

# Design of an ultra flat power supply for future slim TFT/LED displays

## Description

Next generation TFT and LED displays need to have a slim design to fit the space and design of the train interior. As the power supply is one of the dominant factors to define the thickness of the display, there is a need of a cost effective ultra flat galvanic isolated power supply.

The power supply will need to be stable under all conditions (closed loop) and will need to be compliant with the railway standard with regards to input voltage conditions, EMC, thermal behavior,... which will make the design very challenging.

The thesis should include the following phases

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- \*\* Requirement definition based on Televic products (power, budget, ...)
- \*\* Architecture definition based on technology study and existing examples
- \*\* Component selection (low profile planar transformer, filters, switching converter,...)
- \*\* Spice simulations
- \*\* Measurement & study of a devkit
- \*\* Schematic design and Layout
- \*\* Prototyping
- \*\* Board verification
- \*\* Environmental testing (thermal, EMC, ...)

The student will have the opportunity to go through the complete development phase of an electronic design, discuss with senior engineers, align with component manufactures and distributors

If you are interested in this topic, please also register this on the Televic website at:

<https://www.televic.com/en/careers/internships-and-students> so we can confirm the topic is still available.

## Televic Company/Department:

Televic develops, manufactures and installs top end high-tech communication systems for specific niche markets. A financially independent and stable group, Televic is divided into divisions that each focus on their specific market:

- [Televic Rail](#): passenger information systems and on-board control systems for trains
- [Televic Healthcare](#): communication systems for healthcare
- [Televic Conference](#): conference systems for large venues
- [Televic Education](#): multimedia and e-learning solutions for staff training and educational institutions

Televic creates added value for its customers by developing custom-made solutions and by continuously innovating at the cutting edge of technology.

With headquarters in Belgium and offices and plants across Europe, Asia and the US, Televic employs nearly 700 people worldwide.

## About Televic Rail

With over 30 years of experience in designing, manufacturing and maintaining on-board communication and control systems, Televic Rail is a leading, trusted partner for railway operators and train builders worldwide.

Its Passenger Information Systems and Control Systems are high quality, tailor-made solutions that offer the flexibility, user-friendliness and stability that our clients ask for. Our various types of on-board control systems such as our bogie monitoring systems are innovative yet reliable products which are designed specifically for the railway business.

Trains and trams all around the world are equipped with Televic Rail solutions, from New Zealand to Canada, from China to the United States, from India to Belgium, England and France.

## Contact

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<https://www.televic.com/en/careers/internships-and-students>

## Nature of the work

Level	Specialty	Type of work.	Location	Type of activities	Num of students
Master	Electronics / Hardware	Research: 30% Implem.: 50% Experim.: 20%	Televic	Implementation, Measurements, Simulation	1 or 2