

DISPLAY

VERSION 1.0



WHERE TECHNOLOGY MEETS EXPERIENCE

DIGITAL CLUSTERS AND DISPLAYS THAT ELEVATE THE DRIVING EXPERIENCE THROUGH CLARITY AND DESIGN

To respond to the different ways in which the driving experience is lived and interpreted today, MTA develops and manufactures displays and virtual or analog instrument clusters for leading OEMs who place the full development process in the hands of our engineers.

Virtual clusters represent the most advanced expression of MTA's capabilities in the human-machine interface domain. They feature high-definition displays built with optical bonding technology, ensuring impeccable readability and superior resistance to external agents. Analog clusters deliver the solidity and immediacy of traditional indicators, ideal for essential applications and environments where durability and simplicity are top priorities.

Alongside these fully customized solutions, MTA also offers a wide range of off-the-shelf dashboards and displays that can be tailored to specific customer requirements. This approach allows customers to benefit from highly flexible and rapidly deployable solutions, while still enjoying the advantages of products designed around their unique application needs.

MTA has also developed an advanced, tailor-made solution engineered to meet the ever-growing demand for information to be visualized on displays: a complete in-vehicle system that centralizes all computing power within an intelligent core unit, capable of managing and controlling multiple displays while seamlessly sharing data and content.

CUSTOMIZED CLUSTERS & DISPLAYS

MTA develops fully customized solutions for OEMs, including advanced displays and both virtual and analog instrument clusters, tailored to specific application needs. Virtual clusters and displays showcase MTA's expertise in human-machine interfaces, featuring high-definition TFT with optical bonding for excellent readability and durability. Analog clusters provide reliable, easy-to-read solutions, ideal for applications where robustness and simplicity are essential.

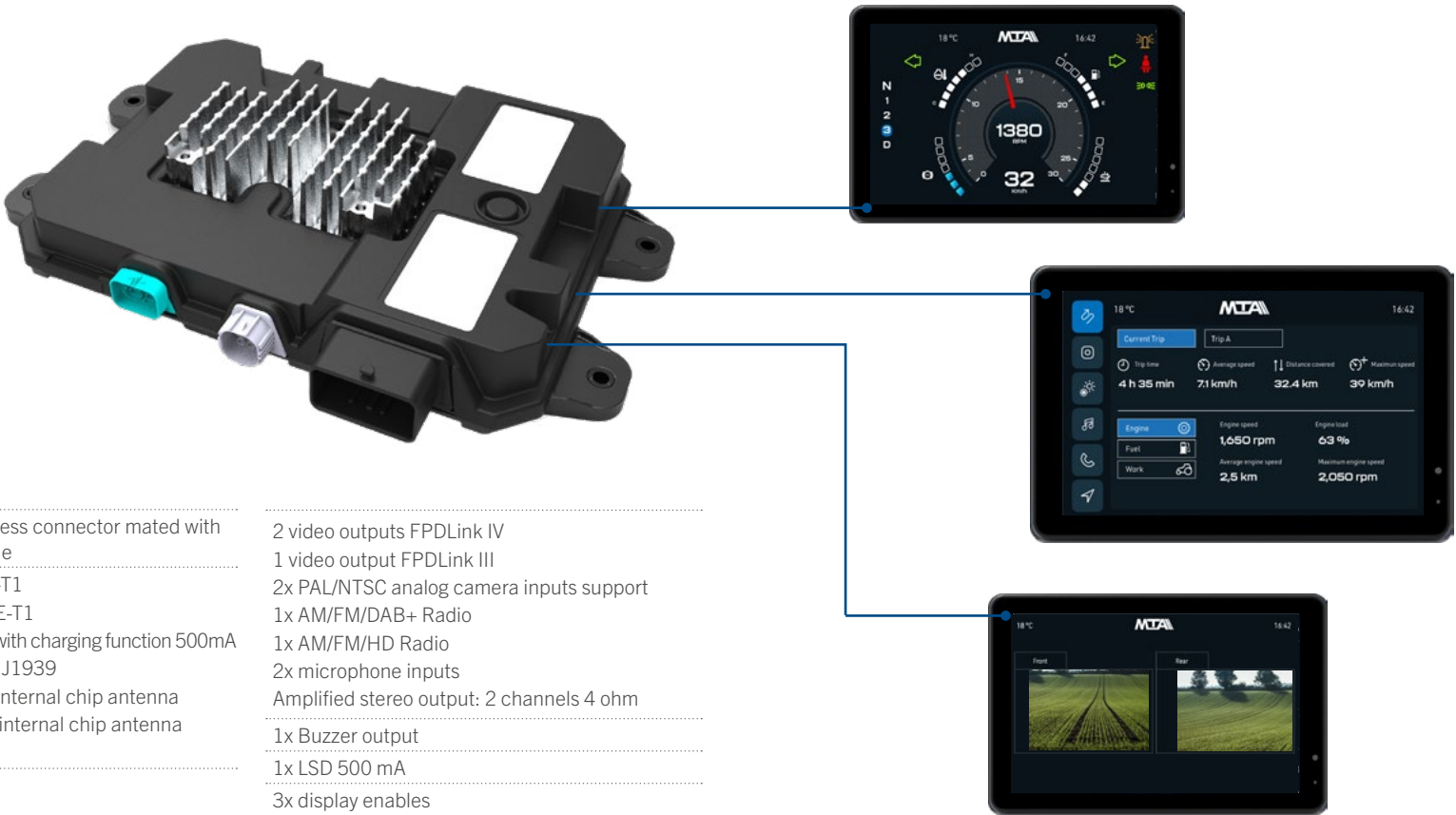


AGRI SIC NEXT

Agri SIC is a complete in-vehicle system designed for off-highway applications, based on a centralized computing architecture capable of managing and controlling multiple displays while ensuring synchronized data and content sharing across the system.

The high-performance central unit enables the use of compact display solutions, optimizing cockpit layout and reducing system complexity. The platform is designed to support specific agricultural functionalities and to manage multiple services and functions simultaneously, ensuring high computational efficiency.

Agri SIC integrates advanced hardware and software technologies, providing fast boot time and a layered security architecture to guarantee system protection and reliability.



Linux operating system	IP69K grade with harness connector mated with same or higher IP grade	2 video outputs FPDLink IV
NXP IMX95 microcontroller		1 video output FPDLink III
LPDDR4 8GB RAM	1x Ethernet 100BASE-T1	2x PAL/NTSC analog camera inputs support
16 GB eMMC	2x Ethernet 1000BASE-T1	1x AM/FM/DAB+ Radio
512KbitEEPROM	1x USB2.0 connection with charging function 500mA	1x AM/FM/HD Radio
Nominal power supply voltage: 12 V and 24 V	3x CAN BUS interface J1939	2x microphone inputs
Operating temperature: -30 °C to 80 °C	1x Bluetooth 5.0 with internal chip antenna	Amplified stereo output: 2 channels 4 ohm
Storage temperature: -40 °C to 85 °C	WiFi2.4G and 5G with internal chip antenna	1x Buzzer output
	1x RS-232	1x LSD 500 mA
		3x display enables

THE FULL DISPLAY RANGE

MTA can also offer a range of Super Fine TFT displays in multiple sizes (12", 10", 8", 7" and 5") available in both touch and non-touch versions and supporting landscape or portrait orientation. The displays as standalone products enable flexible integration into different vehicle architectures and deliver high functional performance and reliable operation even in harsh environmental conditions.

THE OPERATING SYSTEM

MTA provides the hardware and software reference BSP (Board Support Package) and SDK for the platform aligned with its internal roadmap and regularly updated according to software maintenance terms. For more details on software roadmap and SDK content please contact MTA. BSP will be a mix of source code and binary and will allow the customers to customize it according to their needs. Any BSP customizations, outside MTA roadmap, can be requested as an additional service.



CUSTOMIZABLE DASHBOARDS & DISPLAYS

MTA develops and manufactures a wide range of customizable dashboards and displays, enabling customers to benefit from dedicated products with software tailored to the specific requirements of each application. This approach combines the convenience of an off-the-shelf solution with the advantages of an interface designed around the actual needs of the machine. State-of-the-art components, advanced surface treatments and high-quality materials ensure high performance, reliability and durability even in demanding operating conditions.

SMART

- Dimensions: 162 x 97 x 41.3 mm
- 4.3" color TFT LCD 480 x 272 pixel with optical bonding
- Front glass with integrated telltales
- 10 telltales and 1 bar graph with 8 LEDs
- Power supply: 12 Vdc
- Protection degree: IP66
- 12 inputs, 6 power outputs and 1 H-bridge
- 1 CAN bus and 1 LIN interfaces
- RTC, night & day sensor
- Connector: Tyco Superseal 34 pins

Customizable with
MTASTUDIO®

Simulable with
**MTACORE®
SIMULATOR**



SPOT

- Customizable dial plate, front bezel and internal mask
- Dimensions: Ø 100 mm, external frame Ø 107 mm
- 3.1" dot matrix LCD 160 x 56 pixel
- 18 telltales
- Antifog treatment
- Power supply: 12 Vdc
- Protection degree: IP6K9K front, IP65 rear
- 20 inputs, 1 output (optional)
- 1 CAN bus interface
- RTC (optional), buzzer
- Connector: Tyco Superseal 26 pins



SPOT PLUS

- Customizable dial plate
- Dimensions: Ø 100 mm, external frame Ø 116 mm
- 3,5" color TFT LCD 320 x 240 pixel with optical bonding
- 2 push buttons (optional) and 5 telltales
- Front glass with anti-glare and anti-reflection treatments
- Power supply: 12 or 24 Vdc
- Protection degree: IP69K front, IP65 rear
- 20 inputs, 1 output
- 1 CAN bus interface
- RTC, buzzer
- Connector: Tyco Superseal 26 pins

Customizable with
MTASTUDIO®

Simulable with
**MTACORE®
SIMULATOR**

QUIK, QUIK PLUS & QUIK ULTRA

- Customizable dial plate, front bezel and internal mask
- Dimensions: 230 x 120 x 60 mm
- Antifog treatment
- Power supply: 12 Vdc (9-16 Vdc)
- Protection degree: IP66 front, IP65 rear
- 27 inputs, 1 output (optional) and 1 Vref 5 Vdc output (optional)
- 1 CAN bus interface
- RTC (optional), buzzer
- Connector: Tyco Superseal 34 pins

Customizable with
MTA STUDIO

Simulable with
**MTACORE
SIMULATOR**

QUIK

- 2.2" segment LCD
- 2 analog gauges, 1 LED bar graph and 18 telltales + 5 optional



QUIK PLUS

- 2.7" dot matrix LCD 128 x 128 pixel
- 2 analog gauges and 19 telltales



QUIK ULTRA

- 3.5" color TFT LCD 320 x 240 pixel
- 2 digital bar graphs and 19 telltales



TELLUS

- Customizable dial plate, front bezel
- Dimensions: 286 x 135 x 63 mm
- 3.5" color TFT LCD 240 x 320 pixel
- 2 analog gauges
- 2 push buttons and 25 telldatales
- 3 LED bar graph + 2 optional
- PMMA front lens with antifog treatment
- Power supply: 12 Vdc
- Protection degree: IP65
- 36 inputs, 4 outputs
- 2 CAN bus and 1 LIN interfaces
- RTC, buzzer
- Connectors: 1 Tyco 26 pins 3 keys and 1 Tyco 26 pins 5 keys



Customizable with
MTASTUDIO®

Simulable with
MTACORE®
SIMULATOR

IDEA

- Customizable dial plate
- Dimensions: 294 x 142 x 45.6 mm
- 7" color TFT LCD 800 x 480 pixel x 16.7M colors with optical bonding
- Portrait or landscape
- Front glass with anti-glare, anti-reflection, anti-fingerprint and anti-scratch treatments
- 4 push buttons and 18 telldatales
- Power supply: 12 Vdc (9-16 Vdc) and 24 Vdc (18-32 Vdc)
- Protection degree: IP65
- 18 inputs, 5 outputs and 1 Vref 5 Vdc output
- 2 CAN bus and 1 LIN interfaces, 1 analog video input
- RTC, internal buzzer, ambient light sensor
- Connectors: 1 Tyco Superseal 34 pins, 1 video input



Customizable with
MTASTUDIO®

Simulable with
MTACORE®
SIMULATOR

REVO PLUS

- Customizable dial plate, front bezel and internal mask
- Dimensions: 317 x 152 x 73 mm
- 4.3" color TFT LCD 480 x 272 pixel
- 3 analog gauges (optional 2 or 4 gauges)
- 4 push buttons and 32 telltales
- PMMA front lens with antifog/mineral glass (optional)
- Power supply: 12 Vdc or 24 Vdc
- Protection degree: IP66 front, IP65 rear
- 42 inputs, 4 outputs and 1 Vref 5 Vdc output
- 2 CAN bus and 1 LIN interfaces, 1 analog video input
- RTC, buzzer, night & day sensor
- Connectors: 1 Tyco Superseal 34 pins and 1 Tyco Superseal 26 pins



Customizable with
MTA**STUDIO**

Simulable with
MTA**CORE**
SIMULATOR

GALILEO

- Dimensions: 164 x 114 x 45.7 mm
- 5" color TFT IPS 800 x 480 pixel with optical bonding
- Multitouch screen (up to 2 touch points)
- Front glass with anti-glare and anti-fingerprint treatments
- Power supply: 12 Vdc (8-16 Vdc) and 24 Vdc (18-32 Vdc)
- Protection degree: IP69K
- 1 CAN bus, 1 USB, 2 Ethernet interfaces
- RTC, ambient light sensor
- Connector: 2x 12-pin connectors Deutsch DTM06-12Sx compatible
- Linux operating system

MTA provides the hardware and software reference BSP (Board Support Package) and SDK for the platform aligned with its internal roadmap and regularly updated according to software maintenance terms. For more details on software roadmap and SDK content please contact MTA. BSP will be a mix of source code and binary and will allow the customers to customize it according to their needs. Any BSP customizations, outside MTA roadmap, can be requested as an additional service.



GIOTTO

- Dimensions: 240 x 145 x 45 mm
- 8" color TFT LCD 800 x 480 pixel x 262k colors with optical bonding (landscape)
- Multitouch screen (up to 10 touch points)
- Front glass with anti-reflection and anti-fingerprint treatments
- Power supply: 12 Vdc (8-16 Vdc) and 24 Vdc (18-32 Vdc)
- Protection degree: IP66
- 10 inputs, 2 outputs and 1 Vref 5 Vdc output
- 2 CAN bus, 1 LIN, 2 USB, 2 Ethernet BroadR-Reach, 1 RS232 interfaces and 2 analog video inputs
- Loudspeaker mono, RTC, ambient light sensor
- Connectors: Tyco Superseal 34 pins, 2 mini BNC
- Android based device (Linux based OS on request)



LEONARDO

- Dimensions: 316 x 205 x 46 mm
- 12.1" color TFT LCD 1280 x 800 pixel x 262k colors with optical bonding (portrait or landscape)
- Multitouch screen (up to 10 touch points)
- Front glass with anti-reflection and anti-fingerprint treatments
- Power supply: 12 Vdc (9-16 Vdc) and 24 Vdc (18-32 Vdc)
- Protection degree: IP66
- 10 inputs, 2 outputs and 1 Vref 5 Vdc output
- 2 CAN bus, 1 LIN, 2 USB, 1 Ethernet BroadR-Reach, 1 RS232 interfaces and 2 analog video inputs
- Audio OUT
- Loudspeaker mono, RTC, ambient light sensor
- Connectors: Tyco Superseal 34 pins, 2 mini BNC
- Android based device (Linux based OS on request)



SOFTWARE FOR CUSTOMIZABLE DEVICES

MTA provides specific software tools developed in-house. These tools are used to program dashboards, displays and electronic control units with customizable functions. Each customer will be able to create a “tailored” device according to his needs.

MTA STUDIO®

MTA Studio is a specific tool used to program dashboards, displays and electronic control units developed with customizable functions which allow the customers to create “tailored” devices.

- Logic functions coded using graphical programming languages compliant to standard IEC 61131-3 (FBD – Function Block Diagram) or C/C++.
- HMI programmed using a WYSIWYG (What You See Is What You Get) interface: supported segment, dot matrix and TFT display technology.
- Easy to use: autocomplete helps to find variables and functions; clear graphic interface, simple application software interface: hardware is mainly managed by var to read and write.
- Integrated debugger based on XCP protocol.
- CAN bus interfaces support: J1939 transport protocols (BAM/CMDT), programmable CAN wake up and termination.
- Rich set of libraries: IEC 61131-3, odometer, hourmeter, etc.
- Real-time task management.
- Code protection using HASP USB dongle to prevent unauthorized access.
- Easy integration of external codes and libraries.

MTA GATE®

MTA Gate is a specific tool designed for EOL department and/or for technical service points use.

- MTA Gate allows to transfer a software generated by MTA Studio to all devices. The “Hardware Variant ID” and “Customer ID” prevent misuse and/or wrong software updates.
- Parameters setting: possibility to read and write EEPROM parameters on devices.
- Access to device services: take advantage of software application utilities such as stepper motor calibration.
- Parameters map import from MTA Studio.
- MTA Gate can be used by standard Windows GUI or command-line for EOL process automation purposes.
- MTA Gate license distribution through USB dongle.

MTA CORE® SIMULATOR

MTA Core Simulator is a tool that allows to simulate and debug MTA Studio applications directly on the PC.

- The tool allows to develop and test the application without a real target and provides a complete debug environment.
- Hardware virtualization allows to play with the configuration without harness.
- Simulation of run time behavior.
- Real ECU software runs on PC.
- Fully integrated with MTA Studio.
- “Simulation mode” is designed to help non skilled software engineers to easily understand how the application is working.
- “Debugger mode” is designed for C programmers that need a powerful debug environment.



DISPLAY

**PROTECT &
DISTRIBUTE**

POWER

CONTROL

CONNECT