The RAS-120 is a compact 120-channel, high resolution, signal enhancement seismograph designed for shallow refraction and reflection surveys. The system combines state-of-the-art 24-bit conversion in a compact, expandable architecture. The RAS-120 can be configured with connectors to match existing cables and ground equipment and is available in 72, 96 and 120 channel versions.

▪ Easy to use

Operating under Windows, the RAS-120 system software has a familiar point and click interface which is easy to learn and operate. With toolbars scroll bars and single key commands for commonly used functions, the RAS-120 user interface is designed to allow direct access to important system functions.

And setting up the RAS-120 couldn't be easier. Select the type of survey you want to perform - refraction, 2D reflection with roll, or 3D - and the software configures itself.

▪ Consistent Data Quality

The RAS-120 provides an extensive array of tests to ensure that data is accurately recorded. Tests include amplifier noise, dynamic range, A/D offsets, amplifier pulse, CMR, timing accuracy, crosstalk, phase similarity, and gain similarity. Tests can be performed individually or a complete system test can be performed automatically with the test results logged to disk.

▪ Reduced Field Setup Time

Finding marginal geophones and intermittent spread cables can be a real chore in the field. But with geophone resistance, geophone pulse, geophone similarity, and cable leakage tests, the RAS-120 can easily locate geophone and cable problems before they affect your data.
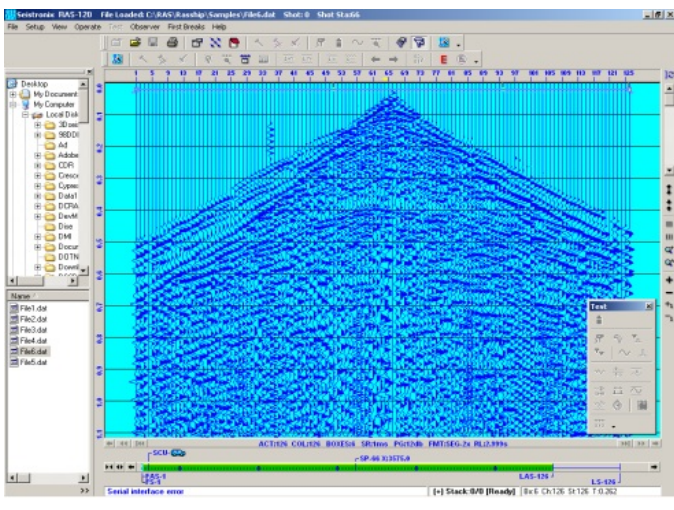
▪ Advanced System Software

The RAS-120 system software provides a broad range of features to aid in collecting quality data in the field. For refraction or reflection surveys, data may be previewed, filtered, AGCed, stacked or unstacked as desired.

For 2D reflection shooting, the RAS-120 offers line management with autoroll, and a line geometry display showing the shot point, roll direction, total number of channels on line, and active channel positions. Conventional 2D reflection surveys using standard CDP cables and a roll-a-long box are also facilitated. For 3D surveys, the RAS-120 has an integrated 3D script editor for specifying how the 3D lines are configured and which portion of the   spread is active for each shot.

Intuitive display options allow you to view the data the way you prefer. With a single click, you may expand or contract the display in the time or channel direction, display all the even or all the odd traces, or zoom in on an individual channel.

Other features include an observer's log, recorded with each record, and a time-stamped shot log which provides a continuous log of recording activity allowing you to retrace events in the field. And when you're back in the office, you can review the observer's log and view, pick and print records on your office system using the same software that you ran in the field.

Typical 120 channel record

- ▪ Available with 120, 96 or 72 channels
- ▪ 24-Bit Delta-Sigma A/D conversion
- ▪ Wide dynamic range (117db @ 2ms)
- ▪ Use existing cables and roll switch
- ▪ Compact and lightweight
- ▪ Automated system performance tests
- ▪ Operates with any laptop
- ▪ Runs under Win 98/ME/2000/XP

RAS- 120 Specifications

GENERAL

Number of Channels:	120, 96 or 72 channels
Sample Intervals:	0.125, 0.25, 0.5, 1, 2 and 4 ms
Record Length:	4 ms - 64 sec, 2 ms - 32 sec, 1 ms - 16 sec, .5 ms - 8 sec, .25 ms - 4 sec, .125 ms - 2 sec
CDP Operation:	Automatic or manual roll of entire spread
Stacking:	Vertical stack in the laptop or in the RAS-120
Recording Format:	SEG-2, SEG-D 8038, SEG-D 8058

RAS-120 MODULE

A/D Resolution:	24 Bits
Preamp Gain (PG):	12db, 24db, 36db or 48db, remotely selectable
Frequency Response:	.125 ms: 2 - 2000 Hz, .25 ms: 2 - 1650 Hz, .5 ms: 2 - 825 Hz, 1 ms: 2 - 412 Hz, 2 ms: 2 - 206 Hz, 4 ms: 2 - 103 Hz
Dynamic Range:	112db @ 2 ms PG=36db, 117db @ 2 ms PG=12db (typ)
Distortion (THD):	<.005% at 25 Hz, 2 ms sample interval (typ)
Crosstalk:	Greater than 90db
CMR:	Greater than 90db @ 60 Hz
Max Input Signal:	.88 VRMS @ 12db, 55 mVRMS @ 36db
Input Noise:	.21 VRMS @ 2ms PG=36db, 1.6 VRMS @ 2ms PG=12db (typ)
Anti-Alias Filters:	4 ms 103 Hz, 2 ms 206 Hz, 1 ms 412 Hz, .5 ms 825 Hz, .25ms 1650 Hz, .125ms 3300 Hz
Test Oscillator:	10, 25, 50, 60, 100, 125, 200, 250 Hz Amplitude adjustable in 10 mV steps
Instrument Tests:	Internal digital tests, battery voltage, internal voltage, crosstalk, amplifier pulse, CMR, amplifier noise, dynamic range, gain & phase similarity, communications, and trigger verification
Line Tests:	Geophone pulse, geophone similarity, geophone resistance, leakage
Connectors:	Three to five spread cable connectors as specified by customer 3-pin Bendix for trigger, two 6-pin Bendix for data, 3-pin Cannon for power. Waterproof Bendix connectors are optionally available for the signal inputs.
Power:	12 volts nominal. 120 Chs: 7.5A, 96 Chs: 6A, 72 Chs: 3A
Physical:	23″ x 22.5″ x 10″, 42 lbs
Operating Temp:	-30 to 70°C

INTERFACE

USB-100 USB Interface - This interface consists of a small box that connects to the laptop's USB port through a short cable. This interface transfers data at 2.45Mbps and provides a trigger input for triggering the RAS-120 system. Power for the interface is supplied by the laptop.

ACCESSORIES

Geophones
HS-1 Hammer switch with 5M cable and mating connector
Striker plate 8" x 8" x 3/4"
BP-1 12-volt battery pack and charger
100M Trigger extension cable
Hammer switch spread cable adapter
Portable printer
HVB-100 Seismic blaster
Refraction and reflection processing software

Portable Ruggedized Computers

Seistronix can supply ruggedized, daylight readable computers suitable for field work from Panasonic, Amrel, Itronix, and Dolch. Please contact Seistronix for the latest models and pricing.

RAS-72

RAS-96

RAS-120