AQUIS
INNOVO

AQUIS Seat Reservation Display

AQUIS Seat Reservation Display serves as reservation system front end, for open passenger carriages in railway rolling stock. Its core concept is to be flexible, and scalable to suit the individual needs both in terms of the system architecture and in visual appearance.

System architecture

The complete system consists of two basic units:

1. Central Unit
2. Display Modules for 1,2, 6 or 8 seats

Central Unit's task is to:

- Communicate on a serial line (RS 485, RS 232 or CAN) with the carriage's central passenger information system in order to receive reservation data from the seat reservation system. The communication protocol can be easily changed in order to comply the needs of different railway companies' requirements.
- Pass the information to dedicated display modules in order to display the text to be displayed (e.g. from station 'A' - station 'B')
- Acquire service data on the system, which can be received locally or can be sent to a central repair workshop

Central unit has two CAN communication lines, display modules are connected to one of the CAN channels. The system is modular, scalable. A single CAN bus supports up to 32-64 display modules.

The display module supports a bright, high contrast, monochrome graphic OLED screen with 3.12" diagonal size, and 256x64 pixel resolution. The small dot size allows highly detailed symbols and very smooth horizontal scrolling. A single module can host 1, 2, 6 or 8 individual OLED displays. Communication with the Central Unit is via CAN 2.0B with our own protocol or a user defined one. Both

the firmware of the controller and the character set of the application is updatable trough proprietary CAN bootloader.

Through Unicode encoding support multilingual text is easy to handle. Furthermore the character set is replaceable, from any FreeType font sets used by personal computers, which makes end user stylistic customization available with editable custom symbols. The number of available symbols in a character set is only limited by the memory. Using compression its footprint can be reduced, providing space for at least 1500+ unique glyphs up to several thousands, depending on the properties of the fonts.

Display module can be programmed to use the whole height of the module to display one character (this option provides 20 mm high characters), or the display area can be split up into to parts, resulting 10 mm characters. In this case 15-16 characters can be displayed by lines simultaneously. If text to be displayed is longer, the string is scrolled.

Considering character sets:

- Unicode encoding supported – plane 0/ a.k.a. Basic Multilingual Plane
- Character maps can be generated from any FreeType font sets.
- User editable glyphs/symbols can be installed
- Character set and/or user program can be updated via CAN

Specification:

Operating temperature	-40°C +50 °C			
Storage temperature:	-40 °C +70 °C			
	Central unit	1 or 2seats module	6 seats module	8 seats module
Mechanical dimensions:	-	142 x 80mm	230 x 115mm	230 x 155mm
Power onsumption:	2 W	1,2W / 2W	5W	6W
Sandards:	EN 50 155, IEC 61 373			
Power supply (all units)	24 V DC			