PPPS 2019



Contribution ID: 1144

Type: Oral

A COMPACT SOLID STATE TRIGGER GENERATOR UTILIZING A FERRITE LOADED AIR CORE TRANSFORMER*

Monday 24 June 2019 10:15 (15 minutes)

As pulse modulators are increasingly built more compact, so do the ancillary supporting electronics systems have to decrease in size. The trigger system presented, utilizes a 10kV 10kA capable solid state switch to conduct energy through a ferrite loaded air core transformer. The final output is capable of reaching 60-70kV in less than 100nS, with extremely low jitter with reliable (or consistent) performance. Depending upon the charging supply this system is capable of repetition rates of 88 Hz in continuous or burst mode operation. Higher voltages or faster rise-times are also supported based on lower repetition rates limited by the size and capability of the compact 10 kV power supply.

 Work is sponsored by Air Force Research Laboratory (AFRL)/RDH, Kirtland Air Force Base, under FA9451-17-D-0070

Authors: GILBRECH, Joshua (Leidos); Dr HEIDGER, Susan (U.S. Air Force Research Laboratory); SCHROCK, James (AFRL); Dr PARKER, Jerald (Leidos, Inc.); RICHTER-SAND, ROBERT (LEIDOS)

Presenter: GILBRECH, Joshua (Leidos)

Session Classification: 8.5 Power Supplies and Modulators I

Track Classification: 8.5 Power Supplies and Modulators