



LEFT AND ABOVE:  
Menu interfaces  
based on Weiss  
graphics libraries  
OPPOSITE: The Jenz  
chipper HEM 821 DQ  
Cobra+ hybrid  
MIDDLE: STW's  
display from the  
interACT-VSX family

# CHIPPER VISION

A FORESTRY VEHICLE MANUFACTURER'S SPECIFIC REQUIREMENTS FOR IN-CABIN DISPLAYS LED TO A VERSATILE AND HIGH-PERFORMANCE PRODUCT

Jenz is renowned for its high-quality chippers, used for chopping up shrubbery and heavy tree trunks, as well as for its top-class biomass processors. The company offers very different size and performance classes of vehicles and machines. To satisfy the increasing demands on the scalability across these classes as well as user-friendliness, parameterization, configuration, expandability and performance, Jenz has introduced new displays from the VSX family by Sensor-Technik Wiedemann (STW) into its products.

Jenz had been looking for the next generation of display control units, which could combine a high level of robustness with high performance, and be used in various sizes of construction series. It had to be possible to install these displays both

into a cabin and into a control cabinet, and preferably be available both with and without keys. Weiss Mobiltechnik, as a long-standing electronics development partner of Jenz and a specialist in display programming, control units and telemetry, suggested the new VSX display product series by STW. One important aspect from Weiss's point of view was any further development of the display software, established at Jenz, should be able to integrate existing software, and add new functions without much effort.

## A complete system

The VSX family offered the optimum prerequisites for these requirements. Linux and the GUI Toolkit QT are available in the standard version of this display with its Cortex A9 dual-core processor. In order

to support Weiss, STW also implemented a Codesys 3.5 runtime system on Linux. The interfaces between the Codesys runtime system and QT on the one hand, and the graphic library by Weiss on the other, were implemented in a special 'wrapper layer'. This now permits Weiss to use its graphics library and all the applications based upon it immediately on the STW displays without source code adaptations or other changes being required.

For the first project, Weiss used the VSX-10 display for the cabin of the Hem 821 DQ Cobra+ hybrid chipper, from which, in combination with an operating console, all the vehicle's functions can be controlled. The HEM 821 is a compact four-axle-truck with a steered trailing axle for extreme off-road capabilities and high maneuverability. The rotatable and

elevating driver's cabin provides an optimum overview, making it possible to change trucks at the location of operation even when the cabin is rotated, elevated, and with the carrier vehicle under full tractive power. The chipper is suitable for shrubbery and heavy tree trunks up to diameters of approximately 800mm (31in), and permits high-performance chipping in extreme, continuous operations.

The display plays a central role in the Hem 821. Individual settings can be undertaken for the driver in different display menus. The operating elements are implemented as sliders or buttons and the preferred setup for values such as the motor speeds can be defined in configuration menus. Certain working conditions and user profiles can also be created. Other menus permit the extension and retraction of the supports, regulation of the cabin itself, controlling the speed of the conveyor belt or the operation of the crane via touchscreen or buttons. It is therefore always possible to optimize the machine settings, to guarantee maximum economic viability. Up to 2,000 continuously-changing parameters including J1939 engine data,

speed or current fuel consumption are shown in special diagnosis menus using various display instruments. The high level of brightness also permits good legibility in direct sunlight. Regarding the presentation, the operator also profits from the high performance capability of the display. Menu changes take place spontaneously; the display instruments run jerk-free so that pleasant operation with immediate feedback is possible.

## Additional features

The professional version of the VSX-10 offers four CANbus interfaces, meaning that different buses are connected and gateway functions can also be implemented. It is even possible to wake up the display via defined CANbus messages. The control units used are the STW ESX-3CM for the chipper itself and the STW ESX-2-4 for the crane.

Furthermore, the control units and the display can be connected with a combined datalogger/telematic module – the TC3G by STW. A series of functions have been implemented by Weiss in the freely programmable embedded Linux available on this module. This means all operating

data can be recorded and transmitted via USB, wi-fi or mobile communications into the company-specific data processing.

Using the display enhancement capabilities, it is possible to also depict this function, in the display itself.

In future, further Jenz vehicles are to be equipped with the VSX display. Here, the family approach featuring different display sizes, from 8in to 15in, with the same platform is an advantage. Whereas the functionality does not have to be changed, the user interfaces can easily be adapted to the new dimensions through the Weiss graphic libraries. Regarding their use in control cabinets, not only is the protection class IP67 of benefit, but the resistive touchscreen also permits operation using gloves. The typical utilization of the two CPU cores lies at 20%, meaning that the display also provides sufficient space for new, improved algorithms, additional assessments and indications. **ivt**

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