Hawk® SN11 recording system

GROUND EQUIPMENT

FIELD STATION UNIT (FSU)

The Field Station Unit (FSU) is a versatile and rugged cableless field digitizer used in the Hawk recording system. Electronics are housed in an aluminum enclosure, validated using military test standards. The FSU can include up to 3 analog channels in addition to a 3 component digital VectorSeis sensor interface providing an array of channel and deployment configuration options with a single set of ground equipment.

GENERAL SPECIFICATIONS

Number of analog channels:

1, 2 or 3

Number of VectorSeis 3C digital interfaces:

1 (optional)

Data Storage Capacity:

16 GB non-volatile flash memory

Power Consumption:

309 mW (1-channel analog)

380 mW (3-channel analog)

950 mW (VectorSeis 3C digital)

External Battery Input:

10-17 V

LED Status Indicator:

Station Health, Sensor Health, GPS Signal, Battery Voltage

Wireless Communication Interfaces:

Bluetooth and Wi-Fi

Sensor Input Connector Options:

6 pin Dynacon (multi-channel configuration)

5515 (single channel analog configuration or VectorSeis interface)

Special connector types optional

Power/Ethernet Connector:

8 pin Dynacon

Timing accuracy:

+/- 25 µs

ENVIRONMENTAL SPECIFICATIONS

Storage Temperature:

-50 °C to +85 °C

MIL-STD-810F Method 502.4, Procedure I

Operating Temperature:

-40 °C to +85 °C

MIL-STD-810F Method 501.4, Procedure II

Operating Altitude:

4000 meters

MIL-STD-810F Method 500.4, Procedure II

Salt Fog:

24 hours wet, 24 hours dry; two cycles @ 35 °C

MIL-STD-810F Method 509.4, Procedure I

Immersion:

24 hours, 3 meters depth

MIL-STD-810F Method 512.4, Procedure I

Shock and Drop:

48 inches onto 2 inch plywood on concrete; 26 times on each face, edge and corner

MIL-STD-810F Method 516.5, Procedure IV

Loose Cargo Transportation:

3 cycles

MIL-STD-810F Method 514.5, Procedure II, Category 3

PHYSICAL

Size:

167.64 mm x 203.2 mm x 55.88 mm

(6.6" x 8.0" x 2.2")

Weight:

1.72 kg (3.8 lb)

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GROUND EQUIPMENT

FIELD STATION UNIT (CONT.)

ANALOG SPECIFICATIONS

Performance specifications are typical values at 25 °C and 2 ms sample interval.

A/D Converter
24-bit

Preamplifier Fixed Gain Levels
G0, G1, G2, G3, G4, G5 (Unity, 6 dB, 12 dB, 18 dB, 24 dB, 30 dB)

Sample Interval
1/4 ms, 1/2 ms, 1 ms, 2 ms, or 4 ms

Maximum Input Signal

1768 mV RMS;	2500 mV peak at G0
884 mV RMS;	1250 mV peak at G1
442 mV RMS;	625 mV peak at G2
221 mV RMS;	313 mV peak at G3
110 mV RMS;	156 mV peak at G4
55 mV RMS;	78 mV peak at G5

Dynamic Range (DR)
Non-shorted input Instantaneous DR
127 dB at G0
127 dB at G1
126 dB at G2
125 dB at G3
121 dB at G4
116 dB at G5

Total dynamic range
147 dB

Equivalent Input Noise (EIN)
0.79 µV RMS at G0
0.39 µV RMS at G1
0.22 µV RMS at G2
0.12 µV RMS at G3
0.10 µV RMS at G4
0.09 µV RMS at G5

Total Harmonic Distortion
0.0001%
Common Mode Rejection
110 dB or greater

Frequency Response
0 Hz to 1652 Hz

Input Impedance
Differential mode 20 kohm in parallel with 12 nF
Common Mode 2.0 Mohm in parallel with 1 nF

Digital anti-alias filters (remotely selectable):
- Zero or Linear Phase response
- 1652 Hz at 1/4 ms sample interval
- 826 Hz at 1/2 ms sample interval
- 413 Hz at 1 ms sample interval
- 206.5 Hz at 2 ms sample interval
- 103 Hz at 4 ms sample interval
- Rejection above Nyquist frequency: 135 dB
- Passband ripple ± 0.003 dB

DC removal
Static (zero phase shift)

Analog Built-in Tests (BITs)

Internal Tests	External Tests
Instrument Noise	String Resistance
Instrument Common-Mode Rejection (CMR)	String Leakage
Test Generator Harmonic Distortion	Spread Noise
	Power Line Pickup
	Sensor CMRR
	Sensor Distortion
	Sensor Natural Frequency
	Sensor Damping
	Channel Cross-feed

HAWK

GROUND EQUIPMENT

EXTERNAL POWER PACK

Purpose built high energy density Lithium Ion battery pack used to power an INOVA cableless field station unit. Options include a standard capacity 192 WHr pack, optional low capacity 96 WHr and optional high capacity 288 WHr pack.

SPECIFICATIONS

Capacity:

192 WHr (standard); 96 WHr (low capacity); 288 WHr (high capacity)

Charge time (max.):

192 WHr pack - 4 hours; 288 WHr pack - 6 hours

Charge Temperature Range:

0 °C to +40 °C

Discharge Temperature Range:

-40 °C to +60 °C

Transportation Certification:

Tested to ensure compliance with UN/IATA requirements for Lithium Ion batteries

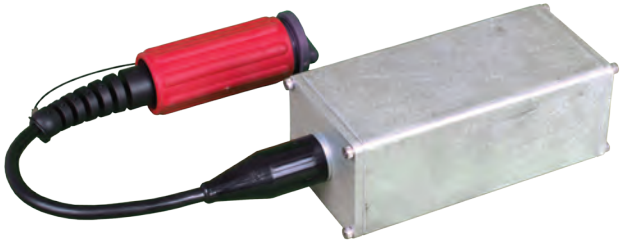
PHYSICAL

Size:

195.58 mm x 96.52 mm x 73.66 mm
(7.7″ x 3.8″ x 2.9″)

Weight:

2.49 kg (5.5 lb)



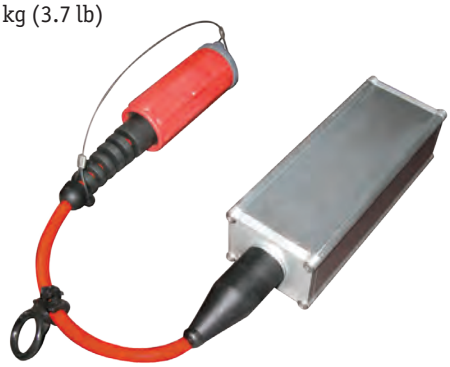
192 WHr Power Pack

Size:

195.58 mm x 55.88 mm x 73.66 mm
(7.7″ x 2.2″ x 2.9″)

Weight:

1.68 kg (3.7 lb)



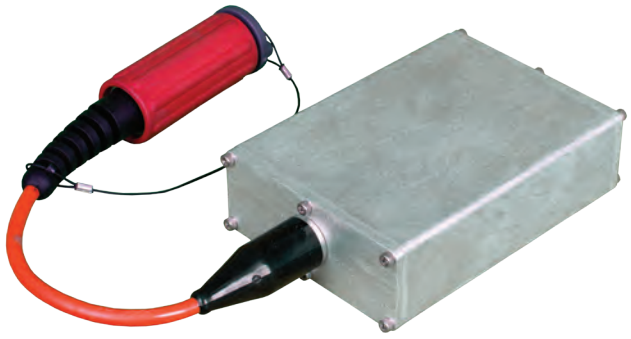
96 WHr Power Pack

Size:

195.58 mm x 137.16 mm x 73.66 mm
(7.7″ x 5.4″ x 2.9″)

Weight:

3.45 kg (7.6 lb)



288 WHr Power Pack

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CENTRAL RECORDING EQUIPMENT

Hawk cableless central system typically includes the Central Station Computer (CSC) and INOVA Source Interface (ISI).

CENTRAL STATION COMPUTER (CSC)

The Hawk CSC is the observer's console for in-field operations. It provides visibility into all deployed, cableless Hawk ground stations by downloading hardware status from a portable data collector.

FEATURES

- Shock protected for off-road vehicle mounting
- The ruggedized computer is mounted in the enclosure
- Central Station Computer (CSC)
  - Central command & control
  - Parameter & prospect management
  - Source control & sequencing
  - Remote unit status monitoring
  - Storage and export of CSC database for import to Transcriber
  - Microsoft® Windows® Server 2008 OS and SQL Server 2008 database
  - Multi-monitor video support
- Real time GPS tracking of ground crew and vehicles (with optional INOVA GPS Tracking application)
- SPS File Support
  - Spread, script and map generation
  - SPS file import and export
  - SPS Center of Gravity (CoG) export
- INOVA source controller integration
- Spread Monitoring
  - Color-coded icons in schematic and map view represent source and receiver status
  - Tabular views with advanced sorting and filtering options:
    - Hardware status
    - Voltage status
    - Software revision
    - Serial number
    - Sensor built-in test results

HAWK

CENTRAL RECORDING EQUIPMENT

CENTRAL STATION COMPUTER (CON'T)

SPECIFICATIONS

Input voltage:

110-240 VAC, 50/60 Hz

Operating temperature:

+5 °C to +35 °C

Storage temperature:

-40 °C to +75 °C

Humidity:

20% - 80% non-condensing

Standard Monitors (4 with system):

27" flat screen, 2560 x 1440 resolution

PHYSICAL

Size:

445 mm x 193 mm x 366 mm

(17.5" x 7.6" x 14.4")

Weight:

6.9 kg (15.2 lb)

Total Central Computer Rack Dimensions:

736.6 mm x 533.4 mm x 508 mm

(29" x 21" x 20")

Total Central Computer Rack Weight:

68 kg (150 lb)

VIB PRO ENCODER

Hawk utilizes the Vib Pro encoder for both dynamite and vibroseis source production to communicate with field decoders.

SPECIFICATIONS

Power Input: 36 W

Voltage Input: 9 Vdc – 36 Vdc

Frequency Range: 1 Hz to 300 Hz

Clock Accuracy: Auto adjusted up to 0.1 ppm

Start Time Accuracy: ±20 µs

Start Time Repeatability Accuracy: ± 5 µs

Maximum Number of Vibrators: 32

Accelerometer* Sensitivity: 25 mV/g ±2%

Accelerometer Range: ±380 g

Integrated GPS Option

PHYSICAL

Height (without shock mounts): 330 mm (13.00 in)

Width (without shock mounts): 286 mm (11.26 in)

Length (without shock mounts): 140 mm (5.52 in)

Weight (without shock mounts): 9.5 kg (20.95 lb)

Operating Temperature: -40 °C to +60 °C

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CENTRAL RECORDING EQUIPMENT

INOVA SOURCE INTERFACE (ISI)

The ISI interfaces with INOVA cableless recording systems central electronics to provide digitization of analog auxiliary channels, registration of shot times and generation of timing signals.

FEATURES

- Audible alarms and lights to identify connectivity problems with GPS or host control system
- Ability to support two separate source encoders
  - 12 V power to encoders separately activated and isolated to avoid ground loops and noise pickup
  - Both multi-pin and BNC connectors for versatility
  - Rapid context change between encoders
  - Test output on BNC allows activity monitoring of user-selected internal signals
- Auxiliary channel interface
  - Buffers for eight single-ended analog signals up to 15 V peak
  - Inputs for six differential-input balanced signals up to 5 V peak-to-peak
  - Buffers for four digital channels, 2 V to 15 V logic high level
  - Two voltage references for self-calibration
  - Analog Crossbar to select any six analog or digital inputs for analog recording
  - Digital Crossbar to select digital inputs for time capture
  - Typical Selections: System time break, clock time break, true reference, wireline reference, radio reference, radio similarity
- RS485/RS232 timing ports for sending and/or receiving time reference information
- In master mode, the ISI internal clock is locked to GPS with better than +/- 500 ns precision
- The ISI supports slave mode operations

SPECIFICATIONS

Input Voltage:

10.8 - 13.2 V

Operating Temperature:

-40 °C to +65 °C

Storage Temperature:

-50 °C to +85 °C

PHYSICAL

Size:

152.4 mm x 355.6 mm x 419.1 mm
(6" x 14" x 16.5")

Weight:

13.8 kg (30.5 lb)

HAWK

Hawk® SN11 recording system

STAGING EQUIPMENT

TRANSCRIBER

The Hawk Transcriber is a complete data archive and QC computer. It includes a RAID array constructed of Solid State Drive (SSDs) for data storage and eSATA interface for writing data to delivery media. The Transcriber provides detailed reporting capabilities including trace recovery, inventory management and geophysical QC functions.

FEATURES

- Multi-processor PC with RAID storage running Microsoft Windows Server 2008 OS and SQL Server 2008 database server
- Data collection status monitoring
- Data sorting and display
- Data collection management
- FSU diagnostic hardware tests
- Import of CSC database for comparison between acquired CSC data and collected Transcriber data
- SEG-Y data output to external USB or eSATA hard drives
- Available with SSD RAID up to 12 TB and external RAID up to 132 TB of storage
- Data output support for seismic data QC with G3i
  AVP compatibility
    Phase and power spectrums
    Time series trace displays
- Graphical and tabular reports
    Trace attribute QC
    Trace yield
    Equipment and data management

SPECIFICATIONS

Input voltage:
    110-240 VAC, 50/60 Hz
Operating temperature:
    +5 ˚C to +35 ˚C
Storage temperature:
    -40 ˚C to +75 ˚C
Humidity:
    20% - 80% non-condensing
Standard Monitors (4 with system):
    26" flat screen, 1920 x 1200 resolution

PHYSICAL

Size:
    445 mm x 193 mm x 366 mm
    (17.5" x 7.6" x 14.4")
Weight:
    6.9 kg (15.2 lb)
Total Central Computer Rack Dimensions:
    736.6 mm x 533.4 mm x 508 mm
    (29" x 21" x 20")
Total Central Computer Rack Weight:
    68 kg (150 lb)

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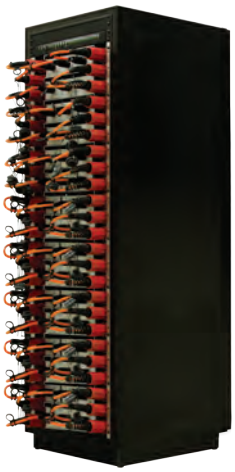
STAGING EQUIPMENT

DATA DOWNLOAD RACK AND BATTERY CHARGE RACK

FEATURES

- Integrated data network and battery chargers
- Rack for data download from 24 FSUs per module
- Rack for charging 48 standard capacity or 32 large capacity INOVA Lithium Ion Power Packs per module.
- Cascadable to scale up capacity
- Simple connectivity to Transcriber
- Visual charge status indicators when used for battery charging
- Can be installed in customer-supplied trailer or temporary base camp

Data Download Rack



Battery Charge Rack

DATA DOWNLOAD RACK (110/120 V, 200/240 V)

SPECIFICATIONS

Input voltage:
120 VAC, 16 A
240 VAC, 12.1 A
Operating temperature:
0 ˚C to +40 ˚C
Storage temperature:
-15 ˚C to +50 ˚C
Humidity:
10% - 90% non-condensing

PHYSICAL

Cabinet Size:
1672.0 mm (H) x 561.3 mm (W) x 683.3 mm (D)
(63.7”(H) x 22.1” (W) x 26.9” (D))
Total Weight (110/120 V):
150.6 kg (332.0 lb)
Total Weight (200/240 V):
134.3 kg (296 lb)

BATTERY CHARGE RACK (110/120 V, 200/240 V)

SPECIFICATIONS

Input voltage:
120 VAC, 17.5 A for each module
240 VAC, 8.75 A for each module
Operating temperature:
0 ˚C to +40 ˚C
Storage temperature:
-30 ˚C to +85 ˚C
Humidity:
0% - 90% non-condensing

PHYSICAL

Cabinet Size:
2062.5 mm (H) x 561.3 mm (W) x 683.3 mm (D)
(81.2” (H) x ” 22.1”(W) x 26.9” (D))
Total Weight (110/120 V):
126.6 kg (279.0 lb)
Total Weight (200/240 V):
126.6 kg (279.0 lb)

HAWK

STAGING EQUIPMENT

DATA DOWNLOAD MODULE

SPECIFICATIONS (110/120 V, 200/240 V)

Input voltage:
- 120 VAC, 16 A
- 240 VAC, 12.1 A

Operating temperature:
- 0 ˚C to +40 ˚C

Storage temperature:
- -15 ˚C to +50 ˚C

Humidity:
- 10% - 90% non-condensing

PHYSICAL (110/120 V)

Data Module

Total Size:
- 1333.5 mm (H) x 482.6 mm (W) x 444.5 mm (D)
- (52.5"(H) x 19.0" (W) x 17.5" (D))

Total Weight:
- 80.3 kg (177.0 lb)

UPS Battery

Size:
- 88.9 mm (H) x 482.6 mm (W) x 342.9 mm (D)
- (3.5"(H) x 19.0" (W) x 13.5" (D))

Weight:
- 28.6 kg (63.0 lb)

UPS

Size:
- 88.9 mm (H) x 482.6 mm (W) x 444.5 mm (D)
- (3.5"(H) x 19.0" (W) x 17.5" (D))

Weight:
- 21.8 kg (48.0 lb)

Ethernet Switch

Size:
- 45.7 mm (H) x 482.6 mm (W) x 330.2 mm (D)
- (1.8"(H) x 19.0" (W) x 13.0" (D))

Weight:
- 5.0 kg (11.0 lb)

Data Shelves

Size:
- 1112.5 mm (H) x 482.6 mm (W) x 203.2 mm (D)
- (43.8"(H) x 19.0" (W) x 8.0" (D))

Weight:
- 25.0 kg (55.0 lb)

PHYSICAL (200/240 V)

Data Module

Total Size:
- 1290.3 mm (H) x 482.6 mm (W) x 502.9 mm (D)
- (50.8"(H) x 19.0" (W) x 19.8" (D))

Total Weight:
- 64.0 kg (141.0 lb)

UPS

Size:
- 133.4 mm (H) x 482.6 mm (W) x 502.9 mm (D)
- (5.25"(H) x 19.0" (W) x 19.8" (D))

Weight:
- 34.0 kg (75.0 lb)

Ethernet Switch

Size:
- 45.7 mm (H) x 482.6 mm (W) x 330.2 mm (D)
- (1.8"(H) x 19.0" (W) x 13.0" (D))

Weight:
- 5.0 kg (11.0 lb)

Data Shelves

Size:
- 1112.5 mm (H) x 482.6 mm (W) x 203.2 mm (D)
- (43.8"(H) x 19.0" (W) x 8.0" (D))

Weight:
- 25.0 kg (55.0 lb)

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STAGING EQUIPMENT

BATTERY CHARGE MODULE

SPECIFICATIONS (110/120 V, 200/240 V)

Input voltage:
- 120 VAC, 17.5 A
- 240 VAC, 8.75 A

Operating temperature:
- 0 ˚C to +40 ˚C

Storage temperature:
- -30 ˚C to +85 ˚C

Humidity:
- 0% - 90% non-condensing

PHYSICAL (110/120 V)

Battery Charge Module

Total Size:
- 800.1 mm (H) x 482.6 mm (W) x 355.6 mm (D)
- (31.5″(H) x 19.0″ (W) x 14.0″ (D))

Total Weight:
- 23.6 kg (52.0 lb)

Battery Charger

Size:
- 45.7 mm (H) x 482.6 mm (W) x 228.6 mm (D)
- (1.8″(H) x 19.0″ (W) x 9.0″ (D))

Weight:
- 2.3 kg (5.0 lb)

Battery Charge Shelves

Size:
- 756.9 mm (H) x 482.6 mm (W) x 355.6 mm (D)
- (29.8″(H) x 19.0″ (W) x 14.0″ (D))

Weight:
- 21.3 kg (47.0 lb)

PHYSICAL (200/240 V)

Battery Charge Module

Total Size:
- 800.1 mm (H) x 482.6 mm (W) x 355.6 mm (D)
- (31.5″(H) x 19.0″ (W) x 10.0″ (D))

Total Weight:
- 23.6 kg (52.0 lb)

Battery Charger

Size:
- 45.7 mm (H) x 482.6 mm (W) x 228.6 mm (D)
- (1.8″(H) x 19.0″ (W) x 9.0″ (D))

Weight:
- 2.3 kg (5.0 lb)

Battery Charge Shelves

Size:
- 756.9 mm (H) x 482.6 mm (W) x 254.0 mm (D)
- (29.8″(H) x 19.0″ (W) x 10.0″ (D))

Weight:
- 21.3 kg (47.0 lb)

HAWK

Hawk® SN11 recording system

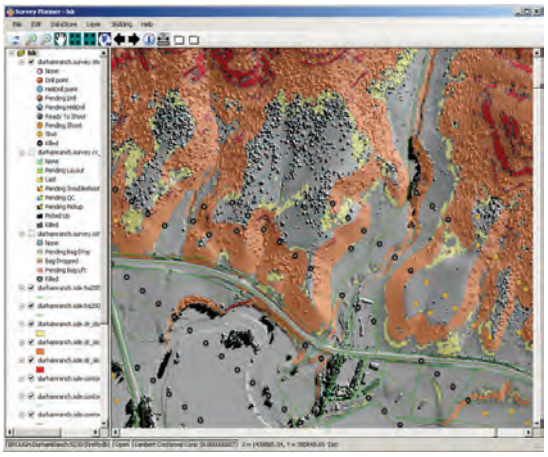
CONNEX OPERATIONAL MANAGEMENT SYSTEM

CONNEX HUB

Connex Hub is an operational planning system that integrates spatial data and survey design to streamline in-field work flows and reduce HSE risk. Connex Hub integrates with Connex FieldTool and Connex Vib for personnel and vibes respectively to provide navigation, safe routing, reporting and QC throughout the survey.

FEATURES

- Supported on multi-processor desktop PC or laptop
- Data transfer between Connex Hub and CSC
  - Drill log, LiDAR height data
  - FSU deployment log
  - Shot log
  - Undeployment log
  - Source/Receiver points
- Survey and Crew Planner
  - Load survey information, supported formats SPS, SEG-P1, GEO-TIFF, shape files
  - Automatic GIS rule-based offsetting and skidding of theoretical points
  - Geodesy configuration
  - Define exclusion and hazard areas
  - Dynamic patch template visualization
  - Journey Management and Task Planning for:
    - Drill Crews
    - Layout, Redeployment crews
    - Troubleshooting crews
    - Shooting crews
    - Pickup crews
    - Vibroseis crews
- QC System
  - Spatial and tabular QC displays and analysis
  - Vibe Event Log import and QC
- Analysis of all field operations HSE Reporting
  - Review of crew locations
  - Automatic detection of exclusion or hazard violations



- Field Synchronization with Field Tools, Harvest Tools & Connex Vib
  - Download of all survey and configuration data to field devices
  - Upload of completed work, logged data and navigation trails back to Hub
- Integrated Reporting
  - Daily production reports
  - Production summary reports
  - Crew metrics analysis
  - Custom reports

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature:

+5 °C to +35 °C

Storage Temperature:

-40 °C to +75 °C

Humidity:

20 to 80% non-condensing

Power:

110—240 VAC, 50/60 Hz

PHYSICAL

PC Size:

736.6 mm x 533.4 mm x 508 mm
(29" x 21" x 20")

PC Weight:

68 kg (150 lb)

HAWK

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CONNEX OPERATIONAL MANAGEMENT SYSTEM

CONNEX FIELDTOOL

The Connex FieldTool is used for the following functions:

- FSU deployment, QC, and troubleshooting – FieldTool communicates with the FSU by Bluetooth to provide config and linestation data, collect QC data, and run tests
- Pickup – FieldTool can be used to log the pickup of FSUs to allow asset tracking
- Dynamite drilling – FieldTool logs data, including charge, depth, and caps along with logging drill location
- Dynamite shooting – FieldTool communicates with Shot Pro II source controllers via Bluetooth to provide ready messaging, log post-fire signals (PFS), and log shot status, such as misfires.
- Navigation – FieldTool provides navigation to survey points, warns of offsets from staked location, and alerts crews of entry into hazard and exclusion areas.

FEATURES

- Trimble® Nomad Handheld Computer
- High-performance all-in-one integrated GPS device
- Ultra-rugged form factor
- Integrated GPS (SiRFStar III, WAAS Capable)
- Internal rechargeable battery
- Touch screen 3.5 inch (8.9 cm) VGA display
- Survey and journey management
- Data synchronization with Connex Hub
- Interfaces with SmartPack for up to RTK grade stakeless surveying and navigation.
- Bluetooth communication supports:
  - Shot Pro II
  - FSU
  - Digital Compass
- Easy to use, multi-lingual software for:
  - Dynamite source drilling
  - FSU deployment
  - Troubleshooting
  - Dynamite shooting
  - QC data collection

ENVIRONMENTAL SPECIFICATIONS

Operating temperature:

–30 °C to +60 °C (–22 °F to +140 °F)

Storage temperature:

–40 °C to +70 °C (–40 °F to +158 °F)

Humidity:

90% temp cycle 32 °F/158 °F

Water:

Immersion in 1 meter of water for 30 minutes

Drop:

26 drops at room temperature from 4 ft. (1.22 m)

Altitude:

15,000 ft at +23 °C (+73 °F)

PHYSICAL

Size:

17.6 cm x 10.0 cm x 5.0 cm (6.92" x 3.92" x 1.96")

Weight:

558 g (1.23 lb) including rechargeable battery

Battery:

Field swappable 5200 mAh Lithium Ion rechargeable battery

HAWK

Hawk® SN11 recording system

CONNEX OPERATIONAL MANAGEMENT SYSTEM

CONNEX FIELD HARVEST TOOL

The Field Harvest Tool can quickly acquire QC information from deployed Field Station Units on foot, by helicopter or from a vehicle. The Field Harvest Tool requires no user-interaction allowing station QC and status information to be collected efficiently while moving through the spread. The Harvest Tool can also be used to collect seismic data from Hawk FSUs in the field.

FEATURES

- Trimble® Yuma tablet computer
- Ultra-rugged and waterproof design
- Integrated Wi-Fi, Bluetooth and GPS
- Internal rechargeable battery
- 7 inch (17.8 cm) touch screen display
- Easy to use software for QC and seismic data collection
- Data transfer rates of up to 10 Mbps

PHYSICAL

Size:

14.0 cm x 23.0 cm x 5.0 cm (5.5" x 9.0" x 2.0")

Weight:

1.4 kg (3.1 lb) including extended batteries

Battery:

Dual hot swappable Lithium Ion battery, 2600 mAh each

ENVIRONMENTAL SPECIFICATIONS

Operating temperature:

–30 °C to +60 °C (–22 °F to +140 °F)

Storage temperature:

–40 °C to +70 °C (–40 °F to +158 °F)

Humidity:

90% temp cycle 32 °F/158 °F

Water:

Immersion in 1 meter of water for 30 minutes

Drop:

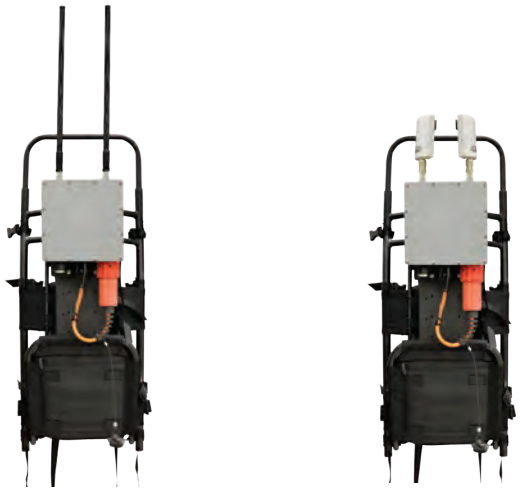
26 drops at room temperature from 4 ft. (1.22 m)

Altitude:

15,000 ft at +23 °C (+73 °F)

FEATURES

- Wireless access point that is easily removable (without tools) from the backpack frame to a vehicle or helicopter
- Provides extended, automatic connectivity to Hawk FSUs and the Harvest Tool
- Designed to use the Hawk FSU battery



PHYSICAL

Size:

48.3 cm x 35.6 cm x 15.2 cm (19.0" x 14.0" x 6.0")

Weight:

3.6 kg (8.0 lb) without backpack

HAWK

Corporate Headquarters
12200 Parc Crest Drive
Stafford, TX 77477
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www.inovageo.com

CONNEX OPERATIONAL MANAGEMENT SYSTEM (OPTIONAL)

SMARTPACK (OPTIONAL)

The SmartPack interfaces with the Connex FieldTool over Bluetooth to provide a range of GPS positioning accuracies up to RTK grade, allowing industry standard survey accuracy in stakeless survey operations.

FEATURES

- Interfaces with the Connex FieldTool over Bluetooth connection
- Up to RTK grade survey accuracy
  - 20 cm HRMS
- Integrated, stakeless receiver surveying

SPECIFICATIONS

Input Voltage: +9 to +28 VDC

Power Consumption: 1.8 W (typical)

Operating temperature: -40 °C to +75 °C

Storage temperature : -55 °C to +90 °C

HAWK

CONNEX OPERATIONAL MANAGEMENT SYSTEM (OPTIONAL)

CONNEX VIB (VIBROSEIS VEHICLE NAVIGATION)

User-friendly standalone system that provides navigation and positioning of vibroseis vehicles with capabilities of integrated stakeless operations. The Connex Vib navigation system can record GPS coordinates, sweep start times, post sweep (PSS) attributes such as force, phase, distortion, stiffness, viscosity, and vibrator source signature (VSS) data. The vibrator navigation's intra-fleet communications architecture transmits immediate Fleet Ready messages for improved operational efficiencies.

FEATURES

- Integrated vibroseis navigation system used to assist in the delivery of high-productivity vibroseis operations
- Enables fully stakeless operations, saving significant survey costs
- User friendly touch screen interface that graphically displays real-time vibrator positioning data fully integrated with hazards, topographical data and sweep status information
- Determination of fleet CoG position before sweep begins to assist fleet positioning at vibration points
- Integrated VSS signature recording
- Audible and visual alarms for unauthorized hazard or exclusion entry
- Multi-language support
- Increased HSE awareness due to clear visualization of hazards and exclusions
- Deskilling of slave operations via automatic configuration from master
- Tight integration with Vib Pro, Connex Hub, and INOVA recording systems
- Configuration is done on the Hub and synchronized to the Vibes. All recorded data is synched back to the Hub for QC and reporting, including Timebreaks, PSSs, navigation trails, VSS data and the Vib Event Log

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CONNEX OPERATIONAL MANAGEMENT SYSTEM (OPTIONAL)

CONNEX VIB (VIBROSEIS VEHICLE NAVIGATION)

IN-CAB DISPLAY SPECIFICATIONS

Display:

- Size: 12.1″
- Resolution: 1280 x 800 pixels
- Brightness: 500 (cd/m2)
- Contrast Ratio: 600:1

Environment:

- Operating Temperature: -20 °C ~ 55 °C
- Storage Temperature: -30 °C ~ 70 °C
- Humidity: 10 ~ 95% non-condensing
- Shock: EN50155
- Vibration: EN50155
- EMC: CE, FCC ClassB, Compliance with EN50155
- Safety: Compliance with EN50155, MIL-STD 810F

Dimensions:

- 310 mm x 215 mm x 45 mm
- (12.24″ x 8.46″ x 1.77″)

IN-CAB COMPUTER SPECIFICATIONS

Power Requirement:

- DC-in 9~30 V

Power Consumption:

- Intel® Atom™ D510, 1.18 A@12 V

Operating Temperature:

- Ambient with Airflow
- -4 °F ~ 122 °F (-20 °C ~ 50 °C) - CFD
- No Airflow
- -4 °F ~ 113 °F (-20 °C ~ 45 °C) - CFD

Storage Temperature:

- -4 °F ~ 140 °F (-20 °C ~ 60 °C)

Anti-Vibration:

- 5 g rms/ 5 ~ 500 Hz/ operation – CFD,

Anti-Shock:

- 50 G peak acceleration (11 ms duration) – CFD

MTBF:

- 50,000

Certification:

- EMC CE /FCC Class A

Dimensions:

- 197 mm x 57 mm x 112 mm
- (7.76″ (W) x 2.44″ (H) x 4.41″ (D))

Weight:

- 1.96 kg
- (4.31 lb)

Operating System:

- Windows® 7

HAWK