



Connecting radios all over the world

Customer Example Mimer Vehicle Panel



Release date 141210

Background

The Stockholm Metro System consists of about 109 km train line trafficked by trains with totally nearly 800 driver cabins.

The metro uses a Tetra system with Sepura mobile terminals.

The trains had a special designed panel also for the old radio system (before Tetra) and when upgrading wanted a new panel that would fit the same location in the driver cabin and with similar functionality.

The old panel had thumb wheel switches for setting of line and destination and it was decided that a touch screen would be a better solution if it could give the driver a similar graphic user interface.

Ruggedized Train or Bus Operator Panel

Mimer Vehicle Panel is a new driver operator panel for trains or buses. It consists of a touch screen where the radio is controlled along with other functions onboard the train.

The first generation panel was custom made for the Stockholm Metro, but can be redesigned to fit any train, subway or bus.

The panel connects to a Sepura Tetra radios PEI port and audio. It also communicates with other systems onboard the train.



The MVP in design for Stockholm Metro

The main function is setting of the line and destination of the train. This is done from a touch screen. The setting on the screen then sets the Tetra radios talkgroup and the destination signs on the train. In this way the driver only needs to set everything once.

The screen also have settings for back ground light and reading SDS's, and icons to show the volume setting and more.

The volume setting itself is done with a continuous rotary knob and beside of it is an alarm button that activates the Tetra radios emergency.

There is also a service menu on the panel and a separate software to make changes in the panels programming.

Tailor made

The panel can be made to connect to almost any radio system. Important to note is that also all the mechanical layout can be changed to fit almost any space and the external connections to connect to surrounding systems can be tailor made.

For the Stockholm Metro it was important that the new panel looked and had almost the same user interface as the 15+ year old panel it would substitute. So much of the design was given beforehand.

The first order for 800+ units is delivered and running since 2012.



MVP in "Set destination mode"



Pushing the alarm button

Environment

The MVP is built to withstand the harsh environment in a train. Neither a train that is built in the 1950:s or a modern train are easy places for any modern electronic equipment. We need to protect not only for the vibrations but also for electric spikes and dips. Modern EMC regulations are also important parts of the equation.

The panel is there for tested for compliance with EMC, temperature, shock, vibration and other environmental requirements. The front panel including the speaker is fully water proof.

Applicable parts of the following specifications are fulfilled:

Shock	ETSI EN 300 019-2-5
Vibration	ETSI EN 300 019-2-5
EMC	EN 50121-3-2:2007 class B
	EN 301 489-1 V1.8.1

Working temperature between -10 - 55 °C

Please also note that there are no publicly available operating system (like Windows, Android etc) eliminating the risk of hacking and viruses.

Connections

The panel connects to the radios PEI port for set up of talk groups, SDS messaging etc. It also communicates with the onboard PC system in the train and other train systems.

The audio is routed through the panel using the built in speaker and the train's microphones.

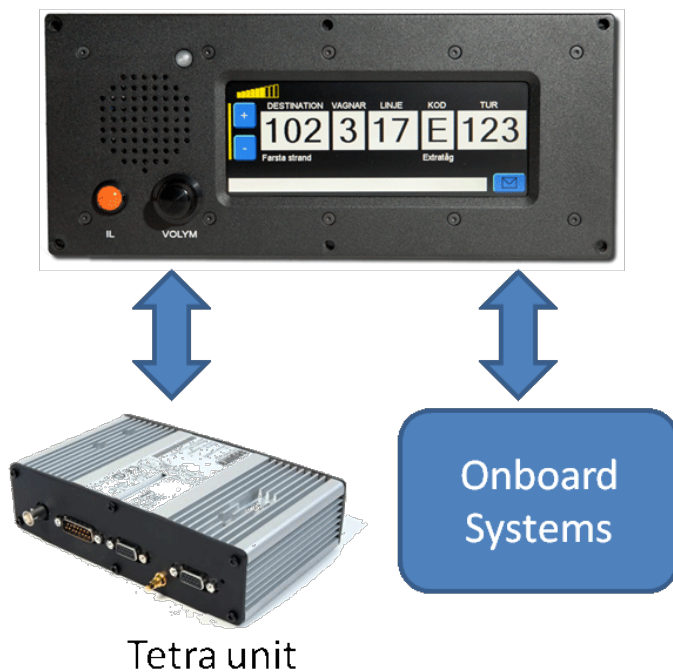
There is also a function to route audio from the dispatcher to the trains PA system by sending a special SDS message to the panel for start/stop of the function.



Back side of the MVP

Size

The Stockholm Metro panel is 280x120mm with a display of 150x57mm.



Tetra unit

Connections to the panel