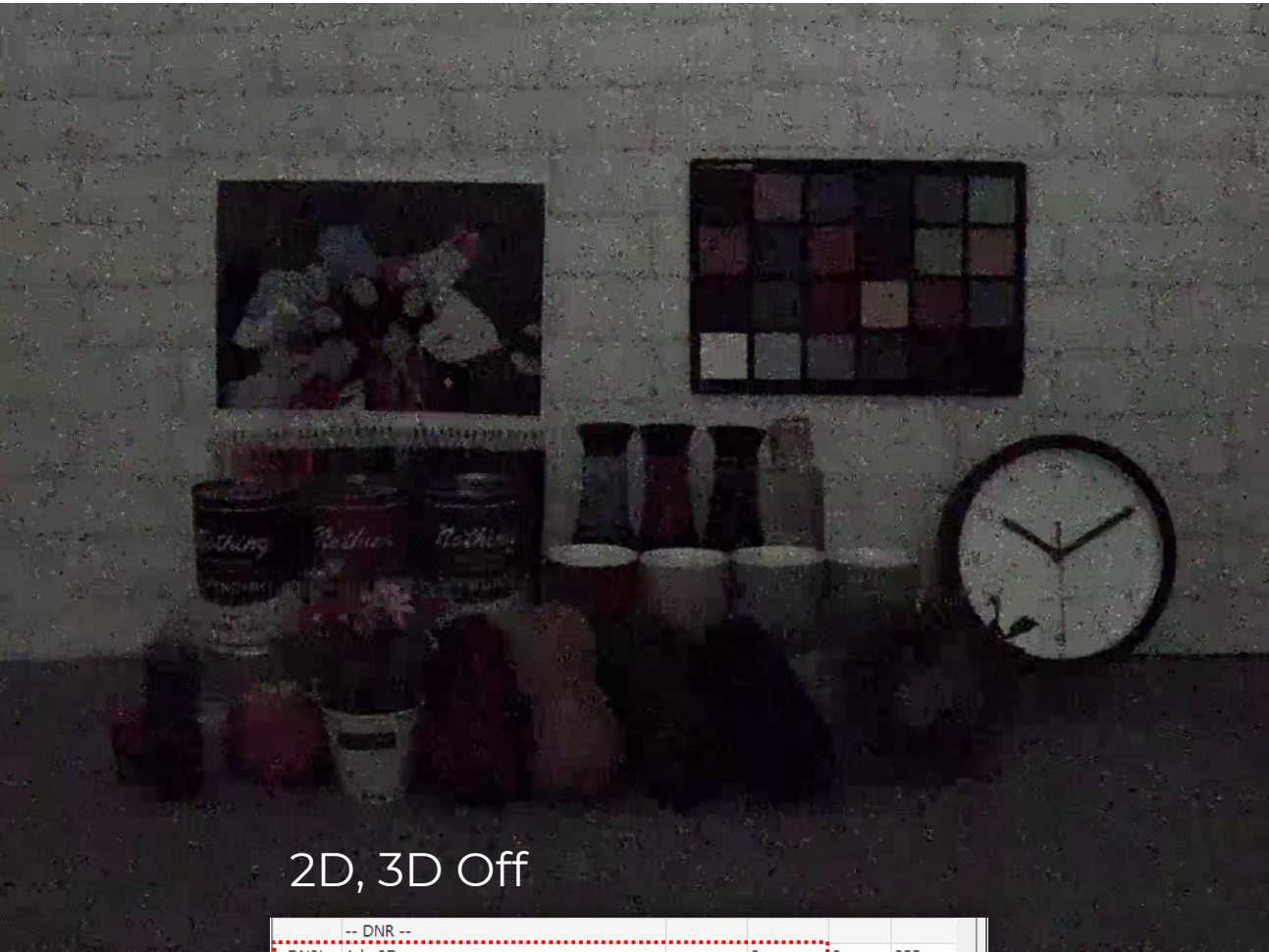
-- EXPOSURE --					
EBON	AeOn		1	0	1
EBTD	Brightness		160	0	255
EBTN	BrightnessMin		70	0	100
ESON	AntiSatOn		1	0	1
ESWT	SatBr		20	0	20

- Auto White Balance (A, Cool White, Day Light, Horizon, TL84)



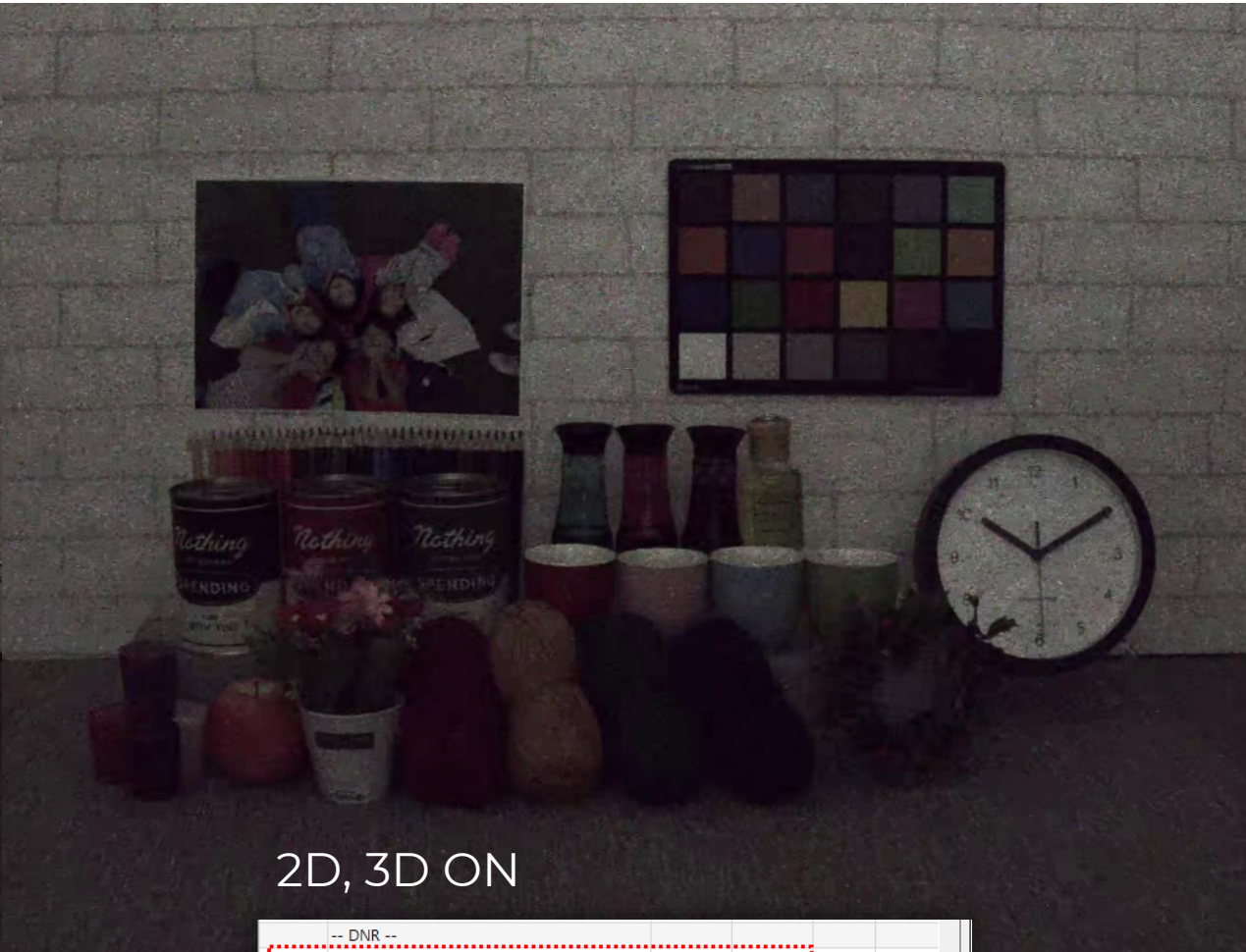
- DNR (0.1Lux)

(./streamer -en 1,1 -main 2592,1944,30,4000,3 &)



2D, 3D Off

	-- DNR --				
DN3L	Adnr3D	0	0	255	
DN3N	Adnr3D_Ngt	153	0	255	
DN3I	DnrIncrease	1	0	1	
DN2D	Adnr2D	0	0	255	
DN2N	Adnr2D_Ngt	96	0	255	

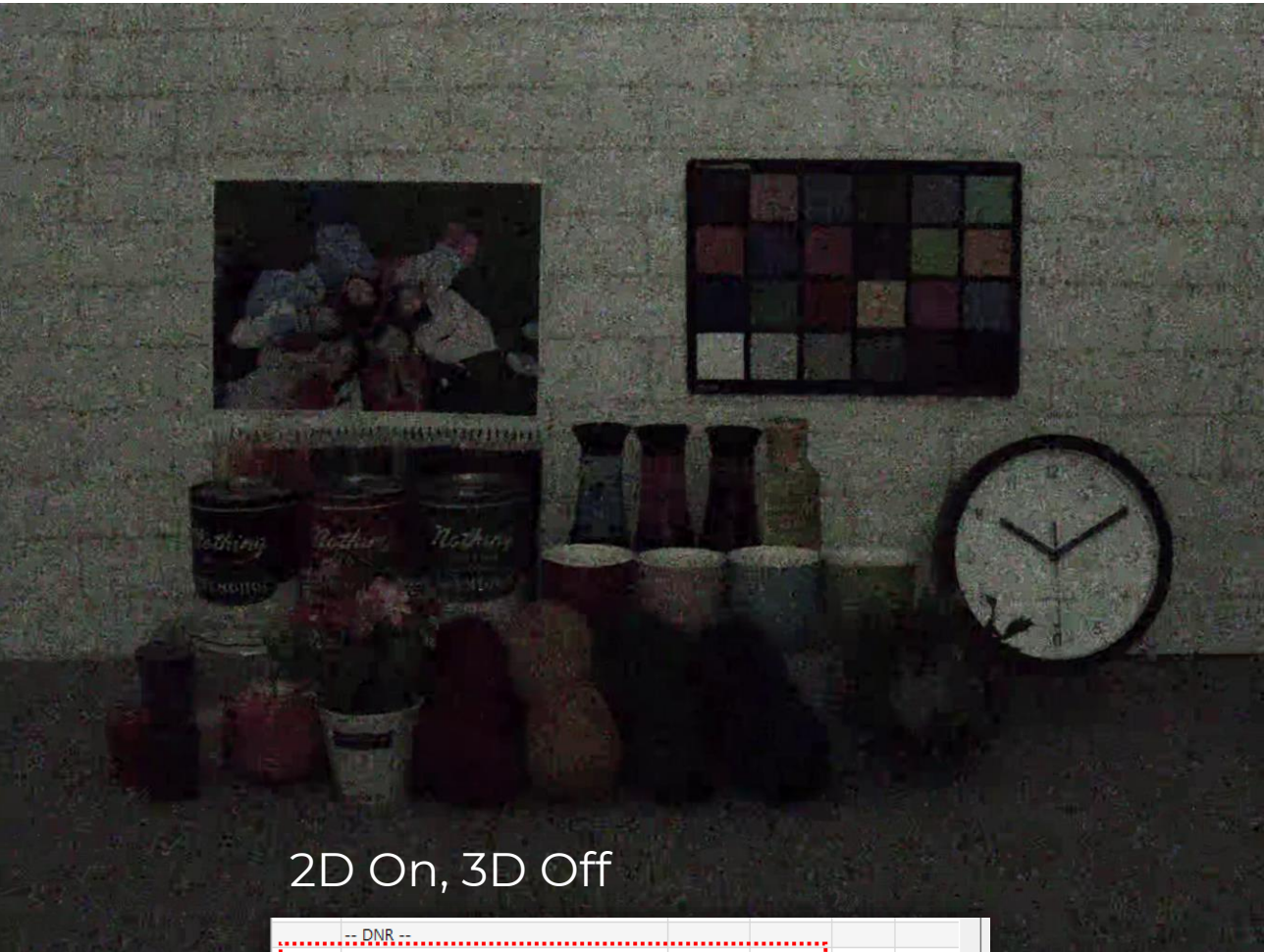


2D, 3D ON

	-- DNR --				
DN3L	Adnr3D	51	0	255	
DN3N	Adnr3D_Ngt	153	0	255	
DN3I	DnrIncrease	1	0	1	
DN2D	Adnr2D	8	0	255	
DN2N	Adnr2D_Ngt	96	0	255	

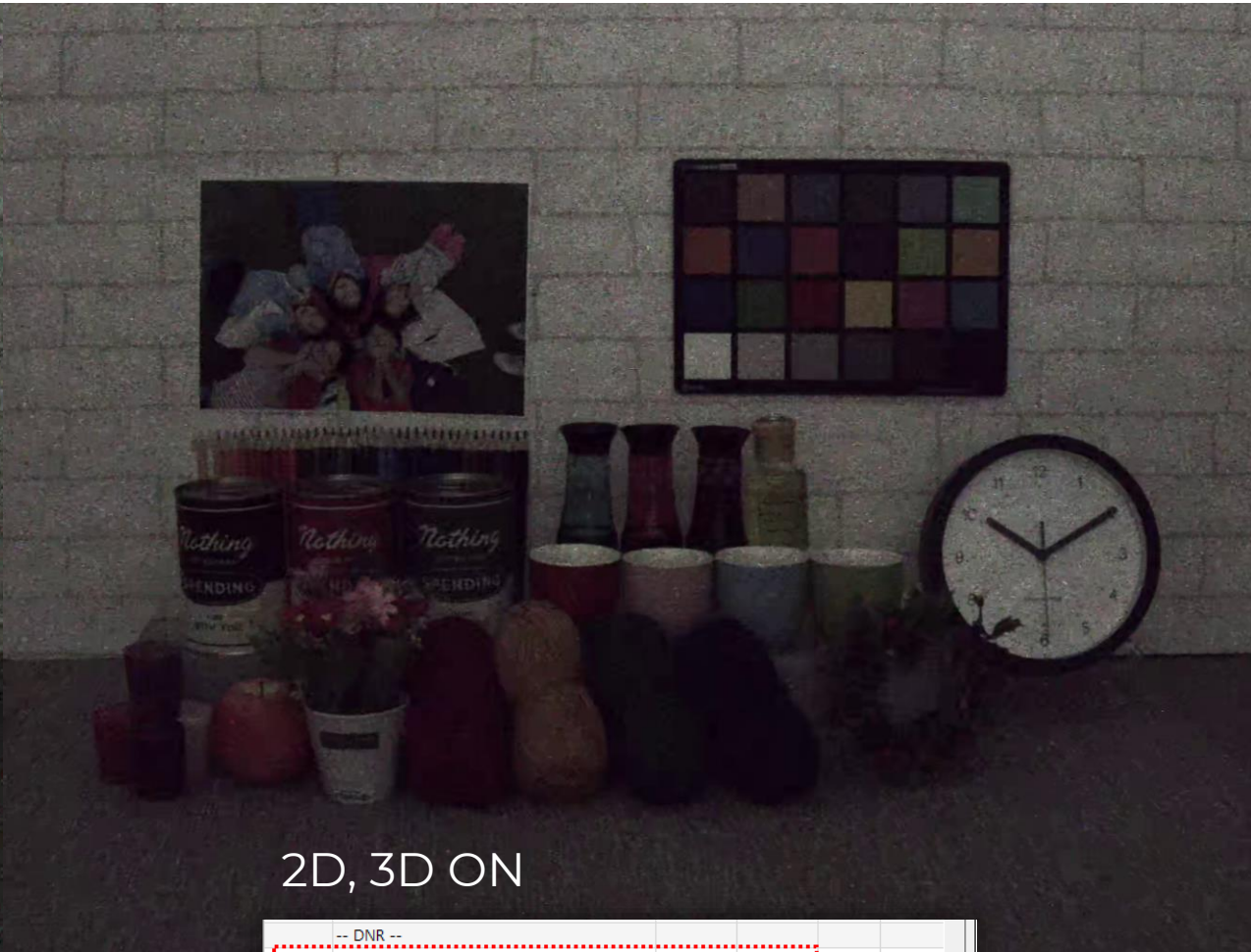
- DNR (0.1Lux)

(./streamer -en 1,1 -main 2592,1944,30,4000,3 &)



2D On, 3D Off

	-- DNR --				
DN3L	Adnr3D	0	0	255	
DN3N	Adnr3D_Ngt	153	0	255	
DN3I	DnrIncrease	1	0	1	
DN2D	Adnr2D	8	0	255	
DN2N	Adnr2D_Ngt	96	0	255	

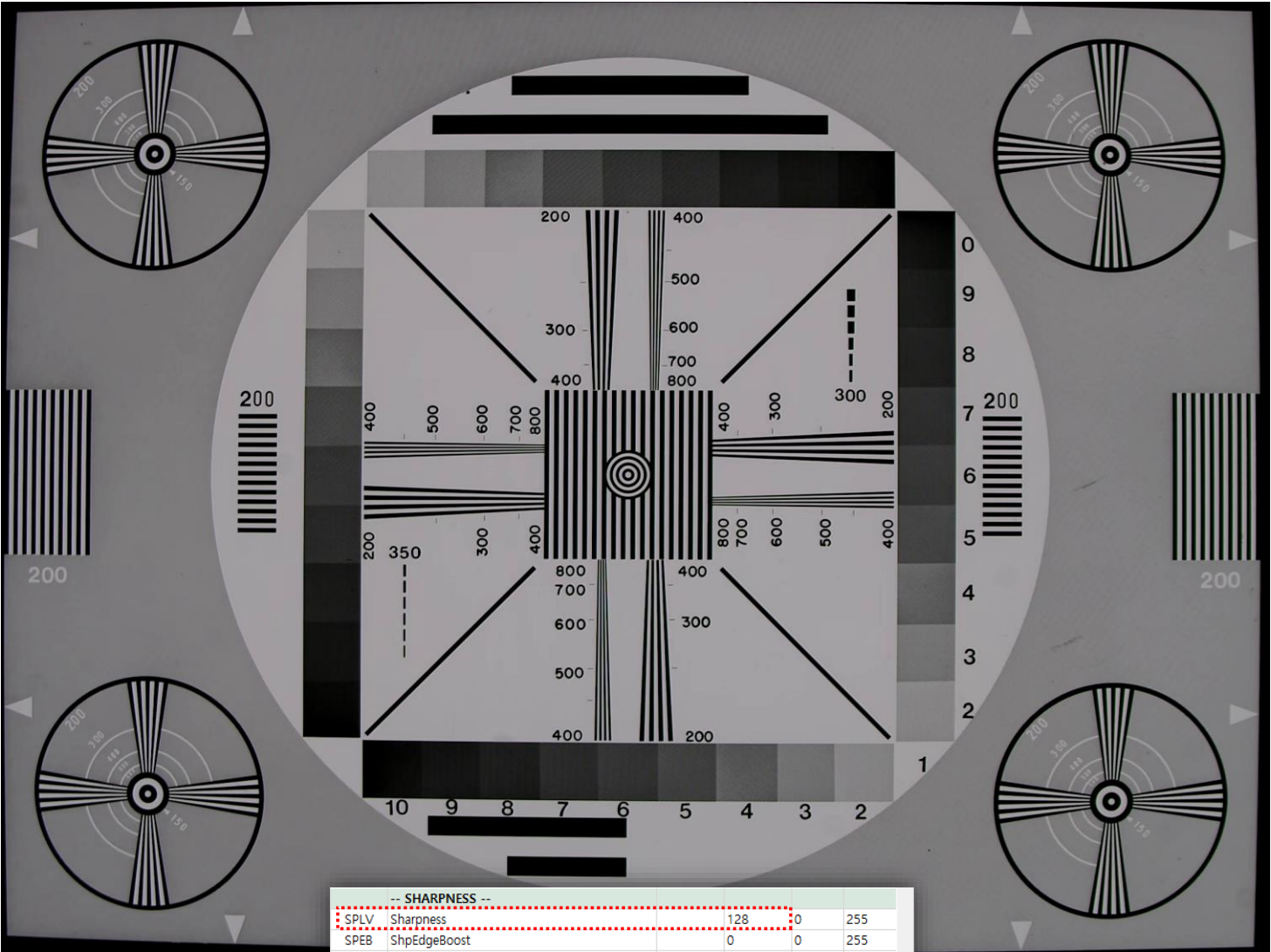


2D, 3D ON

	-- DNR --				
DN3L	Adnr3D	51	0	255	
DN3N	Adnr3D_Ngt	153	0	255	
DN3I	DnrIncrease	1	0	1	
DN2D	Adnr2D	8	0	255	
DN2N	Adnr2D_Ngt	96	0	255	

- Sharpness (Resolution Chart)

(./streamer -en 1,1 -main 2592,1944,30,4000,3 &)



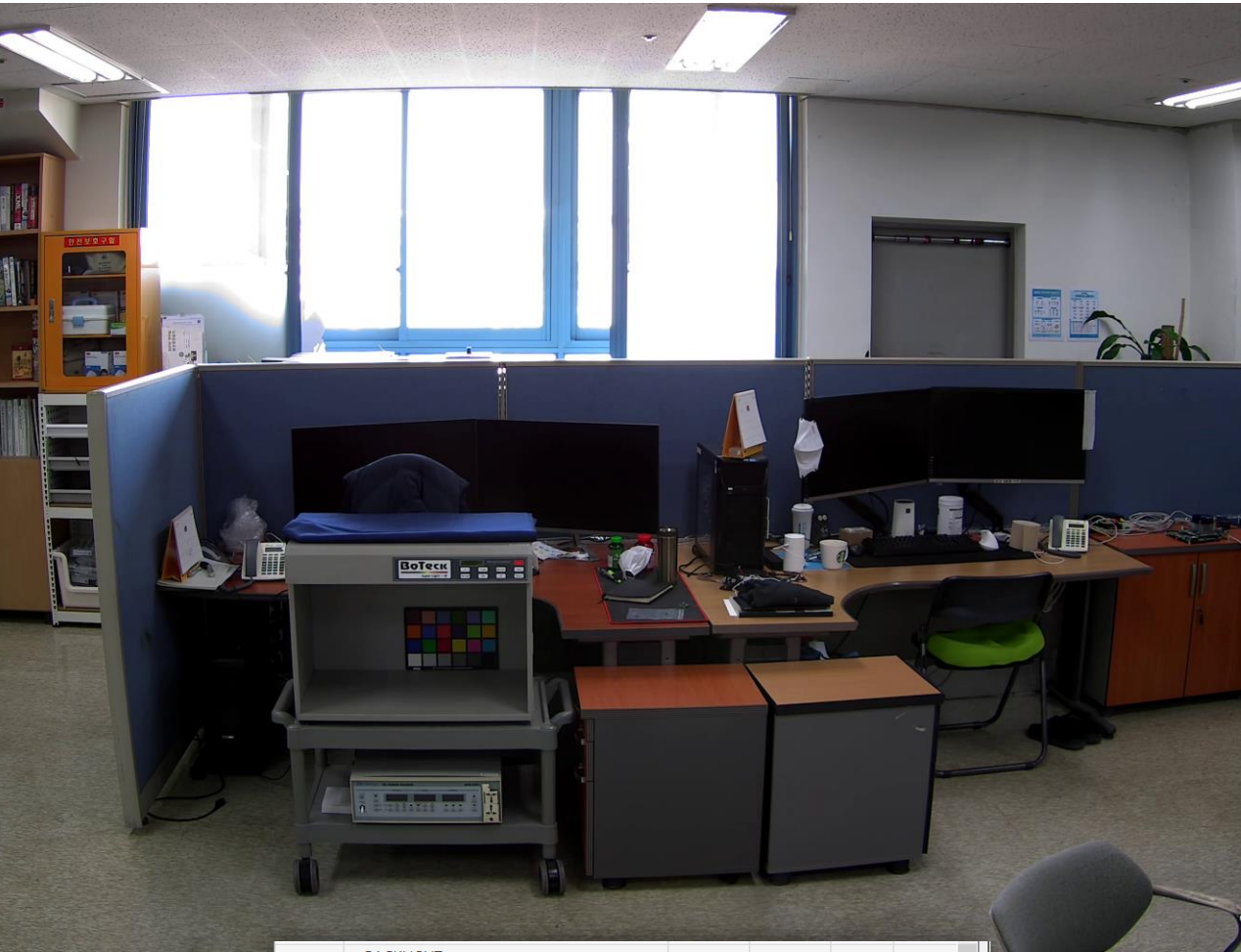
-- SHARPNESS --				
SPLV	Sharpness	128	0	255
SPEB	ShpEdgeBoost	0	0	255
SPEL	ShpEdgeLimit	16	0	255
SPBE	ShpBigEdge	32	0	255



* EN675 has De-Mosaicing Filter

- HDR (Normal Scene)

(./streamer -en 1,1 -main 2592,1944,30,4000,3 &)



-- BACKLIGHT --				
BLMD	BackLight	0	0	3
BLHT	HiMaskThrs	18	0	20
BLHC	HiMaskColorSel	7	0	8
BLBM	BlcMode	0	0	8



-- BACKLIGHT --				
BLMD	BackLight	3	0	3
BLHT	HiMaskThrs	18	0	20
BLHC	HiMaskColorSel	7	0	8
BLBM	BlcMode	0	0	8

- HDR (ISO14524 Step Chart)

(./streamer -en 1,1 -main 2592,1944,30,4000,3 &)



-- WDR --				
WMOD	WdrMode	1	0	2
WWTL	WdrWgt	0	0	2
WBTL	AE_WDR_LTGT_OFST2	63	0	255
WBTS	AE_WDR_STGT_OFST2	119	0	255
WBTM	AE_WDR_MTGT_OFST2	90	0	255

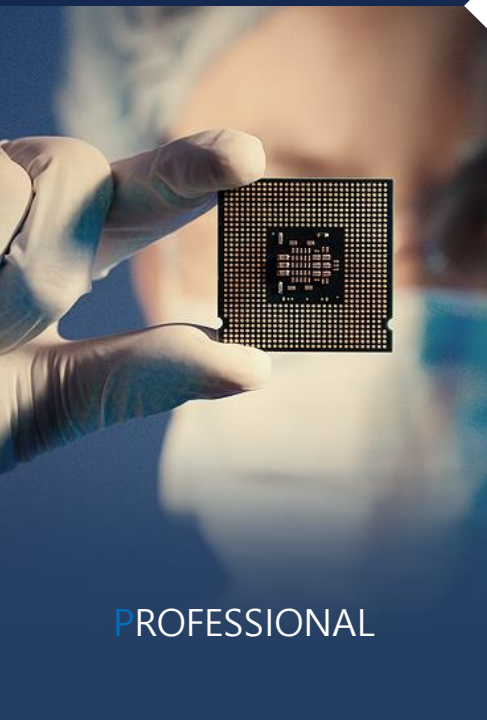
-- WDR --				
WMOD	WdrMode	2	0	2
WWTL	WdrWgt	0	0	2
WBTL	AE_WDR_LTGT_OFST2	63	0	255
WBTS	AE_WDR_STGT_OFST2	119	0	255
WBTM	AE_WDR_MTGT_OFST2	90	0	255



EX-SDI™



SURVEILLANCE



PROFESSIONAL



CONSUMER

Thank You!

The great eyes of the world!