

## Technical Memo on ACS Preamplifier

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The Anti-Compton Suppression shield essentially consists of HAMAMATSU R3998-02 with High voltage bias voltage of -1KV @0.4mA. The anode is grounded through 1Mega ohm load resistor. The pre-amplifier is essentially a High speed buffer amplifier with High current, wide band capability. The schematic is shown here along with bill of material and typical PCB layout and assembly drawings.

### Operation

The signal from ACS shield is fed to the pre-amplifier is terminated on 1K ohm load resistor. The over voltage protection network is wired to protect buffer from any high voltage glitches. The output is series terminated with 50 ohms. The DC power supply (+/-12 V) lines are polarity protected and decoupled with high value solid tantalum capacitors.

Five such pre-amplifiers are fabricated in a single double sided PCB using SMD components and assembled in a die-cast Aluminium box. The input and output connections are provided through LEMO connectors. The DC supply lines are fed through 9 pin D connector.

### SPECIFICATIONS

No. of Channels	Five
Impedances	1K ohm Input, 50 ohm Ouput reverse termination.
DC supply	$\pm 12$ Volts, 10mA each (Idle)
Bandwidth	DC- 100MHz
Protection	DC Supply and Input are protected.
Gain	2
Packaging	Die-cast Al. Cabinet

