



TAPIX *camera*

TAPIX MBM 1300@500

Reference Manual

ENG

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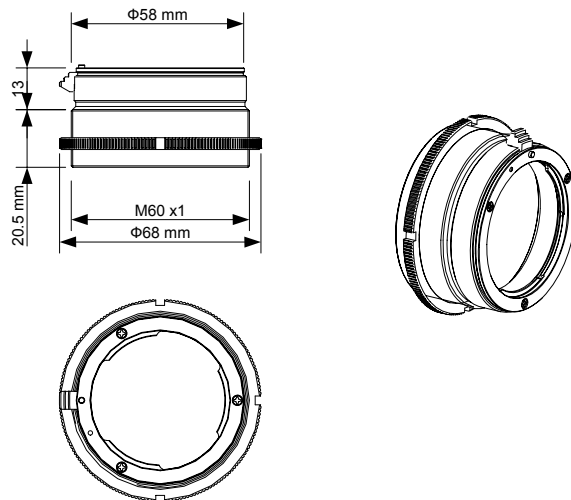
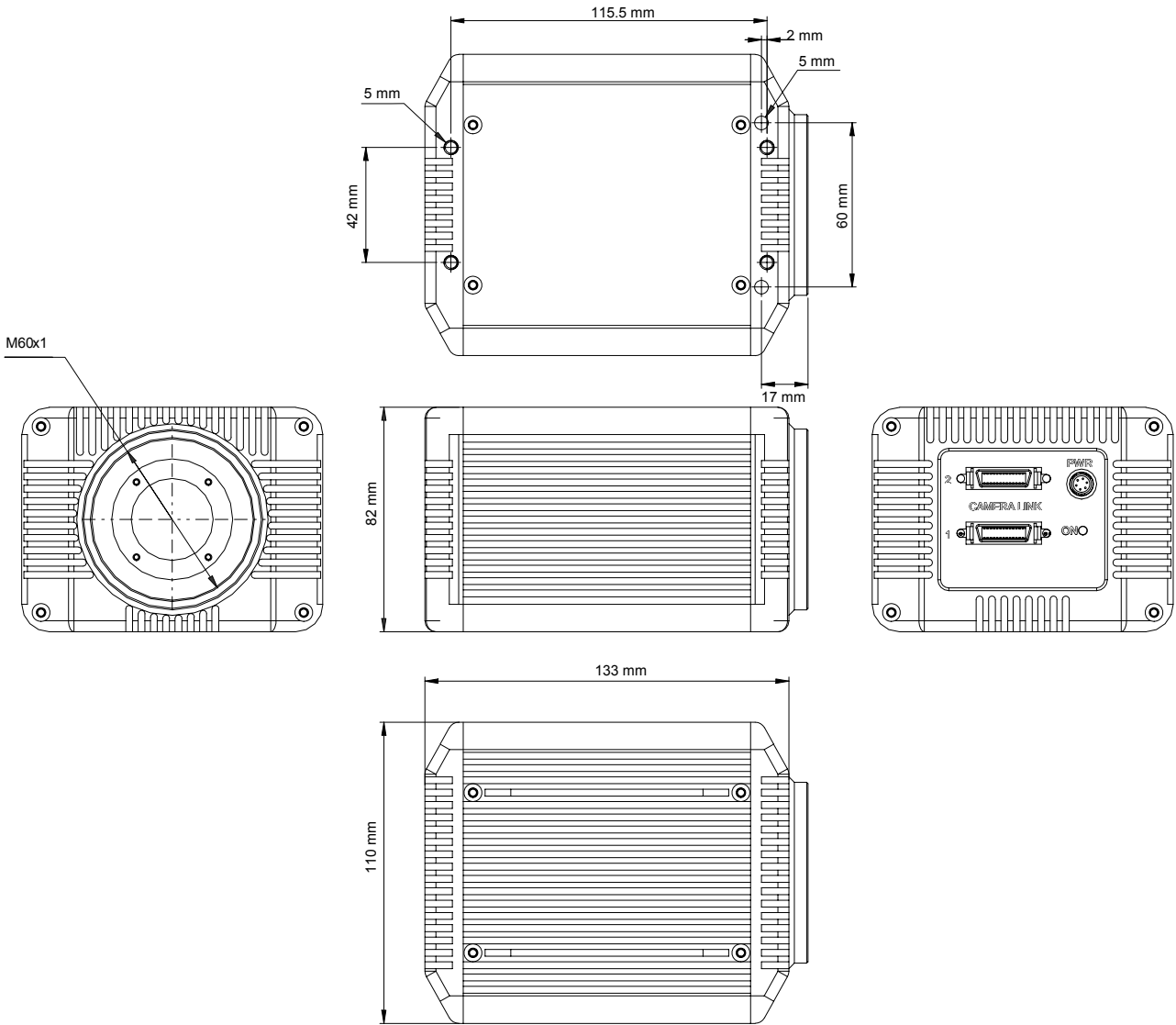
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1 Global View

1.1 Front View

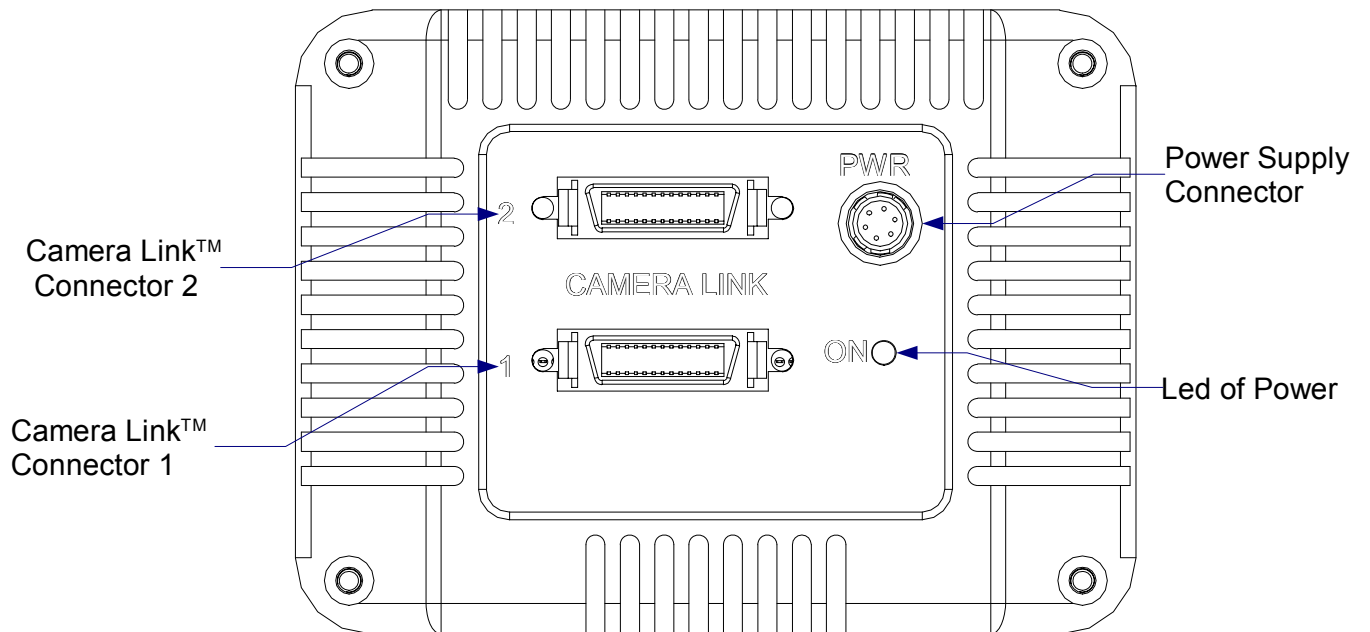


2 Mechanical Dimensions

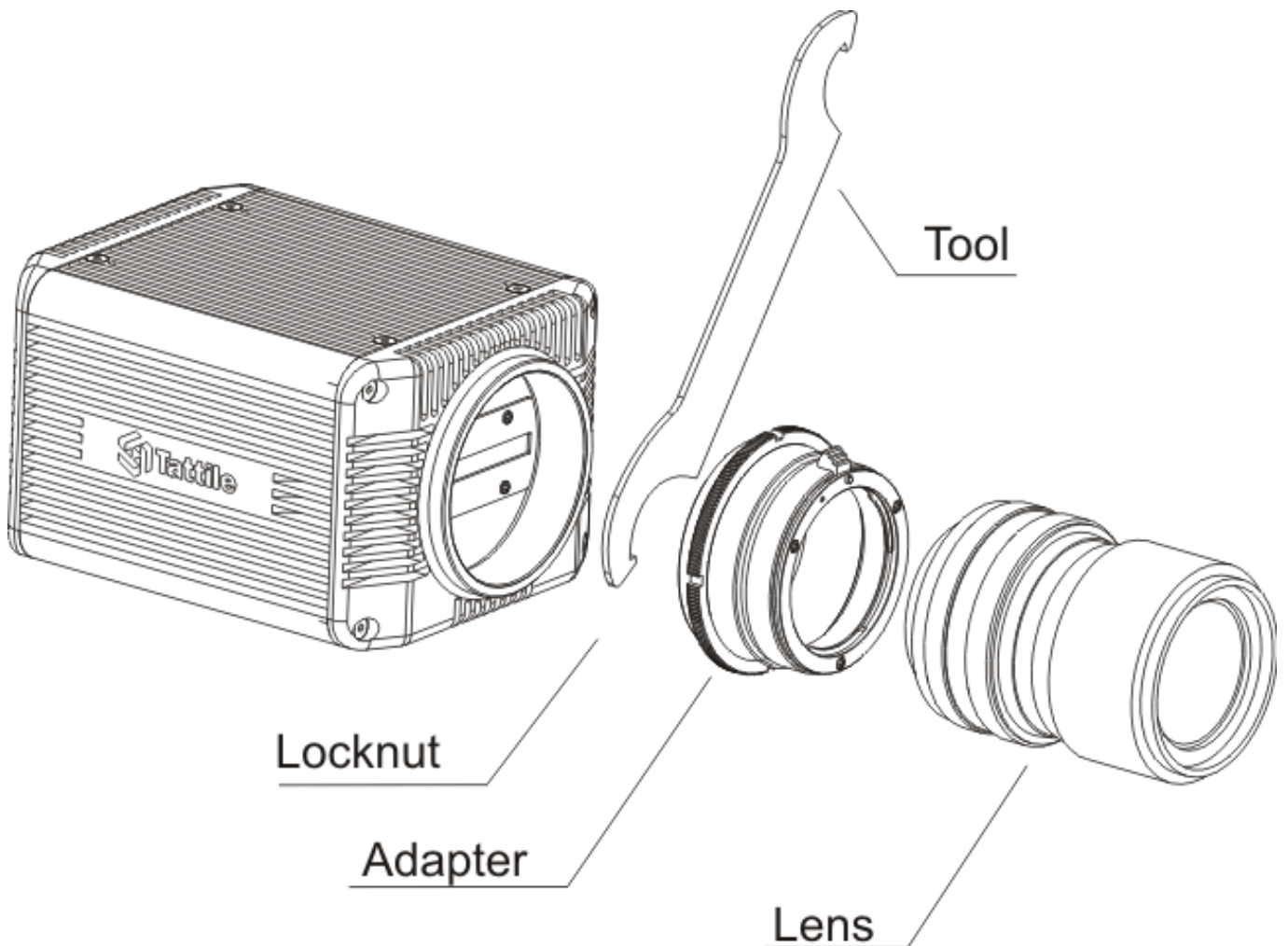


3 Silkscreen Printings

3.1 Rear View



4 How to assembly the lens on Tapix Camera



1. Insert the adapter into the lens to the end, and tighten it with the tool.
2. Tighten the locknut to the adapter.
3. Screw the all on TAG Camera.
4. Set the lens to achieve the optimum focus.
5. When the lens is setted, tighten the locknut with the tool.

5 General Characteristics

5.1 Characteristics

- Camera Power Supply: 24VDC \pm 10%
- Camera consumption: 5W @ 24Volt (without every elaboration)
- CCD Characteristics: See Table 1
- Communication Port: 2x40MHz data rate via Camera Link™ high speed serial interface

5.2 Processor:

- Microprocessor: NIOS Processor

5.3 Mechanical Dimensions

- Mechanical Dimensions: 139mm x 110mm x 82mm (without lens adapter)
159mm x 110mm x 82mm (with F mount adapter)
- Weight: 1300 g (without F mount adapter)
- Conformity: **Conforms to CE standard.**

5.4 Standard Supply

- TAPIX Camera.
- Reference Manual.

5.5 Work Tension

<i>Description</i>		<i>Typical</i>	<i>Note</i>
<i>V_{cc}</i>	Supply voltage	+24 V	Provide a stable supply \pm 10%
<i>GND</i>	Ground	0 V	

5.6 Operating Condition

<i>Description</i>		<i>Min</i>	<i>Max</i>	<i>Note</i>
<i>T_{op}</i>	Operating temperature	0°C	50° C	
<i>Humidity</i>	Operating humidity	35,00%	85,00%	WHITOUT CONDENSING

6 CMOS General Characteristics

6.1 CMOS MT9M413C36STM Specifications

<i>Parameter</i>	<i>Typical Value</i>
Array Format:	1,280H x 1,024V (1,310,720 pixels)
Aspect Ratio:	5:4
Pixel Size:	12.0µm x 12.0µm
Pixel Type:	TrueSNAP
Sensor Imaging Area:	H:15.36mm V:12.29mm
Diagonal:	19.67mm
Frame Rate:	0–500 fps @ (1,280 x 1,024) >10,000 fps with partial scan [e.g., 0–4,800 fps @ (1,280 x 128)]
Output Data:	660 MB/s (master clock, 66 MHz; Rate: ~500 fps)
Power Consumption:	<500mW (@ 500 fps)
Digital Responsivity:	1,600 bits/lux-sec at 550nm
Internal Intra-Scene Dynamic Range:	59dB
Supply Voltage:	+3.3V
MT9M413 Operating Temperature:	-5°C to +60°C
Output:	10-bit digital video through 10 parallel ports
Color:	Monochrome or color RGB
Shutter:	TrueSNAP freeze-frame electronic shutter
Shutter Efficiency:	>99.9%
Shutter Exposure Time:	2µs to >33ms
ADC:	On-chip, 10-bit column parallel
Package:	280-pin ceramic PGA

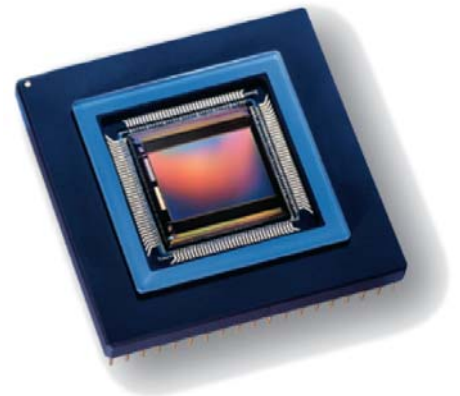


Table 1: Summary specification

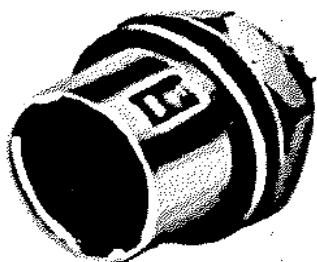
All parameters above are nominal values specified at T=23°C

Controls:	
On-Chip:	ADC controls Output multiplexing ADC calibration (integration time)
Off-Chip:	Window size and location Frame rate and data rate Shutter exposure time ADC reference

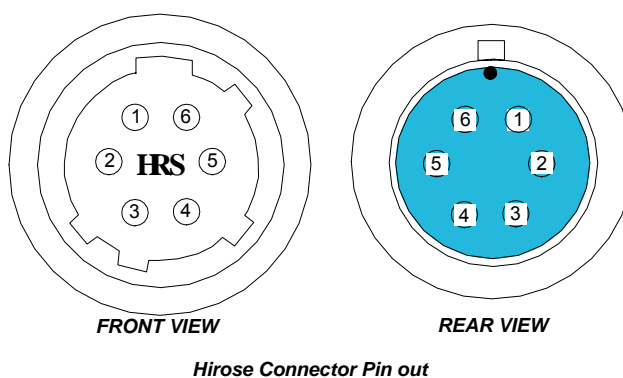
Table 2: Controls On-Chip and Off-Chip

7 Interface Connections

7.1 Power Connection



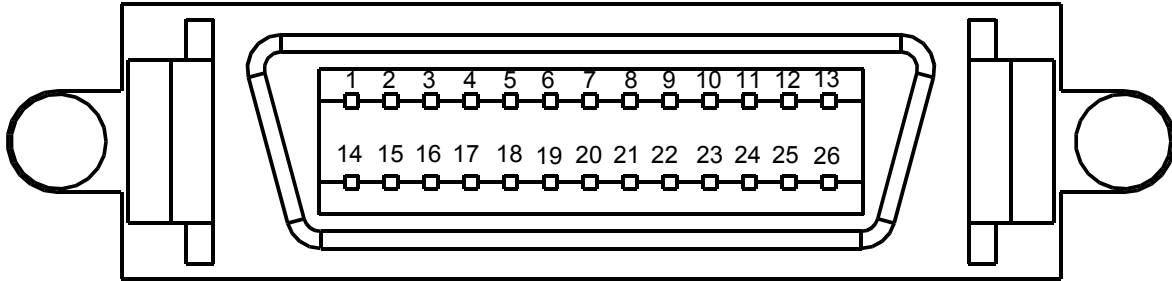
Picture 1 Hirose HR10-7R-6P



Picture 2

<i>PINOUT</i>	<i>Description</i>
1	+ Vcc
2	+Vcc
3	NOT CONNECTED
4	GND
5	GND
6	NOT CONNECTED

7.2 Camera Link™ Connectors



<i>Pinout</i>	<i>Description</i>	<i>Pinout</i>	<i>Description</i>
1	Logic Gnd via 0 ohm resistor	14	Logic Gnd via 0 ohm resistor
2	X0-	15	X0+
3	X1-	16	X1+
4	X2-	17	X2+
5	Xclk-	18	Xclk+
6	X3-	19	X3+
7	SERTC+	20	SERTC-
8	SERTFG-	21	SERTFG+
9	CC1-	22	CC1+
10	CC2+	23	CC2-
11	CC3-	24	CC3+
12	CC4+	25	CC4-
13	Logic Gnd via 0 ohm resistor	26	Logic Gnd via 0 ohm resistor

8 Instructions for a correct installation of TATTILE control equipment

Good equipment operation is guaranteed only by respecting the instructions reported in this reference manual.

TATTILE declines all responsibility for anomalous equipment operation, installed with criteria not respecting these instructions.

- Mounting of the TAPIX must be done using only M5 screws, applying 3Nm torque.

- TAPIX cable courses must be kept separate from power cables.



- Pay attention to the various connections, especially in respect to the correct polarity of the power-supply cables.

- Supply the TAPIX with a dedicated power-supply.

- The maximum length of the power supply cable is 2 mt. This cable must be shielded and be not longer than necessary.

- TAPIX must be fixed to structures well connected to the ground, mechanically stable and immune to vibration.



- Be sure that all power to your system is switched off before you make or break connections to the camera. Making or braking connection when power is on can result in damage to the camera.

9 Warranty

The warranty covering TATTILE equipment is invalidated when

1. The equipment has been opened or tampered
2. Faults have been detected that are due to incorrect connection of the power or input/output circuits
3. Faults are due to overload or non-compliance with equipment's rated specifications
4. Application conducted in conditions that do not comply with those specified for a correct installation.



Note: These conditions apply to all equipment supplied with the system.

10 Revision

The Revision Index is reported below. The various revisions can contain additional information or corrections of printing errors.

<i>Rev.</i>	<i>Date</i>	<i>Page</i>	<i>Description</i>	<i>Prepared</i>	<i>Checked</i>	<i>Approved</i>
02.00.00	25/01/05	All	First realese	Nicola G.	Fabio M.	Nicola F.
02.00.01	15/06/05	10	Changed Specification Table	Massimiliano D.	Stefano C.	Nicola F.