

Resumé

Senior designer of analogue and power electronics.
After military training, I started the company Lab.Gruppen in 1979 and I was a 50% shareholder until the year 2000.
Lab.Gruppen manufactures high power audio amplifiers.
I was the design engineer of Lab.Gruppen amplifiers until 2005, when I started the company Power Electronic Design.
My special expertise is the development of analogue and switching circuit solutions for power up to 15kW.

**Born: 1956**

EDUCATION

1976 Military Education. Deputy Group Manager for the repair group for shortwave radio systems for communication with the Supreme Commander.

1975 The Institute of Applied Electronics. Distance Education

1973 Upper secondary school Education of electronics and telecommunication

COURSES

2009 Cadence PSpice AD

PREVIOUS EMPLOYMENT

1979 Lab.Gruppen AB, Owner

PROFESSIONAL EXPERIENCE

1979 – 2022

- Pre-development of 350kW inverter for automotive industry based on silicon carbide technology.
- Simulation and design of 3phase 230V 50Hz 5kW buck PFC with silicon carbide components.
- Simulation and design of 3phase 115V 400Hz 5kW Vienna PFC with silicon carbide components.
- Simulation and design of 400Vdc – 30Vdc 5kW LLC converter with silicon carbide components.
- Design of -48V 3000A surge test generator for telecom.
- Simulation and design of 24V 300A 3phase motor inverter.
- Construction of 10kW power supply for telecom with passive cooling.
- Construction of 1kW power supply with wide input voltage range and 6 insulated output voltages.
- Construction of the starter circuit for tig welding.
- Design of equipment for inductive heating
- Construction of power supply with wide input voltage range.
- Construction of welding inverters.
- Construction of test systems for PLD-testing in the telecom industry.

- Construction of a test system for audio measurement of components for power distribution.
- Construction of large number of power amplifiers for audio with high power >13.000W.
- Project management for audio power amplifier platform.
- Management of enterprises with 40 employees.
- Electrical safety testing and approval of mains-operated products.
- EMC testing and approval of mains-operated products.
- CE marking of products.
- Development and implementation of quality assurance procedures for compliance with the requirements of UL approval of the factory.

DEVELOPMENT TOOLS

- Cadence PSpice AD analogue simulation
- CADINT electronic engineering system
- Autocad LT

GENERAL KNOWLEDGE/SKILLS

- Design of magnetic components
- Cooling of electronics
- Electrical Safety Standard EN60065, EN61010
- EMC standards for products connected to mains
- EMC standards for telecom products
- Microsoft xl
- Microsoft word

LANGUAGES

Swedish
English

PUBLICATIONS/PATENTS

2003 EP 1366637
A communication system

1991 EP 0 483 094

A pulse-width modulated, linear audio power amplifier

COMMISSION EXPERIENCE**2015-2022 Qrtech Gothenburg**

Pre-development of 350kW inverter for automotive.

- Silicon carbide technology
- 800V system

Development of 5kW power supply system

- Uin 115V 400Hz or 230V 50Hz 3phase with PFC.
- Uout 30V 167A

Development of 3phase motor inverter

- Input voltage 24V
- Phase current 300A
- Surface temperature for cooling 100°

Development and CE marking of 10kW power supply for telecom.

- Input voltage from 60V to 265Vac
- Output voltage 40-58Vdc 200A

2012-2013 Emerson Rousemount Tank Radar Gothenburg

Development of power units with high input voltage and temperature range.

- Input from 20V to 265V ac or dc
- Temperature from -40 ° to + 70 °

2010 - 2016 ESAB Gothenburg

Development of tig starter for welding machine.

- 800V 150A pulse generator.
- 15kV output voltage.

Development of 1kW power supply

- 400 - 1100Vdc input voltage range.
- 6 insulated outputs with 8kV insulation.

Development of 4kW welding inverter.

- Suggestions for new circuitry for a single phase 4kW welding inverter with PFC.
- Design, manufacture and evaluation of an inverter according to these ideas.

2013 ATRICON Karlstad

Development of power unit for induction heat.

- 3x200W energy in steel rule through 13mm plasterboard.
- Battery operation.

2010 Husqvarna Gothenburg

Development of 600W power supply with

90 – 600Vac input voltage range.

- Preliminary study on the possibility of constructing a power supply with wide input voltage range.
- Design and manufacturing of prototype.

2007-2009 Ericsson, Power Solutions Gothenburg

Review of standard for PLD (Power Line Disturbance) tests.

- Suggestions for practical measurement techniques.
- Summary of the need for test equipment.
- Production of test manual.

- Manufacture of test equipment such as:

- Test-instrument for simulation of short circuit in the distribution of -48V with subsequent energy pulse. Short-circuit current up to 2000A, energy up to 20Ws.

- Controlled power supply + - 150V, 150A, 20V/μs in sleeve rate.

- LIS-net for transient test with built-in adjustable voltage clamp.

Circuit solutions for switch mood power supplies, and manufacture of prototype for verification of function

- An -48V in, +20/30V out 200W converter that quickly can switch between 2 programmable output voltages.

- Compact -48V 7J (700W 10ms) energy storage circuit. (Holdup energy)

- Alternative soft start circuit with low inrush current for -48V systems.

- Alternative solution for voltage converter

-48V - +7 V.

2006 - 2009 ABB AB Corporate Research

Development of test method for large reactor coils in the frequency range 50 Hz - 1.5 kHz to allow the measurement of acoustic radiation. The circulating energy during the measurement is >1.500kVA.

- Capacitor bank 0.8 - 10.000uF 10.000V 200A.

- Control unit for control and monitoring of current and voltage in the resonant circuit.

- Adjustable inductance 0.2 - 1mH 200A.

- Impedance matching of 10.000W audio power amplifier to the resonant circuit for optimum power transfer.

2005-2009 Acticut AB

Development of analogue electronics for a system of active vibration damping in mechanical lathe machinery.

- 1kW analogue amplifier for driving a piezo actuator.

- 600W power supply with PFC.

90 - 230V Input voltage.

- Mechanical design and construction of 19inch 2HE enclosure.

1979-2005 Lab.Gruppen AB

1979-2000 owner

Construction of a large number of power amplifiers for audio including items:

- Patented circuit solution for an amplifier module consisting of a combination of linear amplifier and switching converters. The design provides high efficiency, high power and high reliability. Power >6.500W

- Flyback power converter >13.000W

- Custom design of ferrite core for flyback converter.

- Calculation and optimization of power compensated EMC mains filter.

- Electrical safety requirements for a large number of products.

- Construction of analogue circuits with high immunity to electromagnetic fields.

- EMC measurement and CE marking of a wide range of products.

- Optimization of mechanical design for low production cost / EMC shielding / electrical safety / mechanical stability / attractive design.