LUNITEK

ATLAS-F-plus

DIGITAL RECORDER FOR SEISMIC OR STRUCTURAL MONITORING

Atlas is a robust and reliable digital recorder.

ATLAS-F-plus is an evolution of the ATLAS-F digitizer that was designed to have more computational power for low latency, high demanding software. Compared to standard ATLAS it offers accessible/removable SD and SIM card slots, hot-swappable dual-slot battery and the connectors positioned on one side.

The ATLAS-F-plus is easily transportable in flights, the user can take out the batteries and transport them in the cabin. In addition, the dual battery slot is also useful when ATLAS-F-plus IS used for long-term monitoring as the batteries can be replaced one by one without turning off the instrument.

ATLAS-F-plus is available with 3 or 6 differential input channels for external sensors + an input for the digital sensor LTME-150.

KEY FEATURES

ADC RESOLUTION 32 bit

DYNAMIC RANGE > 145dB@100 sps

SAMPLING RATE 1, 10, 20, 25, 50, 100, 125, 200, 250, 400, 500, 1000, 2000, 5000 sps

SYNCHRONOUS SAMPLING

LAN, WIFI

4G/5G MODEM (OPTIONAL)

BUILT-IN GNSS RECEIVER

INTEGRATED UPS, 20 HRS SYSTEM AUTONOMY

MINISEED DATA FORMAT

COMPATIBILE WITH EARTHWORM, SEISCOMP, GEOPSY, SEISGRAM2K

CORTEX A53 1.5 GHZ QUAD CORE
RAM 2GB DDR4

APPLICATIONS

Seismological networks
Short-term monitoring
Post-seismic damage analysis

INPUTS

INPUT CHANNELS 3 or 6 analog, 3 digital channels (RS422)
SAMPLING Simultaneous
INPUT IMPEDANCE 50KΩ or opt 2MΩ
INPUT VOLTAGE 40, 20, 10, 5, 2.5, 1.25, 0.625 Vp p(x1, x2, x4, x8, x16, x32, x64)
SENSOR COMPATIBILITY Accelerometers (FBA, MEMS), Geophones, Seismometers and Microbarometers

A/D CONVERSION

ADC Sigma-delta 32 bit synchronous sampling
DYNAMIC RANGE > 145dB @ 100 sps
SAMPLE RATES 25, 50, 100, 125, 200, 250, 400, 500, 1000, 2000, 5000
ADVANCED FEATURES Dual Sampling
ANTI-ALIASING FILTER FIR linear or minimum phase
ADDITIONAL DIGITAL FILTERS Low-pass and High-pass filter

TRIGGERS

TRIGGERS STA/LTA and threshold independent for each channel
AND/OR configuration on all channels
Trigger broadcasting towards recorders in the network

STORAGE

FORMAT MiniSEED
INTERNAL MEMORY 32GB standard, optionally up to 512GB
RING BUFFER DATA RECORDING (16 or 32 days, depending on mem. size) plus strong motion events
ADV. FEAT. Periodic generation of ambient noise and post-seismic analysis

SYNCHRONIZATION

TIMING SOURCE GNSS or NTP - Absolute Time UTC through high sensitive integrated GNSS receiver
ACCURACY in GNSS signal loss condition: ± 1 ppm (32 s/year)
Accuracy with GNSS signal < 1 µS
GPS RECEIVER 72 channels simultaneous reception of GPS, GLONASS, BeiDou and QZSS

CPU

CPU Cortex A53 Quad core 1.5Ghz + Realtime co-processor Cortex M7 650Mhz
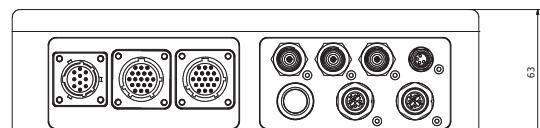**RAM** 2GB DDR4

UI

LEDs Heartbeat, 4G, WiFI, GNSS, Ethernet, Power
BUTTONS Power on/off and WiFi enable/disable on the same button

COMMUNICATION

FILE TRANSFER Via Ethernet 10/100/1000, WiFi or integrated 4G modem (optional)
WIFI MODE SOFT AP function
METADATA RESP file available on IRIS
DATA DOWNLOAD Through SCP protocol based program or via web interface
VPN Compatible with OpenVPN and IPSec

DATA STREAMING

FORMAT Seedlink protocol management for real-time interface with most common seismic programs such as SeisComP and Earthworm
STREAM Seismic and State-of-Health
ALARMS Management towards remote monitoring server

CONFIGURATION

INTERFACE Web Server
CONTROL Connection and management on remote servers
UPDATES Remote software update (local network or via internet)
ADVANCED FEATURES Multiple units can be connected to the network (Ethernet, WiFi or 4G) acting as a single multi-channel instrument

POWER SUPPLY

POWER SUPPLY 9 ÷ 36 Vdc - AC/DC adapter included
POWER CONSUMPTION 1.5 W (with disabled wifi and 4G), max 15 W while charging
UPS Back-up LiPO battery, autonomy 15 hours
ALARMS Remote alarms management in case of blackout

OP. CONDITIONS

HUMIDITY 0 to 100%
OPERATING TEMPERATURE RANGE Without battery - 40 ÷ +85°C *
*LiPo batteries can be charged in the range 0 ÷ +45°C while discharge is allowed in the range of -20 ÷ +70°C.
If the temperature is out of range, the LiPo battery will be inhibited by the electronics

PHYSICAL

CASE Anodized aluminum case made of aluminum Al6061 with surface treatment against corrosion and atmospheric events
PROTECTION GRADE IP67
DIMENSIONS 234 x 137 x 62.5 mm
DIMENSIONS WITH MOUNTING FLANGES 274 x 137 x 62.5 mm
WEIGHT ≈2 Kg
CONNECTORS MIL-STD / M12 / M18 / TNC / FME

atlas-F-PLUS
Seismic Digitizer