


The 1924 2.2 km electrically small Grimeton VLF antenna

Abstract



Presentation of the VLF high power transmitter at Grimeton, Varberg. The multiple tuned antenna system fed via the high frequency transformers from the alternator (generator) is presented and discussed. The 2.2 km long and 127m high, electrically small, multiple tuned antenna system was devised by Ernst Alexanderson. The equivalent schematic is shown in a simplified way leading to a better understanding of the antenna. The VLF signal needs to be modulated in some way to be able to convey any information. The modulation of the signal is carried out by a "magnetic amplifier" also devised by E. Alexanderson. The connection between the "magnetic amplifier" and the the high frequency transformer is described and is planned to be supported by measurements.

Workshop outline

Presentation of the 100 year old system, with additional modern measurements.
Discussion around some of the functionality, where we do not have a complete understanding.
How was the inventor thinking when designing some of the integrated components?

Speakers

Robert Petersson was born 1956 in Karlskoga. He graduated from Chalmers University of Technology with a M.Sc. in Electrical Engineering in 1981. He has a long professional experience in the field of antennas and microwave engineering. He is also a licensed radio amateur (SM6GHS) since 1974. He started his career at LM Ericsson in Mölndal 1981, working mostly in the area of spaceborn antennas. From 1999 the technical area was spaceborn microwave electronics. From 2018 Robert is employed at Qamcom Research and Technology. Robert is a member of the Alexander Friendship Association since many years and have more recently participated in the associations courses in operation, maintainance and understanding of the Grimeton VLF transmitter.