PICO ENVIROTEC INC.

IMPAC

INTEGRATED MULTI-PARAMETER AIRBORNE CONSOLE

Typical rack installation

A real-time data acquisition and navigation system designed for airborne (fixed wing and helicopter) geophysical exploration, environmental science, and monitoring application. IMPAC is integrated in a single rack-mountable enclosure that meets aviation requirements.

The IMPAC follows Pico Envirotec's modular design structure producing highly flexible and easily reconfigurable instrument for Airborne surveys. Wide variety of proprietary "intelligent" instruments and third party sensors and instruments (Ex. magnetometer sensors, radiation detectors, airborne gravity-meter) can be quickly and easily interfaced.

The IMPAC system eliminates the need to interconnect wires, creating a user friendly and robust product. All data coming from integrated instruments and sensors is synchronized and recorded to solid state memory together with GPS time and location. Recorded data can be loaded using USB flash drive.

The IMPAC system can be assembled featuring following options:

- ANAV – Survey navigation with drape profile option; flight path is being recorded and can be synchronized with the separately acquired data;
- IMPAC – Survey navigation with drape profile option; Data acquisition for variety of sensors;
- IMPAC-M – Survey navigation with drape profile option; Data acquisition; support of up to 8 Cs magnetic sensors with Magnetic compensation option.

SPECIFICATION HIGHLIGHTS

i. ANAV Option

a. An advanced navigation system designed for airborne geophysical survey tasks. The ANAV can guide pilot to the preplanned survey grid, along survey lines, way-points, indicating preplanned drape profile. The ANAV can support high brightness LCD screen pilot guidance unit (PGU) and an additional operator navigation screen. The Operator navigation screen offers map-navigation features, switching and locking to the survey lines. The PGU screen displays cross-track and additional survey information for pilot. If there is not an on-board operator, the PGU screen will allow pilot easily start or end the survey, select between survey lines with a simple touch-screen option. The ANAV will guide the survey on a pre-set line order, starting from a closest line to the aircraft position. The survey can be prepared using Pico Envirotec's supporting software or widely used applications such as Geosoft, GoogleEarth, etc.

ii. IMPAC-M (PEI Comp option)

a. The IMPAC-M can support up to 8 cesium magnetometer sensors. Data sampling rate up to 1200Hz with a high sensitivity & resolution (0.2pT Sensor dependant). Aircraft mounted boom systems have available an optional compensation. The system features a real-time compensation and a recording of compensation data file that can be used for post-mission compensation or re-compensation. The system can also be set with Time Domain EM equipment, synchronizing magnetometer sensor reading with Electromagnetic field pulsation.

b. Magnetometer board specifications

a. INPUT: up to 8 sensors
b. Resolution: 0.2 pT
c. Sampling Rates: internal; 1200Hz
d. Outupt: 5 – 120 Hz
e. Bandwidth: 0.7 – 16.8 Hz
f. Analog Inputs: 8 differential simultaneous sampled, 16 bit resolution, 1.2 kHz sampling
g. Dynamic range: 15000 – 100000 nTl (limited only by sensor)
h. Synchronization: GPS-PPS @ 1 µs
i. Sequential sensor power on
j. Optional compensation: Fluxgate magnetometers or attitude reference