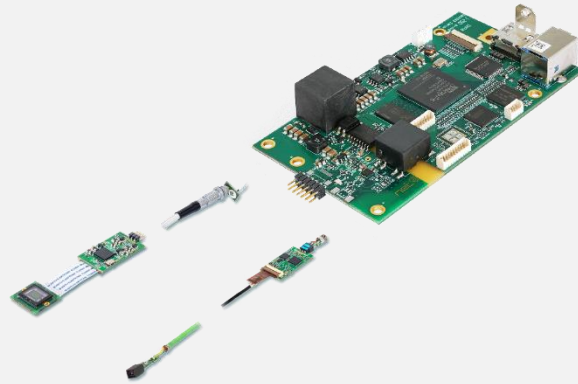


HDselect is a vision solution for medical endoscopy. The special feature enabling various endoscopy applications – flexible, rigid and single-use – to be controlled with a universal CCU offers major advantages to users. Regardless of what type of image sensor the camera control unit is combined with, the result is always excellent image quality in the output format 1920x1080p60. Thanks to the plug & play feature, the surgical assistant can quickly attach various endoscopes.



Type of Application	Multi-use				Single-use		
Camera Module Unit	CSH 131T-M	CSH 118C-M	CSH118F-M	HDR 3535 C5	CSH 131T	CSH 118C	CSH 118F
Image sensor	OCHTA	OV6946	OCHFA	IMX462 ²	OCHTA	OV6946	OCHFA
Sensor size	1/31"	1/18"	1/17.5"	1/2.8"	1/31"	1/18"	1/17.5"
Native resolution [pixel]	400 x 400	400 x 400	720 x 720	1920 x 1080	400 x 400	400 x 400	720 x 720
Max. display resolution [pixel]	1080 x 1080	1080 x 1080	1080 x 1080	1920 x 1080	1080 x 1080	1080 x 1080	1080 x 1080
Camera head size [mm]	0.65 x 0.65	1 x 1	1.15 x 1.15	18 x 18	0.65 x 0.65	1 x 1	1.15 x 1.15
Max. cable length: head to handpiece ³	2 m	2 m	2 m	50 mm	2 m	2 m	2 m
Type	CMOS						
Colour depth (HDMI-out)	8 bit						
Frame rate (HDMI-out) [fps]	60						
Board size [mm]	45 x 14.5	45 x 14.5	8,4 x 15	34 x 18	8,4 x 15	8,4 x 15	8,4 x 15
Operating temperature	0 to 40°C						

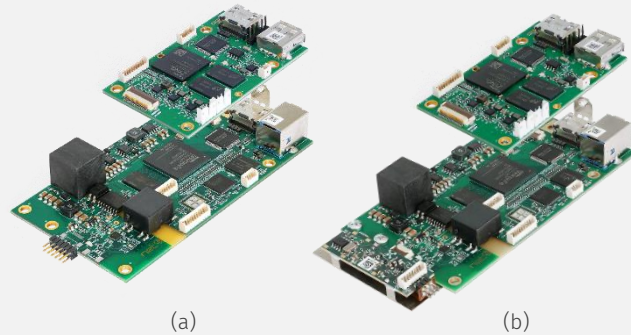
- 1 available with LED driver for continuous exposure setting
- 2 former image sensor IMX222 replaced by IMX462 as of Q3/2023
- 3 see drawing on page 3 for detailed information



Camera Control Unit (CCU) and optional Recording Module

The images on the right show the recording module on top. In regard of the endoscopic application two CCU types are available:

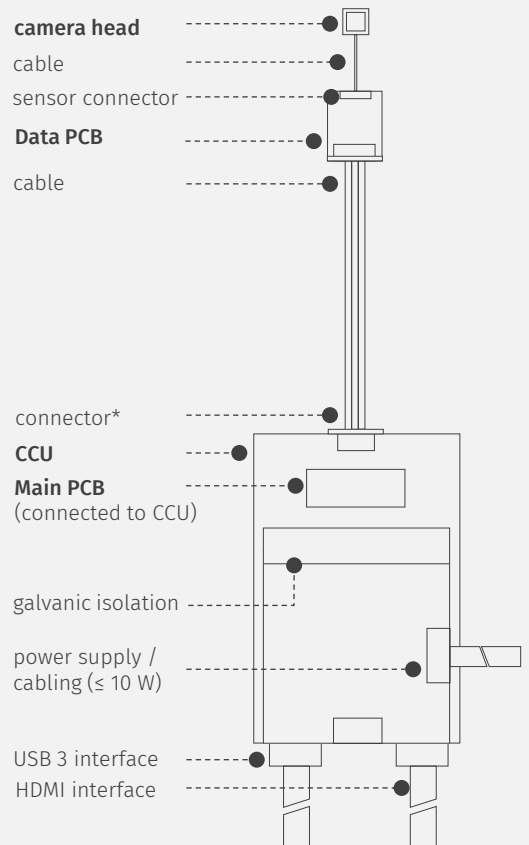
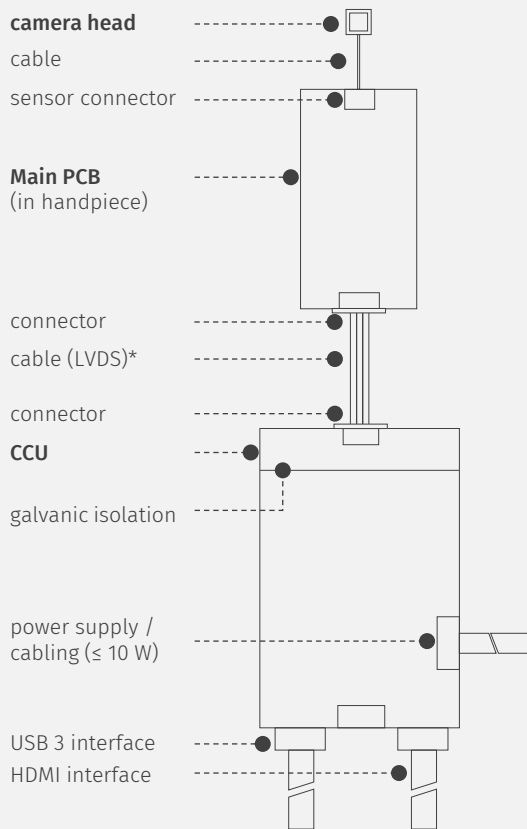
- (a) CCU for multi-use applications
- (b) CCU for single-use applications with integrated Main PCB



Type of Application	Multi-use				Single-use		
Camera Module Unit	CSH 131T-M	CSH 118C-M	CSH 118F-M	HDR 3535 C5	CSH 131T	CSH 118C	CSH 118F
Cable from Camera Control Unit (CCU) to Main PCB					Cable from Main PCB to Data PCB		
Max. length [m]	3	3	3	5	2	2	2
Diameter [mm]	6.2	6.2	6.2	6.2	3	3	3
					Size of Data PCB		
					15 x 8.4 mm		
Camera Control Unit	HDR 1330 CHx				HDR 1330 CHx DP		
Cable connector	6 pin (NET specific configuration: power, GND, I2C, LVDS, program)						
Patient safety	galvanic isolation (Type BF-classified /Body Floating)						
Power consumption	P < 10 W, U = 12 V ±10 %						
Power supply connector	3 pin ELCO, NET Standard						
Power LED	optional						
Board size [mm]	110 x 60						
Interfaces							
HDMI connector	1080p60 (DVI signal)						
USB	USB 3.2 Gen1						
Software				Recording Module HDR1330 REC			
Direct Show Filter (Direct-X)	For use of camera in non-NET specific software, e.g. VLC media player, amcap			Board size [mm]	45 x 73		
Operating System	Compatible with Windows 32/64 bit			Patient safety	Type BF-classified /Body Floating		
NET Viewer	- Live video display - Video recording and capture function - Customization of logo on request			Power	P = 3 W, U = 12 V ±10 %		
Settings	Brightness, contrast, white balance, saturation, hue, horizontal flip, color control, AE settings (e.g. exposure)			Interfaces	HDMI 1080p60 (DVI signal) USB 2.0 host		
				Features	Recording in 1080p30 AVI format, image capture		

Drawing

Type of Application	Multi-use	Single-use
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*optional

Upon request: LED driver, keyboard, EMI approved housing.

Drawings and images not to scale.

Please note that all data and illustrations are not binding and subject to error, change and omissions without notice.