Since Tattile establishment in 1988 we have been developing and producing Vision Systems, used to control quality on production plants in several sectors; such as pharmaceutical, packaging, semiconductors, printing, ceramics, food & beverage, automotive...

A high-tech company with a strong international outlook. We have always distinguished ourselves, because of our finest innovation capacity, the collaborative spirit that animates the entire organization.

Today Tattile is a completely renovated company, placed on sound financial basis, projected with enthusiasm to future vision scenarios and enriched by a new management team that relies entirely on the cutting edge of technology.

Our activity is directed primarily to OEM customers and System Integrators around the world, generating more than 60% of our turnover abroad.

Our ambition: we are engaged in the creation of intelligent vision systems, aimed at a more efficient use of resources in industrial processes.

We develop fully automated systems for quality control, highly performing and of great precision, always in compliance with the most strict quality standards, ensuring reliability and optimization of the production process.

Versatility, flexibility and innovation are the strengths of our solutions. Tattile, thanks to its R&D team, specializes in developing cutting-edge hardware and software solutions, offers strong and advanced technological systems, made to meet the most challenging demands of optical inspection and machine vision.

member of:
In Tattile, Human Resources are the heart of innovation and cutting-edge technology.

Tattile’s Team is made of dynamic and motivated young people (mean age 36 years old). This is the “magic ingredient” that has given value and momentum to a company that has historically based its success on professional excellence, making continuous technological innovation a core value, always offered to its customers.

Tattile devotes a consistent part of its budget to vocational and humanist training for its managers and employees, in order to develop a team capable of supporting the constant challenges and ambitious growth goals.
The area of Research and Development we have in Tattile employs a team of over thirty engineers with expertise in hardware-software design and in optics and mechanical integration. Thanks to the synergy between these skills, to constant attention, to innovation and to dedicated and active collaboration with leading European universities, we are able to develop cutting-edge vision systems. Powerful and reliable hardware, easy to use software, maximum integration and flexibility are the strengths of our systems; products designed for severe settings such as the industrial environment, railway and outdoor installations, typical of ITS (Intelligent Transportation Solutions) systems.

The experience of Tattile R&D team enables us to collect new challenges, ensuring customer the safety of a technological partner which is able to meet the most demanding needs in the field of machine vision systems.

**R&D - hardware**
- Extensive know-how in the field of management technologies of image sensors
- Designing of analog and digital circuits
- Internal design of printed circuit boards PCB
- Internal programming of FPGA
- Firmware development and custom drivers
- Integration of the most important communication protocols: GigE Vision, Camera Link and USB3
- Designing of embedded systems with CPU 8-32 bit single-core and multi-core (ARM, x86, and DSP)

**R&D - software**
- Complete software libraries for image processing (TIL)
- Algorithms: OCR, OCR, bar code reader (1D/2D), dot code, pattern matching, blob analysis, color analysis, stereoscopy, laser triangulation, robot guidance, particle inspection
- Graphic development environment (Nautilus) for the creation of complete machine vision applications
- Operating Systems: Microsoft Windows, Linux and proprietary system (TOS)
- Assembler Programming, C, C++ for embedded platforms
- Visual Programming, C, C++ for PC applications (drivers and software)
Custom Made Solutions

From production of standard devices, Tattile supports a strong propensity to the development of custom made products and systems based on customers’ specific requests (tailor made solutions).

To date, 45% of Tattile staff works in R&D; thanks to over thirty engineers with various specializations in hardware and software design, we are able to provide “tailored” and, at the same time, cutting-edge solutions.

The development of custom made software for image processing, communication and user interface can be integrated with the design of a fully implemented hardware in accordance with the requirements of the customer, allowing us to offer “turnkey” vision systems for industrial applications.

Innovation, flexibility and customer orientation are the values on which we base all activities of our organization.

R&D - Optics and mechanical Integration
- Internal optics laboratory
- Development of custom made lighting systems
- Mechanical design to customer specifications (size, shape, volume production...)
- 3D Mechanical Engineering

R&D - Production & Quality
- Electronic boards and finished products are 100% tested
- Final tests performed in climatic chambers with a temperature range that, depending on the product, can vary from -40°C to +80°C
- EMC tests (emission and immunity, conducted and radiated) in EMC internal laboratory including Anechoic Chamber
- Certified procedures for production units and R&D
- “Copy Exact” special procedures
- IPC610 guidelines for acceptability of electronic assemblies

6
Nautilus

Best-of-Breed solutions for System Integrator & OEM

New platform to design custom vision solutions for industries and manage in-field vision devices

- **Unique Solution**
  - One software to control all Tattile’s vision devices: Multi-cameras and Smart-cameras.

- **Open platform**
  - Allows easy integration of third-party libraries and developing of own algorithms using standard C/C++ code.

- **Simplified design flow**
  - Nautilus supervises the entire process to make a state-of-the-art custom industrial application and to achieve inspection needs in the minimum time.

www.tattile.com
Automatic devices discovery and recognition
NAUTILUS automatically searches and recognizes all connected devices via IP, both Multi-camera systems and Smart-Cameras.

Quick image setup
Immediate Live view from cameras / Smart Cameras. Simple image configuration management thanks to:
• Shutter, Gain, Strobe Sliderbar
• Automatic White Balance
• Best focus setting function
• Histogram Display
• ColorMap view

Device I/O management
User can quickly verify I/O wiring and machine integration, reducing start-up time and simplifying electrical debug.

Simple Devices Management
Complete display of device configuration:
• Type and number of connected cameras
• Software / Firmware versions
• Device parameters
Users can easily manage:
• IP configuration
• SW & FW update

Device capabilities learning
Once selected the device to be programmed, NAUTILUS automatically acquire the device capabilities and configure the development environment for device compliance.
Developing

Device oriented workflow environment
Thanks to a simplified design flow, NAUTILUS allows supervising the entire development and delivery process to achieve production needs in the minimum time. User can design his custom vision application exploiting a device-oriented workflow environment. The application is built inserting vision and flow control tools into a graphical application flow by drag & drop paradigm.

Open Platform
Program steps can be configured so to tailor the application on specific elaborations. Actions and algorithms can be implemented using standard C/C++ code. NAUTILUS implements an open platform supporting the integration of 3rd party and open source vision tools and libraries like Halcon, MIL, OpenCV and many others.

Complete Algorithm set
NAUTILUS includes more than 250 vision and flow-control tools for application development; allowing to make a state of the art application.

Customizable user interface layout
The NAUTILUS interface layout is highly customizable, so users can adjust it to meet specific needs.

Multi-threading capability
NAUTILUS supports multithreading on application flow. Developer can easily parallelize analyses in order to achieve high speed application.
**Debug and Test**

**Easily debugging**
Step-by-step control, breakpoint over the application execution flow and runtime access to application settings, give users the power to debug and test applications at any time.

**Advanced monitoring**
Advanced statistics for monitoring steps execution time allow the user to verify and keep under control the whole process of analysis.
SensorFox, oscilloscope-like function, monitors I/O events in Real-Time for event management and time-chart analysis.

**Emulator**
An internal device emulator with target device specs enables users to start developing the vision application at early stages, and adapt dynamically to changing requirements in the environment.
Offline programming and debugging using internal device emulators reduce machinery stop time and increase production capability.

**In-field Management**
Management of in-field vision systems by monitoring and alerting; real-time access to device to control and change device behavior.
**Integrated GUI Interface**

Create your custom graphical user interface to control and monitor devices directly with NAUTILUS platform, without using external software. Use Tattile’s visual wizard to view and control images from devices and to visualize and control application parameters.

**Multi-access Management**

NAUTILUS allows you to create different interface programs that can be simultaneously connected to the same device. User can develop an operator interface for on-line monitoring and a supervisor interface for remote control.

**Stand-Alone Interface**

Created interfaces are stand-alone programs, which therefore do not need the Nautilus platform to work. User can install them on different PCs along the production line and inside the factory, allowing a multipoints management.
High-performance industrial vision systems

www.tattile.com
M100 GigE Series
Multi-Camera Vision Controller

- Easy cabling with PoE
- Multiple inspections available thanks to 6 GigE Vision ports and 4 USB3 ports
- Maximized acquisition performance through 6 GigE independent channels
- Fanless design reduces maintenance cost
- Improved inspections capabilities through Intel i3/i7 high performance processor
- Customizable using 1 PCIe x8 expansion card
- Gigabit Ethernet network connectivity and Real Time Input & Output
- Enhanced communication with Fieldbus and Industrial Ethernet connectivity (on demand)
- Open System: Windows Embedded Standard 7 64 bit (WES7) or Linux (on demand) O.S.
- Improved inspections capabilities through dedicated large FPGA (programmable on demand)

M100 CLink Series
Multi-Camera Vision Controller

- Easy cabling with PoCL
- Maximized acquisition performance and pre-processing through dedicated large FPGA (programmable on demand)
- Multiple inspections available thanks to 4 CameraLink ports
- Enhanced communication with Fieldbus and Industrial Ethernet connectivity (on demand)
- Open System: Windows Embedded Standard 7 64 bit (WES7) or Linux (on demand) O.S.
M100 GigE Series

Multi-Camera Vision Controller

Gigabit Ethernet
6 Gigabit Ethernet ports with PoE (Power over Ethernet) allows the connection of GigE Vision cameras using only one cable (Ethernet + power supply).

Each Gigabit Ethernet port is connected to the CPU through a dedicated PCI-Express interface in order to guarantee the maximum acquisition performance.

Camera sync can be implemented using the 6 high-speed trigger outputs or thanks to the Precision Time Protocol (PTP). IEEE1588.

One additional Gigabit Ethernet port is dedicated to the LAN connection.

USB 2.0 x 2
USB 3.0 x 4

Real Time I/O
The isolated high-speed digital I/O (8 in / 14 out) allows the perfect low-latency synchronization between vision system, camera and machine automation.

Thanks to the FPGA technology, implementing real-time logics is incredibly easy.

Power

Fieldbus / Industrial Ethernet (on demand)

Long Term Longevity
M100 Series is designed to guarantee long term longevity of the main electronic components (up to 10 years).

USB 3.0 / 2.0
4 ports allows the connection of high-speed USB 3.0 Vision cameras.

Additionally, two USB 2.0 ports are accessible from the front panel and one USB 2.0 internal protected port can be used to connect a license dongle or other sensitive devices.

Gigabit Ethernet

PoE

Direct encoder input
If the vision system must be interfaced to an incremental encoder, the line-drive RS422 encoder input allows a perfect synchronization without the need of other interface devices.

SSD/HDD internal data storage
The internal SSD disk stores the operating system and the user program; it can be write-protected to enhance reliability.

Two separated 2.5" hard disk slots provide space for image storage, statistical data and more.

Separate storage slots increase the bandwidth for highspeed applications and reduce the possibility of data loss.

Gigabit Ethernet

6 Gigabit Ethernet ports with PoE (Power over Ethernet) allows the connection of GigE Vision cameras using only one cable (Ethernet + power supply).

Each Gigabit Ethernet port is connected to the CPU through a dedicated PCI-Express interface in order to guarantee the maximum acquisition performance.

Camera sync can be implemented using the 6 high-speed trigger outputs or thanks to the Precision Time Protocol (PTP). IEEE1588.

One additional Gigabit Ethernet port is dedicated to the LAN connection.

USB 2.0 x 2
USB 3.0 x 4

Real Time I/O
The isolated high-speed digital I/O (8 in / 14 out) allows the perfect low-latency synchronization between vision system, camera and machine automation.

Thanks to the FPGA technology, implementing real-time logics is incredibly easy.

Power

Fieldbus / Industrial Ethernet (on demand)

Long Term Longevity
M100 Series is designed to guarantee long term longevity of the main electronic components (up to 10 years).

USB 3.0 / 2.0
4 ports allows the connection of high-speed USB 3.0 Vision cameras.

Additionally, two USB 2.0 ports are accessible from the front panel and one USB 2.0 internal protected port can be used to connect a license dongle or other sensitive devices.

Gigabit Ethernet

PoE

Direct encoder input
If the vision system must be interfaced to an incremental encoder, the line-drive RS422 encoder input allows a perfect synchronization without the need of other interface devices.

SSD/HDD internal data storage
The internal SSD disk stores the operating system and the user program; it can be write-protected to enhance reliability.

Two separated 2.5" hard disk slots provide space for image storage, statistical data and more.

Separate storage slots increase the bandwidth for highspeed applications and reduce the possibility of data loss.

Gigabit Ethernet

6 Gigabit Ethernet ports with PoE (Power over Ethernet) allows the connection of GigE Vision cameras using only one cable (Ethernet + power supply).

Each Gigabit Ethernet port is connected to the CPU through a dedicated PCI-Express interface in order to guarantee the maximum acquisition performance.

Camera sync can be implemented using the 6 high-speed trigger outputs or thanks to the Precision Time Protocol (PTP). IEEE1588.

One additional Gigabit Ethernet port is dedicated to the LAN connection.

USB 2.0 x 2
USB 3.0 x 4

Real Time I/O
The isolated high-speed digital I/O (8 in / 14 out) allows the perfect low-latency synchronization between vision system, camera and machine automation.

Thanks to the FPGA technology, implementing real-time logics is incredibly easy.

Power

Fieldbus / Industrial Ethernet (on demand)

Long Term Longevity
M100 Series is designed to guarantee long term longevity of the main electronic components (up to 10 years).

USB 3.0 / 2.0
4 ports allows the connection of high-speed USB 3.0 Vision cameras.

Additionally, two USB 2.0 ports are accessible from the front panel and one USB 2.0 internal protected port can be used to connect a license dongle or other sensitive devices.

Gigabit Ethernet

PoE

Direct encoder input
If the vision system must be interfaced to an incremental encoder, the line-drive RS422 encoder input allows a perfect synchronization without the need of other interface devices.

SSD/HDD internal data storage
The internal SSD disk stores the operating system and the user program; it can be write-protected to enhance reliability.

Two separated 2.5" hard disk slots provide space for image storage, statistical data and more.

Separate storage slots increase the bandwidth for highspeed applications and reduce the possibility of data loss.

Gigabit Ethernet

6 Gigabit Ethernet ports with PoE (Power over Ethernet) allows the connection of GigE Vision cameras using only one cable (Ethernet + power supply).

Each Gigabit Ethernet port is connected to the CPU through a dedicated PCI-Express interface in order to guarantee the maximum acquisition performance.

Camera sync can be implemented using the 6 high-speed trigger outputs or thanks to the Precision Time Protocol (PTP). IEEE1588.

One additional Gigabit Ethernet port is dedicated to the LAN connection.

USB 2.0 x 2
USB 3.0 x 4

Real Time I/O
The isolated high-speed digital I/O (8 in / 14 out) allows the perfect low-latency synchronization between vision system, camera and machine automation.

Thanks to the FPGA technology, implementing real-time logics is incredibly easy.

Power

Fieldbus / Industrial Ethernet (on demand)

Long Term Longevity
M100 Series is designed to guarantee long term longevity of the main electronic components (up to 10 years).

USB 3.0 / 2.0
4 ports allows the connection of high-speed USB 3.0 Vision cameras.

Additionally, two USB 2.0 ports are accessible from the front panel and one USB 2.0 internal protected port can be used to connect a license dongle or other sensitive devices.

Gigabit Ethernet

PoE

Direct encoder input
If the vision system must be interfaced to an incremental encoder, the line-drive RS422 encoder input allows a perfect synchronization without the need of other interface devices.

SSD/HDD internal data storage
The internal SSD disk stores the operating system and the user program; it can be write-protected to enhance reliability.

Two separated 2.5" hard disk slots provide space for image storage, statistical data and more.

Separate storage slots increase the bandwidth for highspeed applications and reduce the possibility of data loss.

Gigabit Ethernet

6 Gigabit Ethernet ports with PoE (Power over Ethernet) allows the connection of GigE Vision cameras using only one cable (Ethernet + power supply).

Each Gigabit Ethernet port is connected to the CPU through a dedicated PCI-Express interface in order to guarantee the maximum acquisition performance.

Camera sync can be implemented using the 6 high-speed trigger outputs or thanks to the Precision Time Protocol (PTP). IEEE1588.

One additional Gigabit Ethernet port is dedicated to the LAN connection.

USB 2.0 x 2
USB 3.0 x 4

Real Time I/O
The isolated high-speed digital I/O (8 in / 14 out) allows the perfect low-latency synchronization between vision system, camera and machine automation.

Thanks to the FPGA technology, implementing real-time logics is incredibly easy.

Power

Fieldbus / Industrial Ethernet (on demand)

Long Term Longevity
M100 Series is designed to guarantee long term longevity of the main electronic components (up to 10 years).

USB 3.0 / 2.0
4 ports allows the connection of high-speed USB 3.0 Vision cameras.

Additionally, two USB 2.0 ports are accessible from the front panel and one USB 2.0 internal protected port can be used to connect a license dongle or other sensitive devices.

Gigabit Ethernet

PoE

Direct encoder input
If the vision system must be interfaced to an incremental encoder, the line-drive RS422 encoder input allows a perfect synchronization without the need of other interface devices.

SSD/HDD internal data storage
The internal SSD disk stores the operating system and the user program; it can be write-protected to enhance reliability.

Two separated 2.5" hard disk slots provide space for image storage, statistical data and more.

Separate storage slots increase the bandwidth for highspeed applications and reduce the possibility of data loss.

Gigabit Ethernet

6 Gigabit Ethernet ports with PoE (Power over Ethernet) allows the connection of GigE Vision cameras using only one cable (Ethernet + power supply).

Each Gigabit Ethernet port is connected to the CPU through a dedicated PCI-Express interface in order to guarantee the maximum acquisition performance.

Camera sync can be implemented using the 6 high-speed trigger outputs or thanks to the Precision Time Protocol (PTP). IEEE1588.

One additional Gigabit Ethernet port is dedicated to the LAN connection.
M100 CLink Series

- **Camera Link**
  4 Camera Link ports with PoCL (Power over Camera Link) allow the connection of Camera Link cameras using only one cable (Camera Link + power supply). Device supports four Base link (Max Bandwidth 255MB/s), two Medium link (Max Bandwidth 510MB/s) or two 80-bit link (max bandwidth 850MB/s) that is directly connected to FPGA device.

- **USB 3.0 / 2.0**
  2 ports allow the connection of high-speed USB 3.0 Vision cameras. Additionally, two USB 2.0 ports are accessible from the front panel and one USB 2.0 internal protected port can be used to connect a license dongle or other sensitive devices.

- **Display Port**
- **USB 2.0 x2**
- **USB3 3.0 x2**
- **Gigabit Ethernet x2**
- **RS232/RS485 x1 Fieldbus / Industrial Ethernet (on demand)**
- **Digital I/O**
- **Encoder**
- **Camera Link PoCL x 4**
- **Power Input**
- **DVI Port**
- **3x USB 2.0**
- **mSata SSD**
- **Fieldbus**

**FPGA**
- The image acquisition and image preprocessing are performed by dedicated FPGA in real time (programmable on demand).

**Direct encoder input**
- If the vision system must be interfaced to an incremental encoder, the line-drive RS422 encoder input of the M100 allows a perfect synchronization of the system without the need of other interface devices.

**USB 3.0 / 2.0**
- 2 ports allow the connection of high-speed USB 3.0 Vision cameras.
- Additionally, two USB 2.0 ports are accessible from the front panel and one USB 2.0 internal protected port can be used to connect a license dongle or other sensitive devices.

**Long Term Longevity**
- M100 Series is designed to guarantee long term longevity of the main electronic components (up to 10 years).

**Real Time I/O**
- The isolated high-speed digital I/O (8 in / 14 out) allows the perfect low-latency synchronization between vision system, cameras and machine automation. Thanks to the FPGA technology, implementing real-time logics is incredibly easy.

**Intel 3rd generation i3 / i7 processors**
- Today’s multi-camera vision applications require a performing processing engine. The M100 is powered by Intel 3rd generation i3 / i7 processors with 16GB of DDR3 RAM in order to tackle the most demanding inspection tasks.

**Open Architecture**
- Thanks to the use of standard WES 7 64 bit or Linux (on demand) O.S., it is possible to develop Vision Application with Tattile software or third parties library / software.
Fieldbus and Industrial Ethernet connectivity

Several Fieldbus and Industrial Ethernet interfaces (Profinet, Profinet, Ethernet/IP, EtherCAT...) are optionally integrated.

This simplifies and speeds up the communication with the automation system.

DIN Mounting

The M100 Series has 2 DIN mounting points for quick assembly inside the rack.

PCIe expansion

One PCI Express x8 expansion slot gives the possibility to install an additional card like a frame grabber or a vision processing unit (from Tattile or other manufacturers).

M100 Series | Common Data

Technical Data

Plug & Control

M100 vs. Industrial PC

M100 Series - Part Number

F01605
M110 GigE i3 Multi-Camera Vision Controller

F01606
M120 GigE i7 Multi-Camera Vision Controller

F01551
M160 CLink i7 Multi-Camera Vision Controller

PCIe expansion for M100 series

Multi-Camera Vision Controller

M100 GigE

M100 CLink

Processing

CPU
Intel i3 1.6 GHz dual core
Intel i7 2.1 GHz quad core

FPGA
Altera Cyclone V GZ 2K LEs (I/O management)
Altera Cyclone V GZ 5K LEs (Pre-Processing)

RAM
8 GB (up to 16 GB)
16 GB

Camera interface

Video inputs
6
4

USB 3.0 ports
4
2

Camera link ports
4

Camera supply
PoE - USB

Camera output

USB 3.0 - PoCL - USB

LAN
1x Gigabit Ethernet
2x Gigabit Ethernet

Serial interfaces
1x RS232/485
1x PCIe x4 expansion card

USB 2.0
2x USB 2.0 External / 1x USB 2.0 Internal

Digital inputs
8x isolated PNP

Digital outputs
8x isolated PNP

Encoder inputs
3-channel Line drive RS422

Fieldbus (on demand)

Profinet, Profinet, Ethernet/IP, EtherCAT, DeviceNet, Modbus, Powerlink, CANopen

Machine interface

Power Supply
22 – 27 VDC

Weight
3.5 kg

Cooling
Fanless

Operating Temperature
0 °C – 45 °C

Conformity

Software

Operating System
Windows Embedded Standard (WES) 7 64 bit, Linux (on demand)
TAG-7 Series
CameraLink & GigE Vision Line Scan Camera

Multiple resolutions from 2K up to 8K, mono and color

TAG-7
The TAG-7 is the new-generation line scan camera platform for industrial applications. Available with resolutions of 2K, 4K and 8K, both monochromatic and color, as well as GigE or CameraLink interface, the TAG-7 cameras are suitable for all vision applications.

Compact size
62x62x28.9 mm

High Speed: up to 80 KHz line rate

GigE Vision
Thanks to GigE Vision Interface, the camera can be easily integrated into a vision system, without using a framegrabber. TAG-7 GigE runs with a frame rate up to 49 KHz.

CameraLink
TAG-7 CameraLink versions support all configurations (Base, Medium, Full and 80bit), with a Line Rate up to 80 KHz. PoCL (Power over CameraLink) functionality allows a quick and easy installation.

Internal FPGA for image pre-processing

FPGA
Thanks to Tattile’s technology based on FPGA, this line scan camera can execute different preprocessing algorithms in “real time”.

Linear Vision
Linear CCD and CMOS technology.
TAG-7 Series
CameraLink & GigE Vision Line Scan Camera

Technical Data

<table>
<thead>
<tr>
<th>Model</th>
<th>Monochrome</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>F01596</td>
<td>2048@10000 Mono</td>
<td></td>
</tr>
<tr>
<td>F01597</td>
<td>4096@10000 Mono</td>
<td></td>
</tr>
<tr>
<td>F01626</td>
<td>2048@80000 Mono</td>
<td></td>
</tr>
<tr>
<td>F01627</td>
<td>4096@80000 Mono</td>
<td></td>
</tr>
<tr>
<td>F01632</td>
<td>2048@80000 Mono</td>
<td></td>
</tr>
<tr>
<td>F01633</td>
<td>4096@80000 Mono</td>
<td></td>
</tr>
<tr>
<td>F01648</td>
<td>8192@80000 Mono</td>
<td></td>
</tr>
<tr>
<td>F01649</td>
<td>8192@80000 Mono</td>
<td></td>
</tr>
<tr>
<td>F01643</td>
<td>2x2048@24000 Color</td>
<td></td>
</tr>
<tr>
<td>F01644</td>
<td>2x4096@24000 Color</td>
<td></td>
</tr>
</tbody>
</table>

Available on demand

<table>
<thead>
<tr>
<th>Model</th>
<th>GigE Vision - Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>F01625</td>
<td>2048@49000 Mono</td>
</tr>
<tr>
<td>F01631</td>
<td>4096@24000 Mono</td>
</tr>
<tr>
<td>F01647</td>
<td>8192@12000 Mono</td>
</tr>
<tr>
<td>F01627</td>
<td>2x2048@24000 Color</td>
</tr>
<tr>
<td>F01643</td>
<td>2x4096@12000 Color</td>
</tr>
</tbody>
</table>

- Resolution: 2048, 4096, 8192, 2x2048, 2x4096
- Type: mono, mono color, color
- Sensor type: CCD Perkin Elmer, CMOS Awaiba
- Pixel size (μm): 7 x 7, 3.5 x 3.5
- Pixel Bit Depth: 8 bit, 10 bit, 12 bit
- Power supply: +12/24 VDC, PoCL (only CameraLink version)
- Dimensions: 62x62x69, 62x62x28.9
- Conformity: CE, RoHS

For more information, visit www.tattile.com
TAG-5 Series

GigE High Performance Camera

- High frame rate up to 300 fps with VGA sensor
- Area Scan Global Shutter CMOS technology
- Resolution from VGA to 4 Megapixels
- GigE Vision and GenICam compliant
- CMOS Sensor
  - Based on advanced global shutter CMOS technology and GigE Vision protocol, the TAG-5 will fulfill your application requirements. The frame rate of the camera can be even increased thanks to the windowing features; in fact, the TAG-5 can capture only a portion of the image sensor allowing higher frames rate for smallest region of interest.
- GigE Vision PoE
  - Thanks to the GigE Vision standard protocol, it does not require the use of any frame grabber, and the camera can be easily interfaced to embedded and PC-based vision system. The TAG-5 supports IEEE 1588 precise time protocol, enabling accurate synchronization with multi-camera acquisition. In addition to the standard 24 VDC power supply, the camera can be powered by PoE (Power over Ethernet) for easy cabling.
- I/O
  - The camera offers a RS232 serial port, 4 strobe channels for illuminator strobing and control, one input and one output opto-isolated.

TAG-5

The TAG-5 is the new-generation camera platform for Industrial application. It is available in 3 resolution: from VGA with a frame rate of 300 fps up to 4 Megapixels with a frame rate of 22 fps; all resolution are available with mono and color sensors.

- Easy cabling with Power over Ethernet (PoE)
- Multiple Strobe Output for lighting control
- Partial Scan to reach high frame rate
- Compact size of 34x34x54 mm
- High frame rate up to 300 fps with VGA sensor

GigE Vision PoE

The camera offers a RS232 serial port, 4 strobe channels for illuminator strobing and control, one input and one output opto-isolated.
## TAG-5 Series

**GigE High Performance Camera**

### Technical Data

<table>
<thead>
<tr>
<th>Resolution</th>
<th>640x480</th>
<th>640x480</th>
<th>2048x1024</th>
<th>2048x2048</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frame rate</td>
<td>332 fps</td>
<td>330 fps</td>
<td>43 fps</td>
<td>22 fps</td>
</tr>
<tr>
<td>Sensor type</td>
<td>1/4&quot; CMOS</td>
<td>1/3&quot; CMOS</td>
<td>2/3&quot; CMOS</td>
<td>1&quot; CMOS</td>
</tr>
<tr>
<td>Sensor model</td>
<td>PYTHON300</td>
<td>CMV300</td>
<td>CMV2000</td>
<td>CMV4000</td>
</tr>
<tr>
<td>Pixel size</td>
<td>4.8 x 4.8 μm</td>
<td>7.4 x 7.4 μm</td>
<td>5.5 x 5.5 μm</td>
<td>5.5 x 5.5 μm</td>
</tr>
</tbody>
</table>

### Power supply
- PoE
- +24 VDC

### Digital inputs
- 1 PNP protected

### Digital outputs
- 1 open collector protected

### Strobe
- 4 channels

### Serial port
- RS232

### Dimensions
- 34 x 34 x 54 mm
- 34 x 34 x 59 mm

### Weight
- 115 g

### Internal protection
- IP 42

---

### TAG-5 Series - Part Number

- **F01552**: 640x480 298 fps mono
- **F01553**: 640x480 298 fps color
- **F01603**: 2048x1024 44 fps mono
- **F01604**: 2048x1024 44 fps color
- **F01554**: 2048x2048 22 fps mono
- **F01555**: 2048x2048 22 fps color
- **F01699**: 640x480 300 fps color
S200 Series

High Performance Smart Camera

- High-resolution: 4.2 Megapixels global shutter CMOS image sensor
- Ultra-high speed: 180 frames per second at full resolution
- IP-67 Rated enclosure
- Powerful image processing: Dual Core Cortex-A9 processor and Xilinx FPGA
- Complete interface and communication capabilities: Gigabit Ethernet, digital I/O, RS232/485 serial ports, encoder input

Ultra High-Speed
With a 4.2 Megapixels resolution and a speed of 180 frame per second, S200 Smart Camera opens new horizons for your applications.

The frame rate of the camera can be further increased thanks to the windowing features: capturing only a portion of the sensor allows higher frame rates for smallest regions of interest.

FPGA
The image acquisition and image preprocessing are performed by dedicated FPGA in real time (programmable on demand).

IP-67
IP-67 rated housing of S200 Smart Camera allows the installation even in harsh environment.

Architecture
The fast acquisition and processing of high-resolution images requires a powerful electronic architecture. The S200 Smart Camera features a Dual Core Cortex-A9 800MHz CPU and an Xilinx Artix 8K Logic Cells FPGA working closely together.

Thanks to Tattile’s technology based on FPGA, this smart camera can guarantee the real-time execution of critical functions such as image capture, image preprocessing, I/O and incremental encoder management.

Open System
Thanks to the use of Linux O.S., it is possible to develop Vision Application with Tattile software or third parties library / software.

Direct encoder input
If the vision system must be interfaced to an incremental encoder, the line-drive RS422 encoder input allows a perfect synchronization without the need of other interface devices.

Interface and Communication
The integration of the S200 Smart Camera is made easy by the full-featured set of interfaces available: Gigabit Ethernet, RS422 incremental encoder input, RS232, RS485, 2 inputs, 3 outputs, 3 strobe outputs.

www.tattile.com

Custom Vision Solutions
Hyperspectral Smart Camera

Tattile has developed the S200 Smart Camera HYP, an intelligent camera with high-performance that allows to apply the hyperspectral technology directly on the production lines.

FPGA

The Reflectance calculation and Images / Cube reconstruction are performed by dedicated FPGA in real time. Using graphical tool, it is possible to program the FPGA for image processing.

Sensor Design

Three models of hyperspectral sensor are available:
- LINESCAN: 100 spectral band
- SNAPSHOT TILED: 32 spectral band
- SNAPSHOT MOSAIC: 16 spectral band

Different spectral wavelength available:
- VIS
- NIR
- VIS + NIR

Powerful image processing:
Xilinx FPGA and Dual Core Cortex-A9 processor

Programmable FPGA for image acquisition and preprocessing

Spectral filter directly applied on CMOS sensor

3 type of sensor with different spectral range and design

IP-67 Rated enclosure

S200 hyp

HyperSpectral Smart Camera

www.tattile.com
## Technical Data

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resolution</td>
<td>2048 x 2048 pixels</td>
</tr>
<tr>
<td>Frame rate</td>
<td>180 fps</td>
</tr>
<tr>
<td>Sensor type</td>
<td>1&quot; CMOS</td>
</tr>
<tr>
<td>Sensor model</td>
<td>CMV4000</td>
</tr>
<tr>
<td>CPU</td>
<td>Dual core ARM Cortex A9 800 MHz</td>
</tr>
<tr>
<td>System RAM</td>
<td>1 GB</td>
</tr>
<tr>
<td>Flash Memory</td>
<td>Secure Digital 8 GB (up to 32 GB)</td>
</tr>
<tr>
<td>FPGA</td>
<td>Xilinx Artix-7 85K LEs</td>
</tr>
<tr>
<td>FPGA RAM</td>
<td>1 GB</td>
</tr>
<tr>
<td>Digital inputs</td>
<td>2</td>
</tr>
<tr>
<td>Digital outputs</td>
<td>3 PNP</td>
</tr>
<tr>
<td>Strobe output</td>
<td>3 channels</td>
</tr>
<tr>
<td>Encoder input</td>
<td>3 channels RS422 Line Driver</td>
</tr>
<tr>
<td>LAN</td>
<td>Gigabit Ethernet</td>
</tr>
<tr>
<td>Serial interfaces</td>
<td>RS232, RS485</td>
</tr>
<tr>
<td>Internal Protection</td>
<td>IP67</td>
</tr>
<tr>
<td>Lens</td>
<td>C-Mount</td>
</tr>
<tr>
<td>Operating system</td>
<td>Linux</td>
</tr>
<tr>
<td>Power supply</td>
<td>24 VDC</td>
</tr>
</tbody>
</table>

**S200 Series - Part Number**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>S200 SMART CAMERA 2048X2048 MONO</th>
</tr>
</thead>
</table>

**Compact size**

- C-Mount lens
- IP67 rated
- Gigabit Ethernet
- Internal Protection: IP67
- Lens: C-Mount
- Operating system: Linux
- Power supply: 24 VDC

**High Performance Inspection**

- Resolution: 2048 x 2048 pixels
- Frame rate: 180 fps
- Sensor type: 1" CMOS
- Sensor model: CMV4000
- CPU: Dual core ARM Cortex A9 800 MHz
- System RAM: 1 GB
- Flash Memory: Secure Digital 8 GB (up to 32 GB)
- FPGA: Xilinx Artix-7 85K LEs
- FPGA RAM: 1 GB
- Digital inputs: 2
- Digital outputs: 3 PNP
- Strobe output: 3 channels
- Encoder input: 3 channels RS422 Line Driver
- LAN: Gigabit Ethernet
- Serial interfaces: RS232, RS485
- Internal Protection: IP67
- Lens: C-Mount
- Operating system: Linux
- Power supply: 24 VDC
S100 Series

Next Generation Smart Camera

High Performance: Dual Core Cortex-A9 processor and Xilinx FPGA

Compact size: only 45x45x41 mm

Open system with Linux O.S.

IP-67 Rated enclosure

Programmable FPGA
for image acquisition and preprocessing

Multiple resolution: VGA, 2 and 4 Megapixels global shutter CMOS image sensor

High-speed acquisition:
up to 250 fps for VGA resolution

Complete interface and communication capabilities: Gigabit Ethernet, digital I/O, RS232/485 serial ports

High-Speed acquisition
The S100 allows high-speed acquisition, from 250 Fps for VGA sensor up to 35 Fps for 4 megapixels sensor.

The frame rate of the camera can be further increased thanks to the windowing features: capturing only a portion of the sensor allows higher frame rates for smallest regions of interest.

FPGA
The image acquisition and image preprocessing are performed by dedicated FPGA in real time.

Using graphical tool, it is possible to program the FPGA for image preprocessing.

Interface and Communication
The integration of the S100 Smart Camera is made easy by the full-featured set of interfaces available: Gigabit Ethernet, RS232, RS485, 2 inputs, 2 outputs, 2 strobe outputs.

Architecture
The S100 Smart Camera features a Dual Core Cortex-A9 800MHz CPU and an Xilinx Artix 28K Logic Cells FPGA working closely together.

Thanks to Tattile’s technology based on FPGA, this smart camera can guarantee the real-time execution of critical functions such as image capture, image pre-processing, and I/O.

Compact size
Thanks to its compact size, it can be easily integrated into any machine and production line.

IP-67
IP-67 Rated housing of S100 Smart Camera allows the installation even in harsh environment.
S100 Series
Smart & Fast Inspection
Technical Data

<table>
<thead>
<tr>
<th>Device</th>
<th>S110</th>
<th>S120</th>
<th>S130</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resolution</td>
<td>640x480</td>
<td>2048x1088</td>
<td>2048x2048</td>
</tr>
<tr>
<td>Frame rate</td>
<td>250 fps</td>
<td>70 fps</td>
<td>35 fps</td>
</tr>
<tr>
<td>Sensor type</td>
<td>1/3” CMOS</td>
<td>2/3” CMOS</td>
<td>1” CMOS</td>
</tr>
<tr>
<td>Sensor model</td>
<td>CMV300</td>
<td>CMV2000</td>
<td>CMV4000</td>
</tr>
<tr>
<td>CPU</td>
<td>Dual Core ARM Cortex-A9 800MHz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>System RAM</td>
<td>512 MB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flash Memory</td>
<td>Secure Digital 8 GB (up to 32 GB)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FPGA</td>
<td>Altera Arria V 72K LEs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lighting direct channel</td>
<td>2 channels</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Integrated illumination</td>
<td>Optional removable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strobe output</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Digital inputs</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Digital outputs</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LAN</td>
<td>Gigabit Ethernet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Serial port</td>
<td>RS232-RS485</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internal Protection</td>
<td>IP67</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lens</td>
<td>C-mount</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating system</td>
<td>Linux</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power supply</td>
<td>24 VDC</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

S100 Series - Part Numbers

- F01616 S100 SMART CAMERA 640x480 MONO
- F01617 S100 SMART CAMERA 640x480 COLOR
- F01618 S120 SMART CAMERA 2048x1088 MONO
- F01619 S120 SMART CAMERA 2048x1088 COLOR
- F01620 S130 SMART CAMERA 2048x2048 MONO
- F01621 S130 SMART CAMERA 2048x2048 COLOR
S50 Series
Compact Smart Camera

Best Performance: Single Core Cortex-A9 processor and Xilinx FPGA

Smart solution
With a VGA resolution and a speed of 120 frame per second, S50 Smart Camera is suitable for all vision system applications. The frame rate of the camera can be further increased thanks to the windowing features: capturing only a portion of the sensor allows higher frame rates for smallest regions of interest.

Open system with Linux O.S.

FPGA
The image acquisition and image preprocessing are performed by dedicated FPGA in real-time.

Compact size: only 45x45x41 mm

Complete interface and communication capabilities:
Gigabit Ethernet, digital I/O, RS232/485 serial ports

IP-67 Rated enclosure
VGA global shutter CMOS image sensor

Architecture
The S50 Smart Camera features a Single Core Cortex-A9 800MHz CPU and an Xilinx Artix 28K Logic Cells FPGA. Thanks to Tattile’s technology based on FPGA, this smart camera can guarantee the real-time execution of critical functions such as image capture, image preprocessing, and I/O.

Compact size
Thanks to its compact size, it can be easily integrated into any machine and production line.

Interface and Communication
The integration of the S50 Smart Camera is made easy by the full-featured set of interfaces available: Gigabit Ethernet, RS232, RS485, 2 inputs, 2 outputs, 2 strobe outputs.

Compact size
Thanks to its compact size, it can be easily integrated into any machine and production line.
S50 Series
Compact Smart Camera

Gigabit Ethernet

Power supply
digital I/O
RS232/485
strobe

IP67-rated

C-mount lens
Compact size

Illumination

S50 Series - Part Number
F01623  S50 SMART CAMERA 640X480 MONO
F01624  S50 SMART CAMERA 640X480 COLOR

Technical Data

Resolution 640x480
Frame Rate 120 fps
Sensor type 1/3” CMOS
Sensor model CMV300
CPU Single-Core Cortex-A9 800 MHz
RAM 512 MB
Flash Memory Secure Digital 8 GB (up to 32 GB)
FPGA Xilinx 28K Logical Elements
Lighting direct channel 2 channels
Integrated illumination Optional removable
Strobe output 2
LAN Gigabit Ethernet
Digital input 2
Digital output 2 PNP
Serial port RS232-RS485
Internal power PSU
Lens C-Mount
Operating system Linux

www.tattile.com