NASA SBIR 2006 Phase I Solicitation

S5.01 Voltage Supplies and Charge Amplifiers for Solar Science Missions

Lead Center: GSFC

For success of future solar science missions, it is critical to develop future enabling technologies which are modular, compact and efficient. This subtopic focuses on innovations for two technology areas: (1) The first area is compact, sealed and efficient high voltage supplies for space use; (2) The second technology area is high gain, wide dynamic range charge amplifiers. Specific module details are provided as below.

High voltage power supplies can be divided into 3 kilovolt categories: low (\(\lt 1\) kV), medium (1-3 kV) and high (>3 kV).

The charge amplifier ASIC shall be of low power, high gain and low noise. The ASIC shall be developed for at least 16 channels, with capability to daisy chain the amplifiers. Individual channels shall contain offset correction, gain correction and input capacitance tuning. The ASIC shall be designed for optimum operating temperature, radiation tolerance and ESD safe inputs.

The proposer shall describe the innovation and specific improvement over the current state of the art.