TAPIX camera

TAPIX LBD 512@70000

TAPIX LBD 1024@34000

TAPIX LBD 2048@16000

Reference Manual ENG

Version__02.00.00 (May 2005)

All Tattile's systems were created to be alive, smart and open products. Therefore, we give you the chance to update features and capabilities during the whole life cycle of the products.The Download area of our web site has been created to allow our Partners to download new releases of Firmware and Software: http://www.tattile.com.

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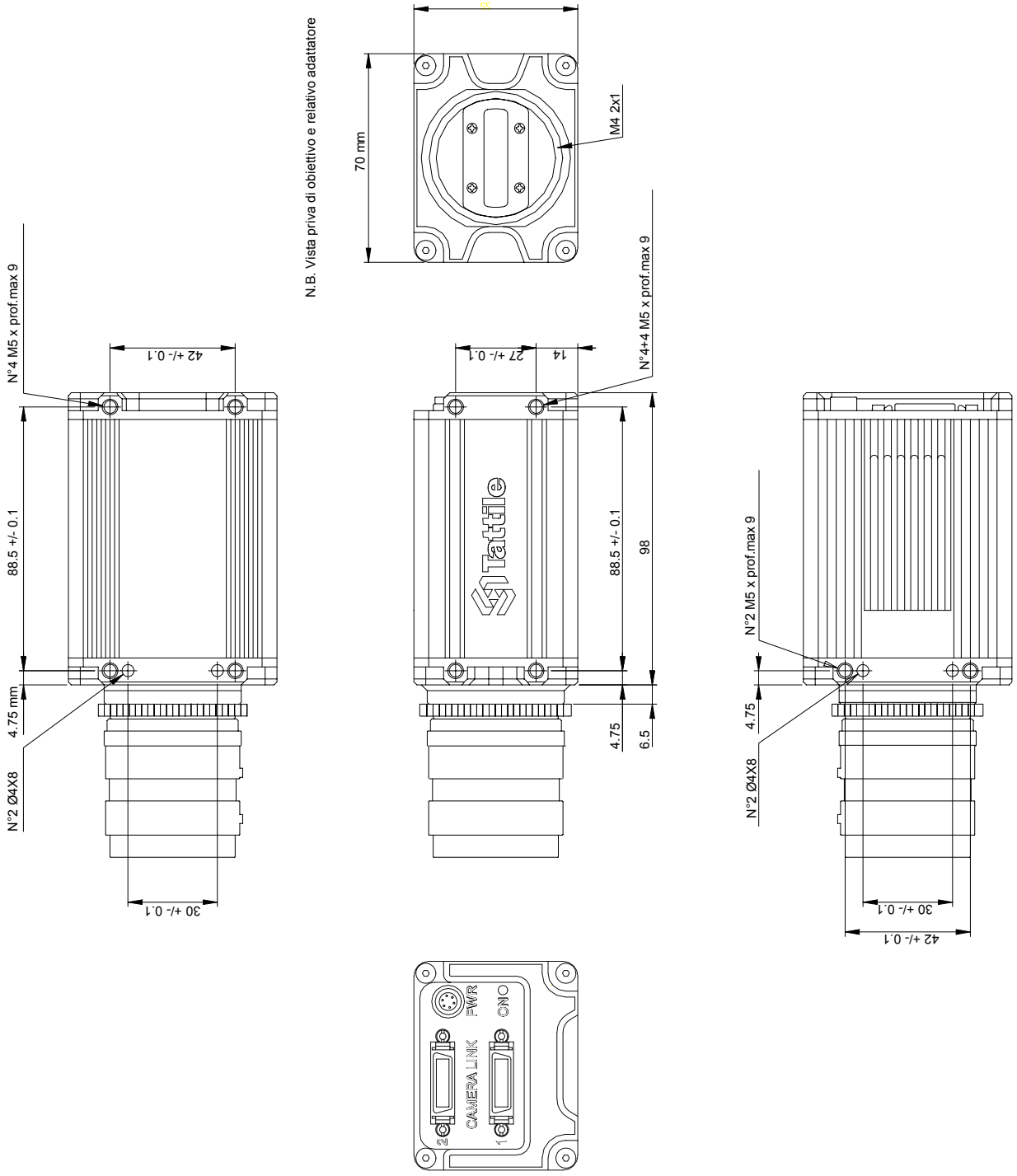
1 Global View

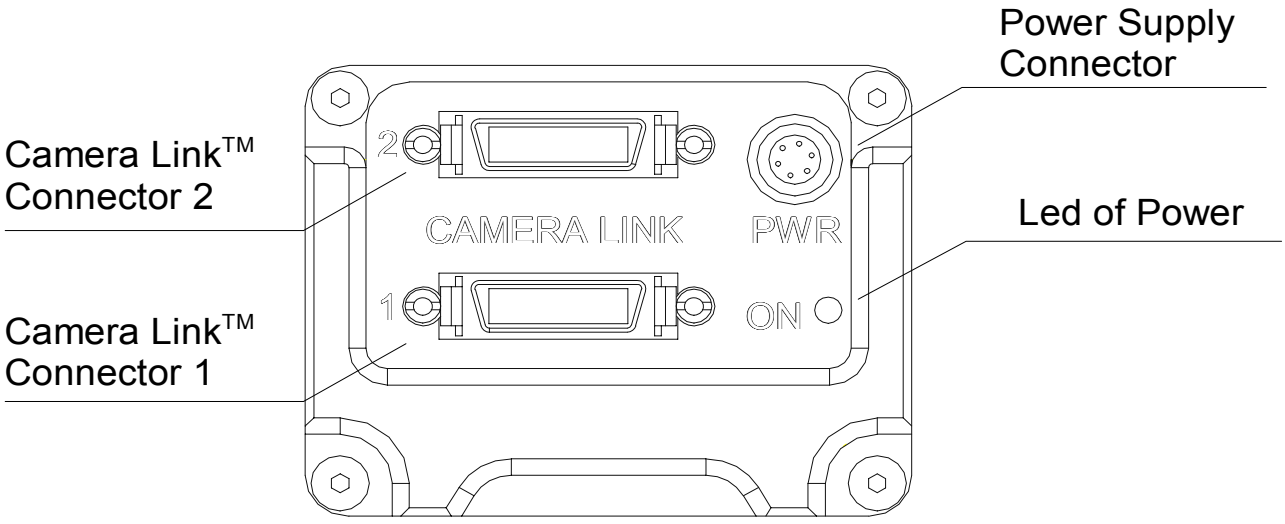
1.1 Front View

2 Mechanical Dimensions

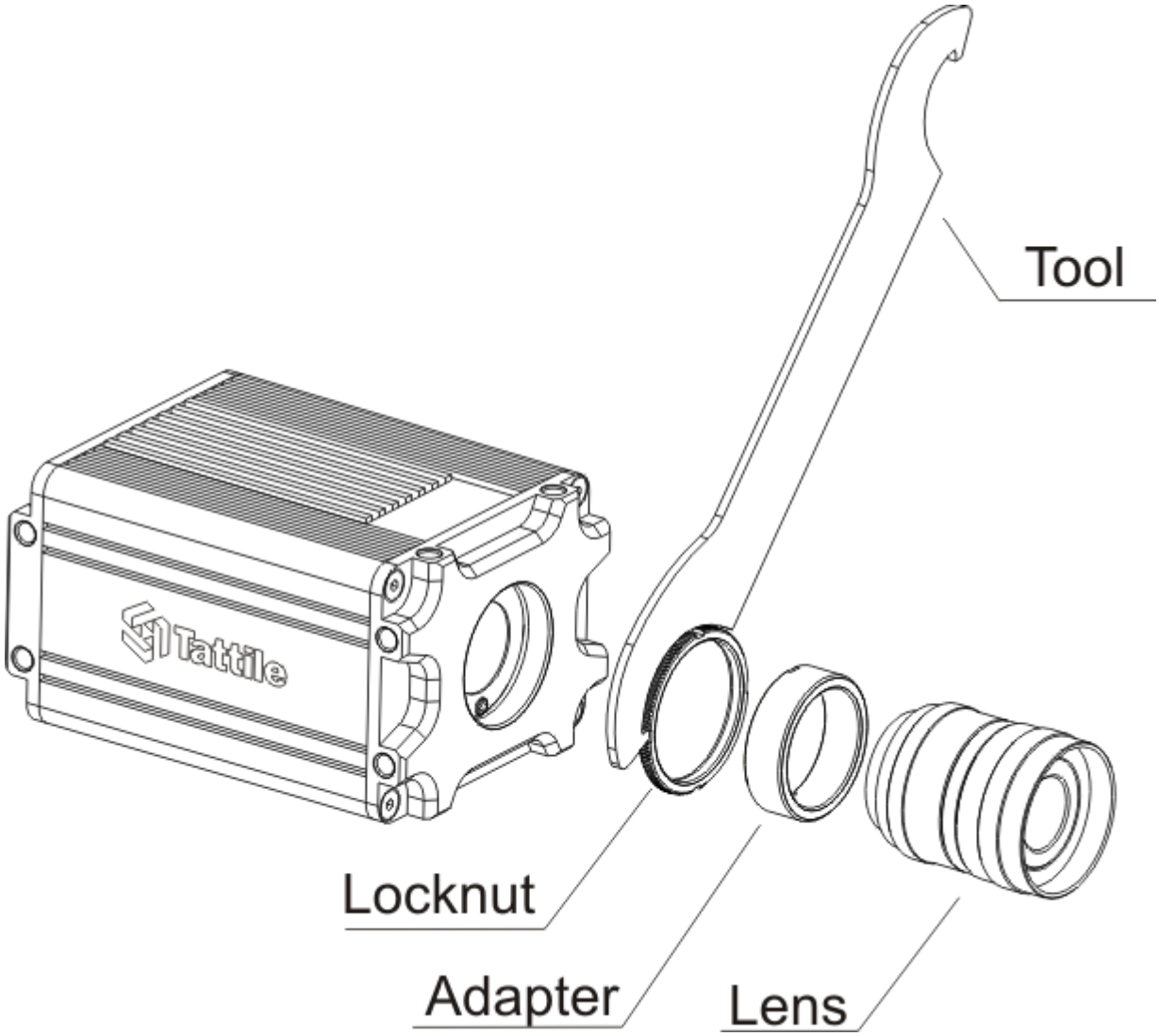


3 Silkscreen printings

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 Characteristic

5.1 Characteristic

– Camera power supply: 24Volt
– CCD Characteristic: See Table 1
– Communication port: 2x40MHz data rate via Camera Link™ high speed serial interface

5.2 Processor:

– Microprocessor: NIOS Processor
– Analogical/Digital section: 7 Converter A/D 10 bit with Gain from 0 to 36dB

5.3 Mechanical characteristic

– Mechanical dimension: 139mm x 110mm x 82mm (without lens adapter)
– Mmechanical dimension: 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

– Camera.
– Reference Manual.

5.5 Work Tension

	Description	*Typical*	*Note*
Vcc	Supply voltage	+24 V	Provide a stable supply ±10%
GND	Ground	0 V	

5.6 Operating Condition

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

5.7 CCD General Characteristic

5.8 Summary specification RLP512P

Table 1

Parameter	*Typical Value*
Pixel Count	512 elements (RLP512P)
Pixel Size	14 µm (H) x 14 µm (V)
Exposure Control	Yes
Horizontal Clocking	2Ø (5V clock amplitude)
Number of Outputs	1
Dynamic Range	>2500:1
Readout noise (rms)	
Amplifier	18 electrons
Reset Transistor	45 electrons
Total Noise Without CDS	50 electrons
Saturation Exposure	27 nJ/cm^2
Noise Equivalent Exposure	8.1 pJ/cm^2
Amplifier Sensitivity	6.6µV/electron
Saturation Output Voltage	1100 mV
Saturation Charge Capacity	167,000 electrons
Charge Transfer Efficiency	>0.99995
Peak Responsivity	41V/µJ/cm^2
PRNU	± 5%
Dead Pixels	0
Lag	1.5%
Spectral Response Range	200 nm to 1000 nm
Data Range	40 Mhz

Picture 1 PERKIN ELMER RLP512P

All parameters above are nominal values specified at T=23°C (junction temperature) and 2 Mhz clock rates.

5.9 Summary specification RLP1024P

Table 2

Parameter	*Typical Value*
Pixel Count	1024 elements (RLP1024P)
Pixel Size	14 µm (H) x 14 µm (V)
Exposure Control	Yes
Horizontal Clocking	2Ø (5V clock amplitude)
Number of Outputs	1
Dynamic Range	>2500:1
Readout noise (rms)	
Amplifier	18 electrons
Reset Transistor	45 electrons
Total Noise Without CDS	50 electrons
Saturation Exposure	27 nJ/cm^2
Noise Equivalent Exposure	8.1 pJ/cm^2
Amplifier Sensitivity	6.6µV/electron
Saturation Output Voltage	1100 mV
Saturation Charge Capacity	167,000 electrons
Charge Transfer Efficiency	>0.99995
Peak Responsivity	41V/µJ/cm^2
PRNU	± 5%
Dead Pixels	0
Lag	1.5%
Spectral Response Range	200 nm to 1000 nm
Data Range	40 Mhz

Picture 2 PERKIN ELMER RLP1024P

All parameters above are nominal values specified at T=23°C (junction temperature) and 2 Mhz clock rates.

5.10 Summary specification RLP2048P

Table 3

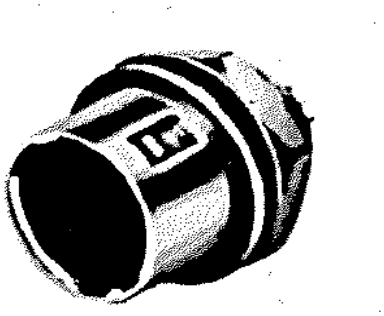
Parameter	*Typical Value*
Pixel Count	2048 elements (RLP2048P)
Pixel Size	14 µm (H) x 14 µm (V)
Exposure Control	Yes
Horizontal Clocking	2Ø (5V clock amplitude)
Number of Outputs	1
Dynamic Range	>2500:1
Readout noise (rms)	
Amplifier	18 electrons
Reset Transistor	45 electrons
Total Noise Without CDS	50 electrons
Saturation Exposure	27 nJ/cm^2
Noise Equivalent Exposure	8.1 pJ/cm^2
Amplifier Sensitivity	6.6µV/electron
Saturation Output Voltage	1100 mV
Saturation Charge Capacity	167,000 electrons
Charge Transfer Efficiency	>0.99995
Peak Responsivity	41V/µJ/cm^2
PRNU	± 5%
Dead Pixels	0
Lag	1.5%
Spectral Response Range	200 nm to 1000 nm
Data Range	40 Mhz

Picture 3 PERKIN ELMER RLP2048P

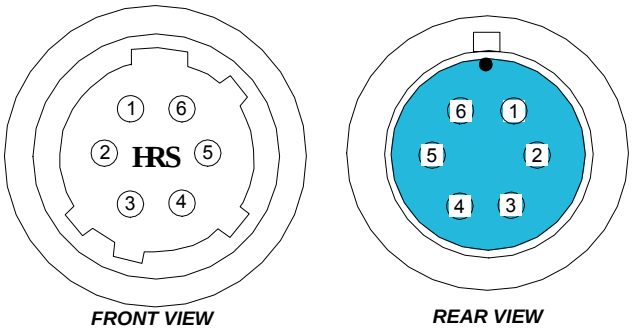
All parameters above are nominal values specified at T=23°C (junction temperature) and 2 Mhz clock rates.

6 Interface Connections

6.1 Power Connection



Picture 1Hirose HR10-7R-6P

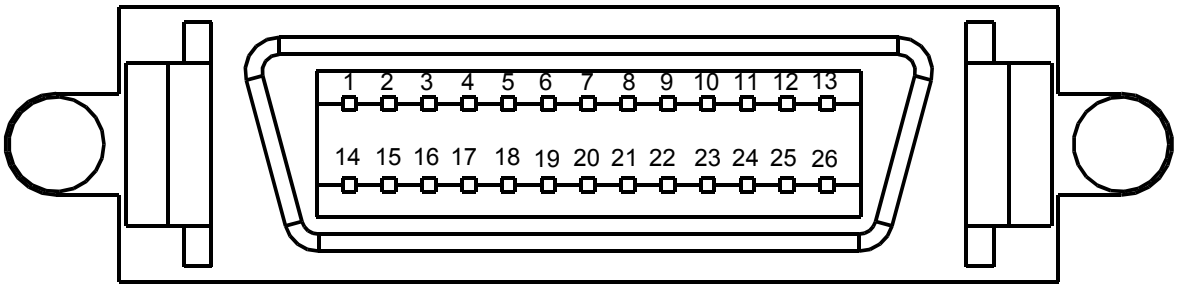


Hirose Connector Pin out

Picture 2 Hirose Connector Pin out

PINOUT	***Description***
1	+ Vcc
2	+Vcc
3	NOT CONNECTED
4	GND
5	GND
6	NOT CONNECTED

6.2 Camera Link™ Connector 1 & 2



Pinout	Description	Pinout	Description
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

7 Performance Specifications

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 LBD must be done using only M5 screws, appling 3Nm torque.
- TAPIX LBD 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 LBD 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 LBD 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.

Rev.	Date	Page	Description	Prepared	Checked	Approved
02.00.00	25/01/05		First realese	XXX	XXX	XXX