Vision 307/312 Product Family

Rugged operator interfaces for off-highway machines

Key Benefits

- ✓ Brilliant 7.0/12.1" touchscreen display
- ✓ Excellent sunlight readability due to optical bonding
- ✓ Simultaneous display of up to four camera streams
- ✓ CAN, ISOBUS, USB, and Ethernet (Standard or Automotive BroadR-Reach®) interfaces
- ✓ Integrated loudspeaker
- ✓ Fast boot-up time and sleep mode

TTControl's latest rugged operator interface generation Vision 3 has been developed to meet the needs of mobile machinery OEMs of today and of tomorrow. The requirements for a display applied to mobile machinery architectures used to be simple with technical requirements on a basic level. Today, more and more data from sensors (sensor fusion), actuators and cameras must be processed to control complex working tasks.

Assisting the operator is becoming more important while in parallel machinery needs to operate more efficiently to increase productivity. Mobile machinery must get ready for (semi) autonomous operational processes and change the role of the machine operator from manual duties to supervisorial tasks. This ongoing trend results in the need for higher bandwidths and more CPU calculation power.

Built for harsh environments

The Vision 307/312 family includes Vision 307/312 and the advanced derivate Vision 307Plus/312Plus. Vision 3 is a robust display with 7.0/12.1-inch LCD screen and latest embedded electronics technology specifically designed for the requirements of the off-highway market. All displays developed by TTControl withstand dust and water ingress as well as extreme temperature and are resistant to shocks and vibrations. The environmental and electric testing has been done according to ISO 16750. The recommended ambient operating temperature ranges from -30 °C to +70 °C.

High-performance and bandwidth

Considering basic applications as well as future market trends such as autonomous operations and the related need for high-performant hardware and higher bandwidth, the Vision 307/312 display family is available with an ARM based-processor at 32 bit 800 MHz single core (Vision 307/312) or 1 GHz DualPlus/Quadplus core (Vision 307Plus/312Plus) processor reaching high computational performance. An advanced cooling concept ensures high CPU performance.

Ethernet for in-vehicle architectures

The Vision 3 display generation is equipped with all needed interfaces such as CAN, 100Base-TX Ethernet, USB or ISOBUS, making the display suitable to be placed in the center of modern mobile machinery electronic architectures. The front-end of the device serves as the central interface between the machine and the operator and has been optimized for intuitive user interaction and high user experience (UX). The operator is faced with only relevant data displayed to him in order to prevent overexertion. This approach results in less stress for the operator,

TTControl Italy, Brixen | Phone: +39 0472 26 80-11   **TTControl Austria,** Vienna | Phone: +43 1 585 34 34-0

For further questions please contact us at products@ttcontrol.com or visit our website www.ttcontrol.com.

increasing safety and productivity. The Vision 3 features display of video streams, pdf-files or picture animations and a picture-in-picture functionality.

Flexibility in design and mounting

Thanks to their very compact design (200mm x 135mm x 34mm for Vision 307 and 306mm x 212 mm x 34mm for the Vision 312), the Vision displays perfectly fits into modern cabins. TTControl's new high-performance display generation can either be mounted in the cockpit

dashboard itself (panel mounting) or through an arm elsewhere in the cabin and in portrait or landscape orientation. Moreover, thanks to the same pinout and the use of the same cable harness, the Vision 312 and Vision 307 can be easily exchanged with no effort, providing unparalleled flexibility in your cabin setup. The display design is similar to modern tablets. Thanks to its high brightness and optical bonding, the display ensures optimal readability in any lighting condition. Additionally, the touchscreen calibration has been optimized to work seamlessly with any type of work gloves and is easy to clean.

	Vision 307	Vision 307Plus	Vision 312	Vision 312Plus
System CPU	NXP i.MX6 application processor, 32bit ARM, 800 MHz, single core	NXP i.MX6 application processor, 32bit ARM, 1 GHz, DualPlus core	NXP i.MX6 application processor, 32bit ARM, 800 MHz, single core	NXP i.MX6 application processor, 32bit ARM, 1 GHz, QuadPlus core
Memory	4 GB eMMC Flash, 512 MB RAM	8 GB eMMC Flash, 2 GB RAM	4 GB eMMC Flash, 512 MB RAM	8 GB eMMC Flash, 2 GB RAM
Programming	Programmable with CODESYS® V3 with enhanced target visualization, including support for CANopen® master or C/C++			
Communication Interfaces	2 x CAN, 125 kbit/s up to 1 Mbit/s 1 x 100Base-TX Ethernet 1 x USB 2.0 K15 for ignition input RGB Status LED 1 x RS-232 1 x integrated loudspeaker	4 x CAN (one ISOBUS compliant), 125 kbit/s up to 1 Mbit/s 1 x 100Base-TX Ethernet 2 x USB 2.0 K15 for ignition input RGB Status LED 1 x RS-232 1 x integrated loudspeaker	2 x CAN, 125 kbit/s up to 1 Mbit/s 1 x 100BASE-T1 (BroadR-Reach ® Ethernet) 1 x USB 2.0 K15 for ignition input RGB Status LED 1 x RS-232 1 x integrated loudspeaker	4 x CAN (one ISOBUS compliant), 125 kbit/s up to 1 Mbit/s 1 x 100BASE-TX Ethernet 2 x USB 2.0 K15 for ignition input RGB Status LED 1 x RS-232 1 x integrated loudspeaker
Display	7.0'' 15:9 aspect ratio 800 (W) x 480 (H) pixel Projective capacitive touchscreen 800 cd /m² type	7.0" 15:9 aspect ratio 800 (W) x 480 (H) pixel Projective capacitive touchscreen 800 cd /m² type	12.1'' 16:10 aspect ratio 1280 (W) x 800 (H) pixel Projective capacitive touchscreen 500 cd /m² type	12.1'' 16:10 aspect ratio 1280 (W) x 800 (H) pixel Projective capacitive touchscreen 1000 cd /m² type
Cameras	2 x video input for external composite video cameras	4 x video input for external composite video cameras (four simultaneous video streams)	2 x video input for external composite video cameras	4 x video input for external composite video cameras (four simultaneous video streams)
Sensor and Actuation	Internal temperature sensors for ambient and CPU temperature			
	Ambient light sensor			
	I/O extension through CAN-connected I/O modules like HY-TTC 30			
Housing	IP65 front and back	IP67 front and back	IP65 front and back	
Mounting	Arm or panel mount Landscape or portrait orientation			