Lifetime prolongation of ICRF Generators, practical aspects and results

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To overcome final tube obsolescence of 2MW generators in service for AUG and to gain hands on experience with a potentially ITER relevant tetrode from CPI, a 1.5MW generator, previously used for ASDEX and W7-AS and described in [1], was converted using a 4CM2500KG based plug & play replacement for the CQK650-2 tetrode. A similar conversion, substituting a different tetrode was reported in [2] and served as a guideline.
IPP Garching reactivated the generator that had been out of service for many years and prepared and tested the required infrastructure.
A mechanical adaptation kit designed by ITER India was manufactured by IPP Garching. Fitting the generator with the tube replacement and testing it was a joint activity at IPP Garching.
With a careful tune up the generator achieved 1.5 MW RF output power. Further infrastructural improvements to reach 2MW are on the way.

[1] W. Schminke et al., "The 1.5 MW ICRF heating generators for ASDEX and W VII", 10th Symposium on Fusion Engineering, 1498-501, Philadelphia (1983).
[2] N. Greenough et al., "Upgrading the General Atomics Radio-Frequency sources for higher power", 22nd Symposium on Fusion Engineering, 214-17, Albuquerque (2007).