



For applications where combined and space saving-solution are required.

Very low seismic noise levels are achieved thanks to the sensor being shielded inside the enclosure and to the short wiring. Triton is available with geophones or with short/broad band sensors. Triton can be equipped with extra inputs for 3 or 6 24-bit channels. In this configuration, in addition to the internal sensor, the instrument can be connected externally to two other high dynamic sensors. The instrument is equipped with high-resolution delta-sigma 24 bit ADCs, each channel is synchronized and the sample rate is adjustable up to 1000 sps per channel. The internal memory (up to 1TByte) has two independent recording zones: the ring-buffer dedicated to continuous sampling, and the triggering used for event sampling.

TRITON SEISMOGRAPH

INTEGRATED DATA ACQUISITION
PLUS SENSOR

KEY FEATURES

INTEGRATED SENSOR

ADC RESOLUTION 24 bit

DYNAMIC RANGE > 136dB@100 sps

SYNCHRONOUS SAMPLING

LAN, WIFI

INTEGRATED 4G MODEM (OPTIONAL)

BUILT-IN GNSS RECEIVER

INTEGRATED UPS

MINISEED DATA FORMAT





Seismological networks
Nakamura surveys
Regional or teleseismic seismicity

APPLICATIONS

GEOPHONES 4.5Hz-100Hz or 2Hz – 100Hz
SHORT BAND SENSOR 1s - 100Hz or 5s – 50Hz
Dynamic range > 140dB

SENSORS

BROAD BAND SENSOR 30s – 100Hz / 60s – 100Hz / 120s – 100Hz
Dynamic range > 150dB

SAMPLING Simultaneous

ADC Sigma-delta 24 bit synchronous sampling

DYNAMIC RANGE > 136dB @ 100 sps

SAMPLE RATES 25, 50, 100, 250, 500, 1000* sps * (3 ch active)

ADVANCED FEATURES Dual Sampling

ANTI-ALIASING FILTER FIR linear or minimum phase

ADDITIONAL DIGITAL FILTERS Low-pass and High-pass filter

A/D CONVERSION

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

TRIGGERS

FORMAT MiniSEED

INTERNAL MEMORY 32GB standard, optionally up to 1TB

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

STORAGE

TIMING SOURCE Absolute Time UTC through high sensitive integrated
GNSS receiver or NTP

ACCURACY in GNSS signal loss condition: ± 1 ppm (32 s/year)
Accuracy with GNSS signal < 1 μ S

SYNCHRONIZATION

LEDs Heartbeat, 4G, WiFi, GNSS, Ethernet, Power

BUTTONS Power on/off and WiFi enable/disable on the same button

UI

FILE TRANSFER Via Ethernet 10/100, WiFi (optional) 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

COMMUNICATION

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

DATA STREAMING

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

CONFIGURATION

POWER SUPPLY 9 ÷ 28 Vdc - AC/DC adapter included

POWER CONSUMPTION < 2 W (< 800 mW available on request)

UPS Back-up LiPO battery, autonomy > 33 hours

ALARMS Remote alarms management in case of blackout

ACCESSORIES External battery pack and solar panel options

POWER SUPPLY

STORAGE TEMPERATURE RANGE - 40 ÷ +85°C

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

OP. CONDITIONS

CASE Anodized aluminum case (AISI 316 stainless steel option)

PROTECTION GRADE IP67, IP68 optional

DIMENSIONS 18 x 18 x 10 cm

WEIGHT \approx 3 Kg minimum, depending on the sensor

INSTALLATION Mounting plate or spikes available on request

PHYSICAL

