

VIOLINIST IV

Special Purpose Multi-Channel Analyzer



TSA's Violinist IV is a full featured, multi-channel analyzer (MCA) with a portable, battery powered package. The high voltage power supply is capable of providing up to +1,200 Vdc to power the external Field Instrument for Detection of Low Energy Radiation (FIDLER) NaI detector ([Alpha Spectra](#)). The FIDLER probe is effective in detecting 10keV to 100 keV X-rays and gammas.

It is ineffective in detecting photons of greater energy. This is a distinct advantage as it greatly reduces the interference from higher energy gammas and X-rays which is present in thicker detectors.

The two regions of the spectrum that are of particular interest for quantifying Americium (Am) and Plutonium (Pu) are the X-rays between 10-20 keV and between 63-100 keV. In particular, the 16 keV and 60keV peaks of the spectrum are used by the analysis software's algorithms.

The Violinist IV may be purchased as separate components, or as part of the Violinist IV Kit. The kit includes the battery/power supply box, a five inch FIDLER Detector, detector socket integrated MCA, tripod stand, OQO micro-computer and foam lined carrying case.

OPERATION: The analysis software for the Violinist IV Kit has been designed for use on a small portable computer to allow the system to be mobile for emergency response teams. The software will operate on any Windows™ 32-bit operating system and only requires a USB serial communications link to obtain data from the MCA and perform calculations.

The amplifier gain may be "fine tuned" using the micro-computer and an external radioactive source. The operator can adjust the gain to ensure the energy peak is in the proper channel.

The **Auto Cycle** option will cause the software to continually cycle, automatically resetting the MCA at the end of each count cycle. This can be useful in conjunction with the auto file save option of multiple readings are desired at the same location.

The **Auto File Save** feature causes the program to automatically save all of the system's data into a text file at the end of a count cycle. The text file contains all of the calculated values, configuration settings and the spectrum's channels with current counts. The files are named based upon the time and date at the end of a count cycle. They are automatically written to a directory named SavedData that is located directly beneath where the application is kept on the system's hard-drive.

SPECIFICATIONS

DETECTOR:	Designed specifically for use with a 14 pin base FIDLER Detector
COMPUTER:	Micro PC or ruggedized notebook
COMMUNICATIONS:	USB communications capability
DATA STORAGE:	Thousands of spectra can be stored on the hard drive (dependent of drive size)
POWER REQUIREMENTS:	Eight, "D" size alkaline cells provide 24 hours of operation time
DIMENSIONS:	6.2"h x 9.4"w x 4.9"d (15.8 x 24 x 12.5cm)
WEIGHT:	7.5 lb (3.4kg) instrument only, including batteries
ENVIRONMENTAL:	32° to 100° F (0° to 38° C)
OPTIONS:	Rechargeable Lithium Ion batteries

