

# ESS Klystron Production Test Stand

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Diversified Technologies, Inc. (DTI) has delivered a new long-pulse modulator klystron test stand to Communication and Power Industries (CPI) in Palo Alto, CA for full power testing of production VKP-8292A klystrons for the European Spallation Source (ESS). This test stand was built using hardware and designs from an earlier SBIR effort for the Department of Energy, with modifications to support ESS requirements and klystron testing operation. Earlier versions of this design are in use at IPN Orsay and CEA Saclay in France to test RF components for ESS.

This new klystron test stand allows testing of klystrons at the full ESS specifications: 100 kV, 50 A, 3.5 ms pulse, 14 Hz,. This design is based on a (patent pending) non-dissipative regulator that compensates for the capacitor droop voltage (~20%) during the pulse. This allows a much smaller capacitor than would nominally be required for the long ESS pulse, eliminating the need for larger, more expensive capacitor bank. This test stand will speed delivery of ESS klystrons, and similar, long pulse, high power klystrons at CPI.