

Time-Domain EM at GDD Instrumentation

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GDD NordicEM24



NordicEM24 EM Receiver



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FEATURES:

- *Low noise 24-bit ADCs Rx with **full-waveform** recording (Raw & Stacked files);*
- *Friendly user for field operators;*
- *Display scope, stacked data, profiles and decays;*
- *Post-processing software included for data QC and corrections;*
- *Components and wiring built to work from **+50°C down to -40°C**;*
- *Battery life optimized in cold temperature (Lithium-Ion batteries);*

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FEATURES:

- *Detachable touch screen with onscreen keyboard;*
- ***Up to 8 input channels**, each with ADC and amplifier;*
- *Tested with different sensors: **dB/dt** (coil) and **B-field** (LT and HT squid, Fluxgate);*
- *Rx – Tx Controller **Crystal or GPS synchronization** (with built-in antenna);*
- *Download data via USB;*
- *Standard data file formats : AMIRA format (ASCII) **compatible with Maxwell®**.*

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SPECIFICATIONS: EM Receiver

Dimensions: 42 x 33 x 18 cm
60 x 41x 23.5 cm with shipping box

Weight: 10 kg
20.4 kg with shipping box

Data storage: 64GB SSD

Battery: Four Lithium-Ion batteries

Operating system: Windows Embedded Standard 7

Time windows: Various Standard windowing and user defined

Display: 10.4" SVGA Resolution (800x600) with heater



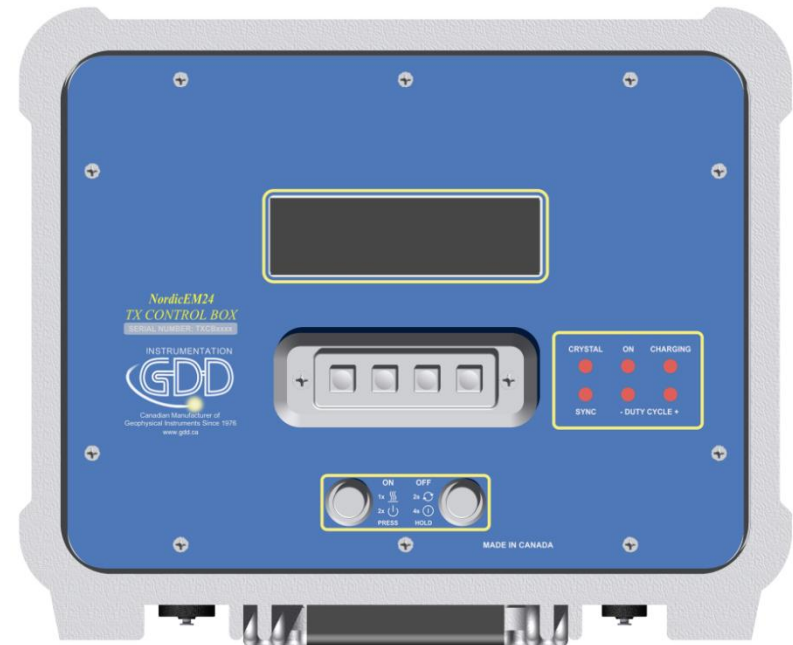
Input channels: up to 8

V Max input level: $\pm 3.25V$

Bandwidth: Up to 60kHz

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NordicEM24 Transmitter Controller



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SPECIFICATIONS: Tx Controller

Dimensions: 35 x 29 x 15 cm

54 x 38 x 21 cm with shipping box

Weight: 4.4 kg

13.4 kg with shipping box

Synchronisation: GPS and crystal

Duty cycle: 50%

Transmitter compatibility: Geonics, Zonge, Pheonix and others

Base frequency: 0.03125 to 30 Hz (*higher frequencies on the way*)

Battery: Two Lithium-Ion batteries



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NordicEM24 in action in the field...

... with 3D Coil sensor



NordicEM24 Tx Controller



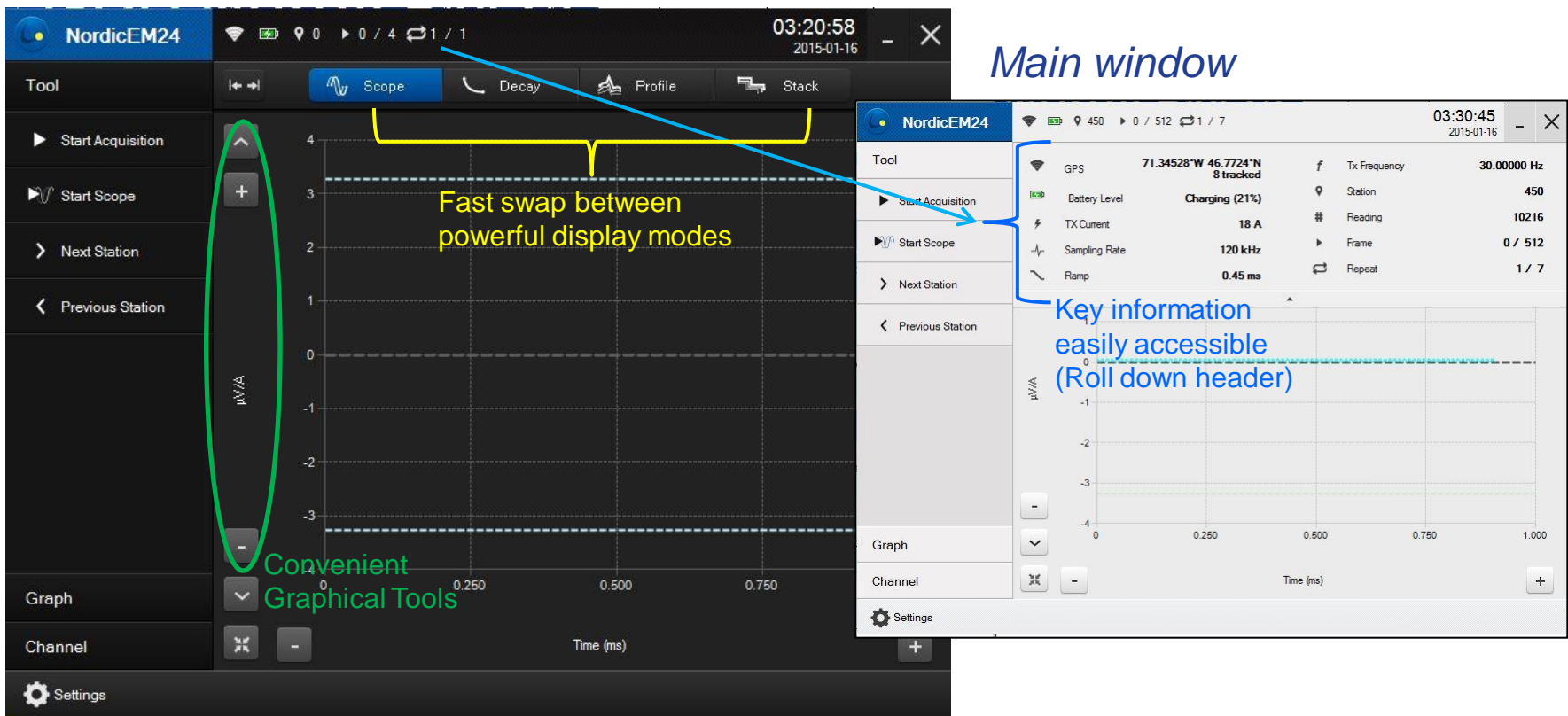
NordicEM24 Rx with 1D coil



NordicEM24 Rx with SQUID sensor

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The leading edge NordicEM24 receiver was designed to be user friendly:



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The leading edge NordicEM24 receiver was designed to be user friendly:



Settings windows

The image displays three overlapping screenshots of the NordicEM24 software interface. The leftmost screenshot shows the main tool screen with a 'Settings' icon circled in red in the bottom left corner. A red arrow points from this icon to a 'Settings' menu that is open, listing options like Survey, Timing, Channels, File, Preferences, Windows, Devices Status, Theme, and Self-Test. The middle screenshot shows the 'Survey' settings window with fields for Station Name (450.00), Tx Current (18.0000), Loop # (1), Line Name (1200N), Loop Side (500), Operator Name (John Smith), Station Increment (25.00), and Survey Type (Fixed Loop). The rightmost screenshot shows the 'Timing' settings window with fields for Base Frequency (30.0000), Sampling Rate (120000), Ramp (ms) (0.4500), Delay (ms) (0.0500), Stacks (512), Repeat (7), Stacking Algorithm (Mean), Transmitter Type (GDD), and Local Power Lines (60 Hz). A yellow text overlay on the rightmost screenshot reads 'EASY to fill Settings menus'. The interface includes a top status bar with signal strength, battery, and location icons, and a bottom navigation bar with 'Previous', 'Next', 'Cancel', and 'Done' buttons.

SIMPLE organization of the Settings menu

EASY to fill Settings menus

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The leading edge NordicEM24 receiver was designed to be user friendly:



Settings windows

Settings

Station Name: 450.00
Tx Current: 18.0000
Loop #: 1
Line Name: 1200N

Battery, GPS and Sync status

Battery	Temperature	Voltage	AVG Current	AVG Time to Empty	AVG Time to Full
Battery 1	30.45 °C	14.454 V	1.468 A	—	228 min
Battery 2	29.75 °C	14.447 V	1.451 A	—	247 min
Battery 3	30.75 °C	14.106 V	0.94 A	—	330 min
Battery 4	29.45 °C	14.097 V	0.938 A	—	331 min

User defined graphical options

Stack Graph Setup
Vertical axis scale: linear
Log Threshold: 0.1

Decay Graph Setup
Vertical axis scale: log
Horizontal axis scale: log
Log Threshold: 0.1

Profile Graph Setup
Vertical axis scale: linear
Log Threshold: 0.1

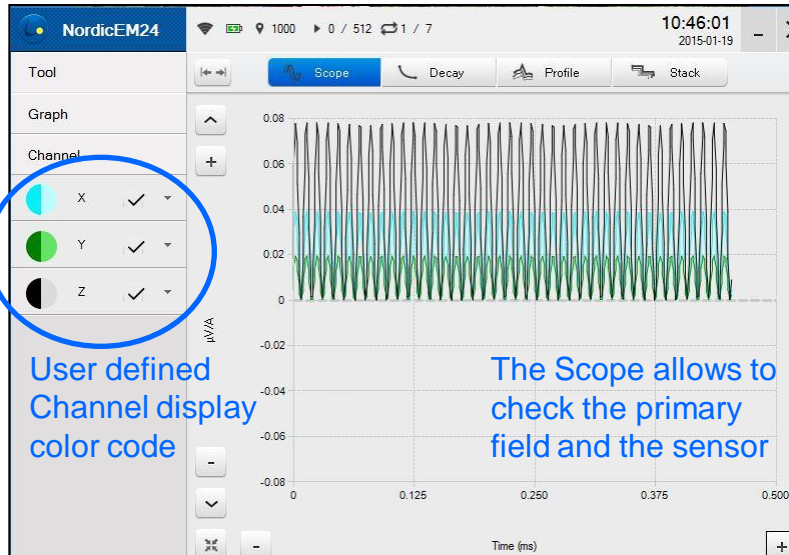
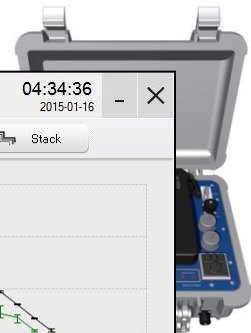
Acquisition Graph Setup
During Acquisition: Decay
After Acquisition: Decay
Vertical axis scale: linear
Horizontal axis scale: linear
Log Threshold: 0.1

Smart features including:
Beep on measurement completion
Field notepad.



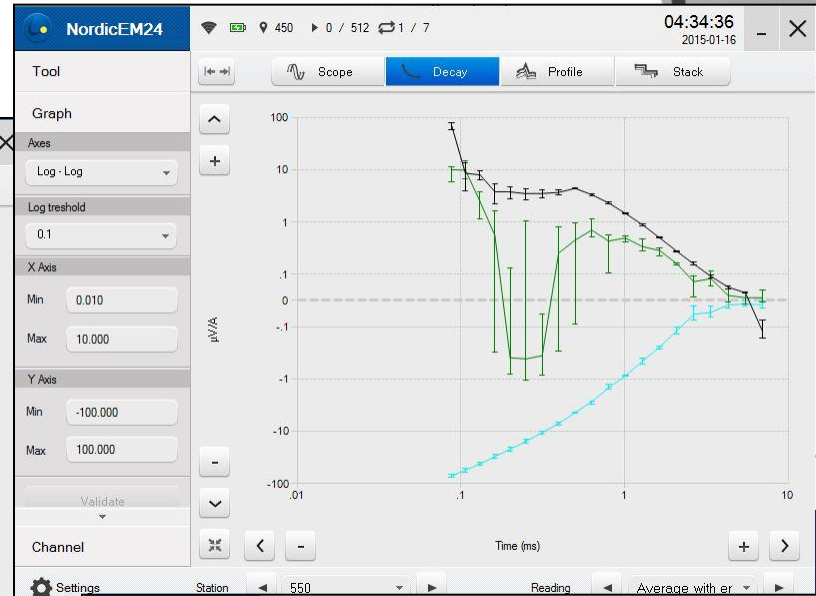
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Main window

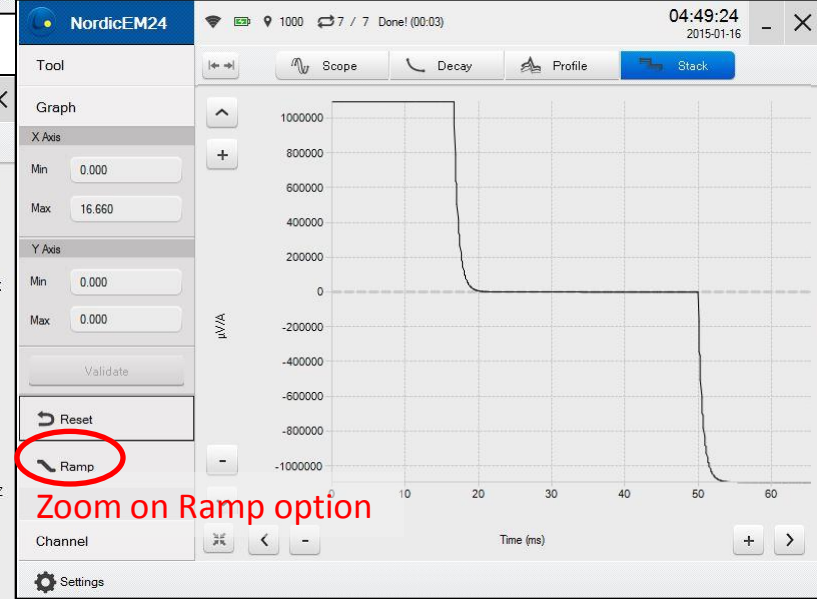
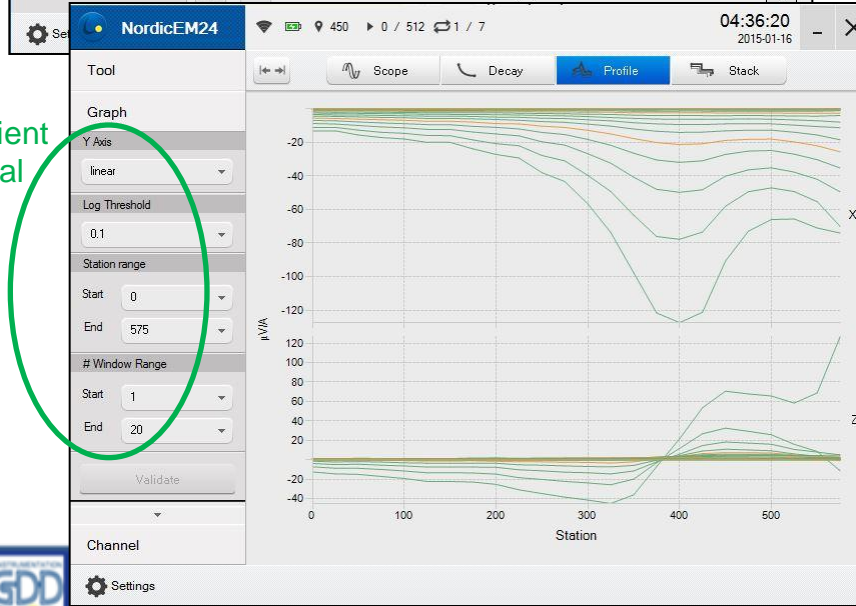


User defined Channel display color code

The Scope allows to check the primary field and the sensor



Convenient Graphical Tools



Zoom on Ramp option

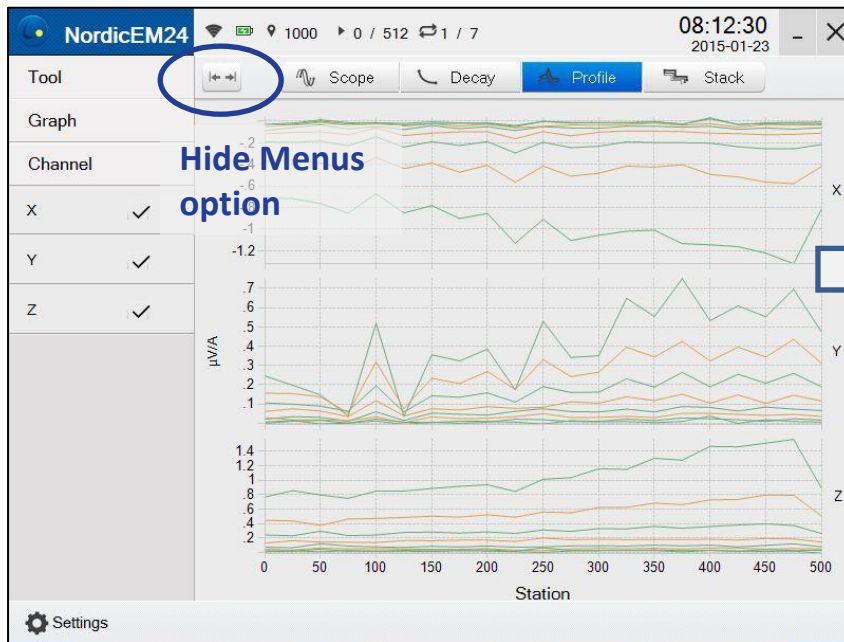


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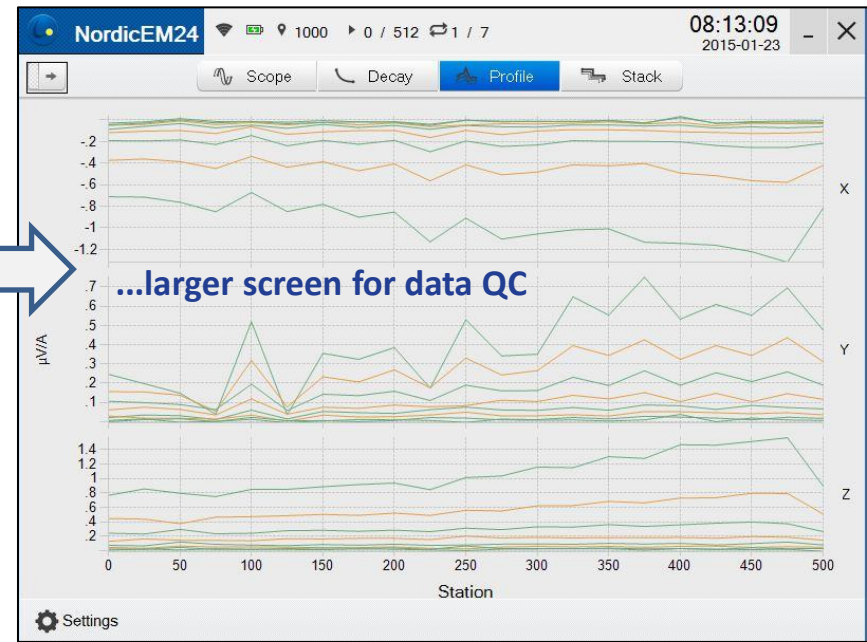


The leading edge NordicEM24 receiver was designed to be user friendly:

Visual tools to help validating your EM data



Hide Menu option



...larger screen for data QC

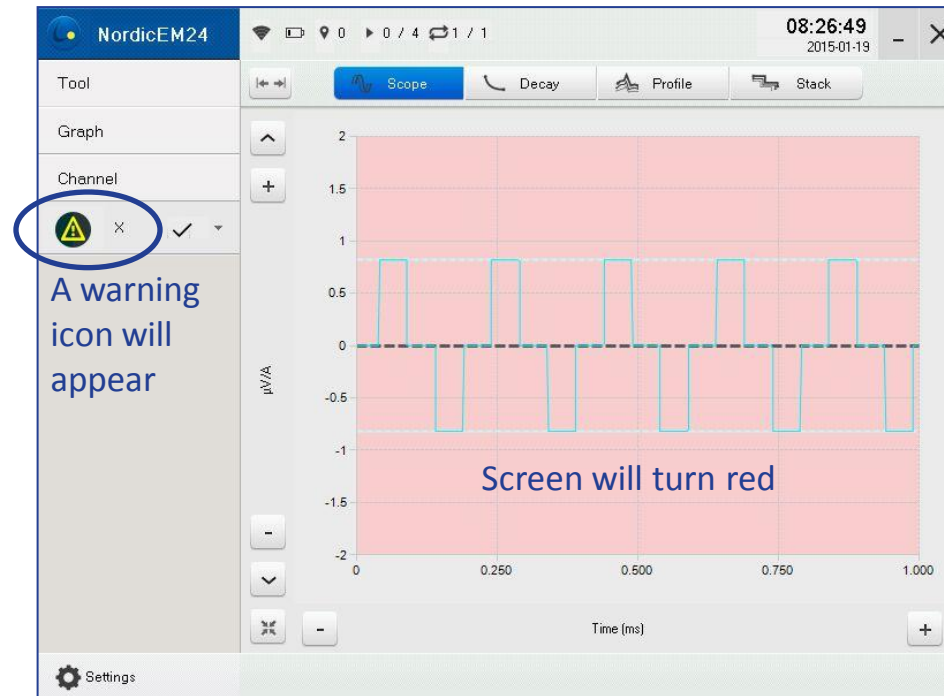
GDD NordicEM24

The leading edge NordicEM24 receiver was designed to be user friendly:



Visual tools to help validating your EM data

Example of signal saturation on the X component of a B-field survey

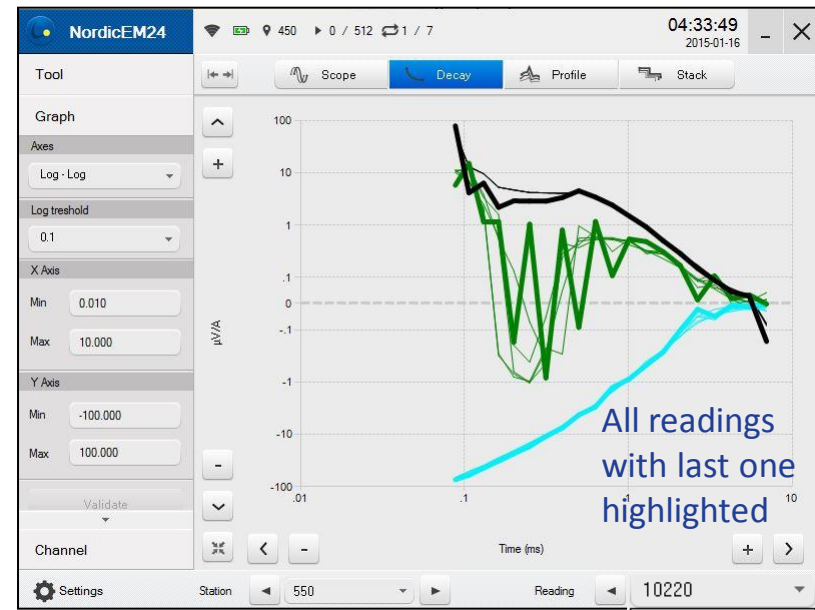
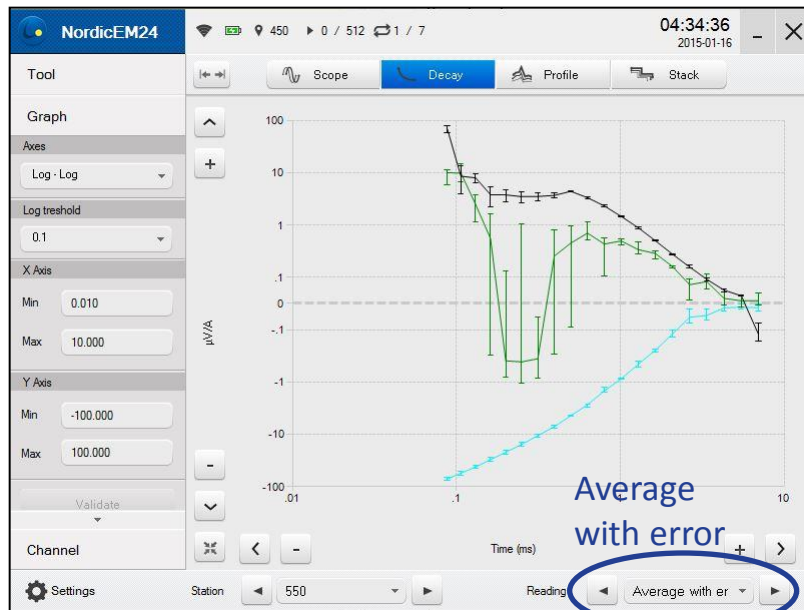


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The leading edge NordicEM24 receiver was designed to be user friendly:



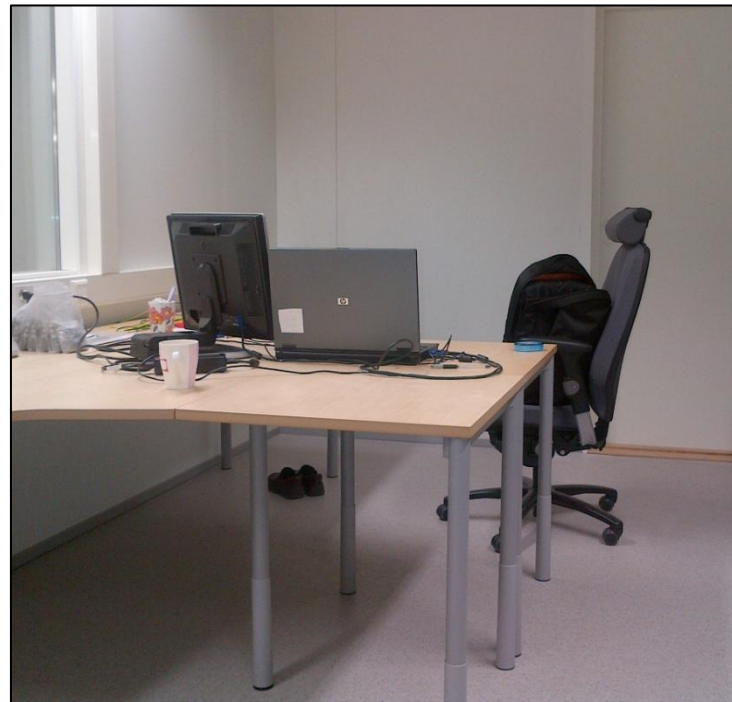
Visual tools to help validating your EM data



All
Average
Average with error
335
336
337
10217
10220

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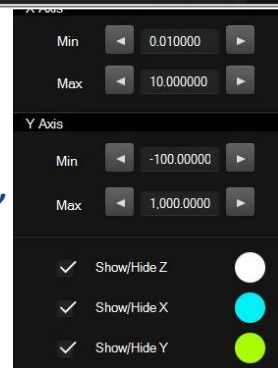
NordicEM24 data post-processing...





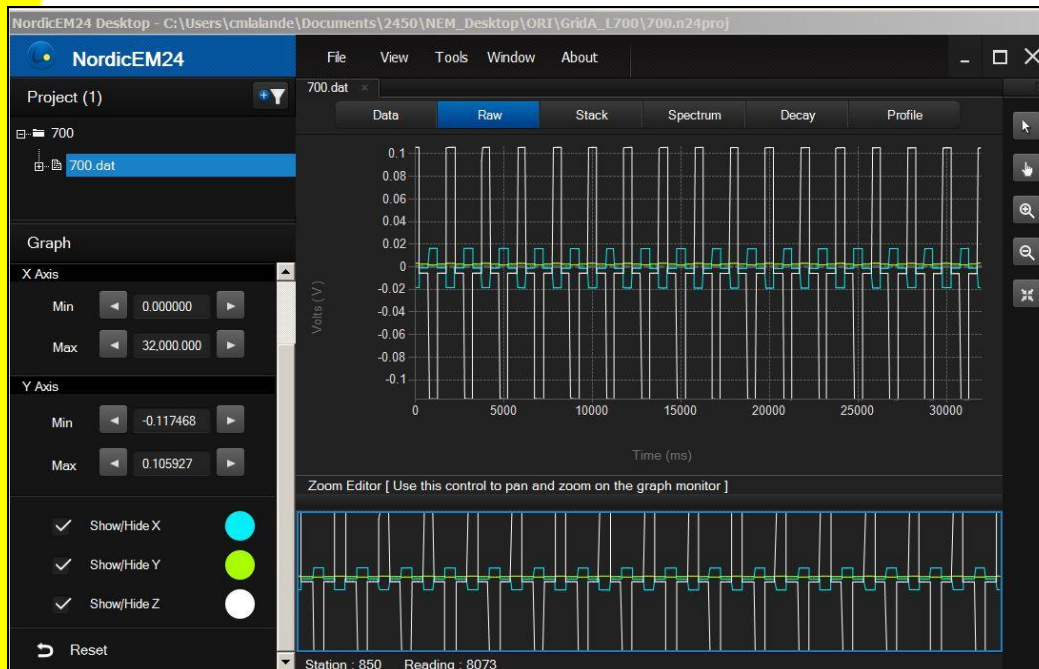
Powerful tool to visualise **Profiles**:
Zoom options, linear and log scales, channels and time gates selection.

Powerful tool to visualise **Decays**:
Zoom options, linear and log scales, channels selection, single or multiple readings display.

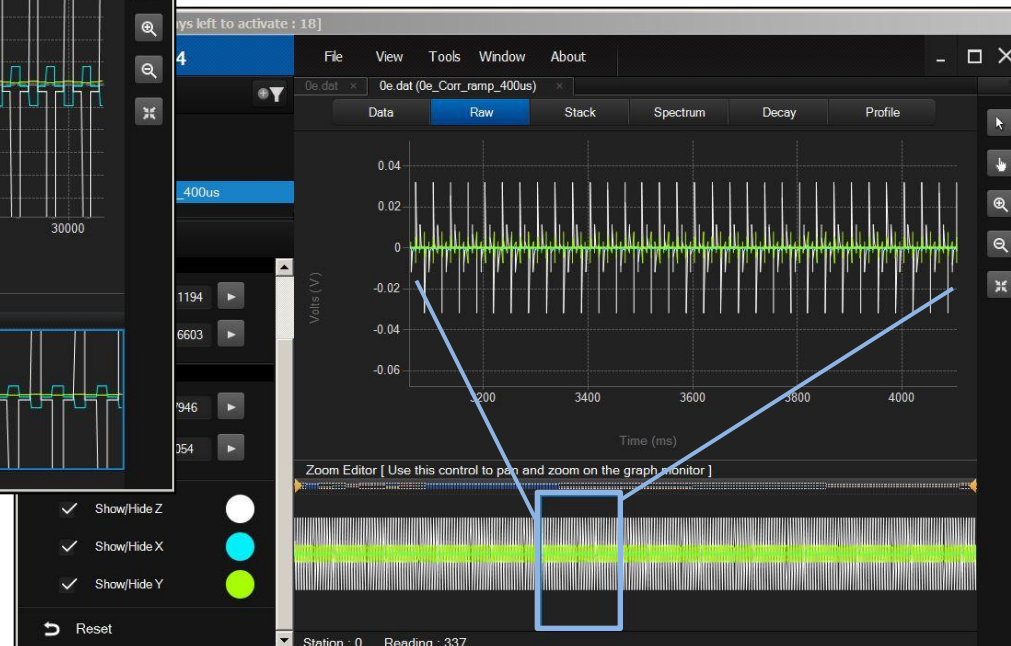


Powerful tool to visualise the **RAW** data (time series):

Eg. Complete XYZ **B-field** raw data at a specific reading



Eg. Portion of ZXY **Coil** raw data at a specific reading



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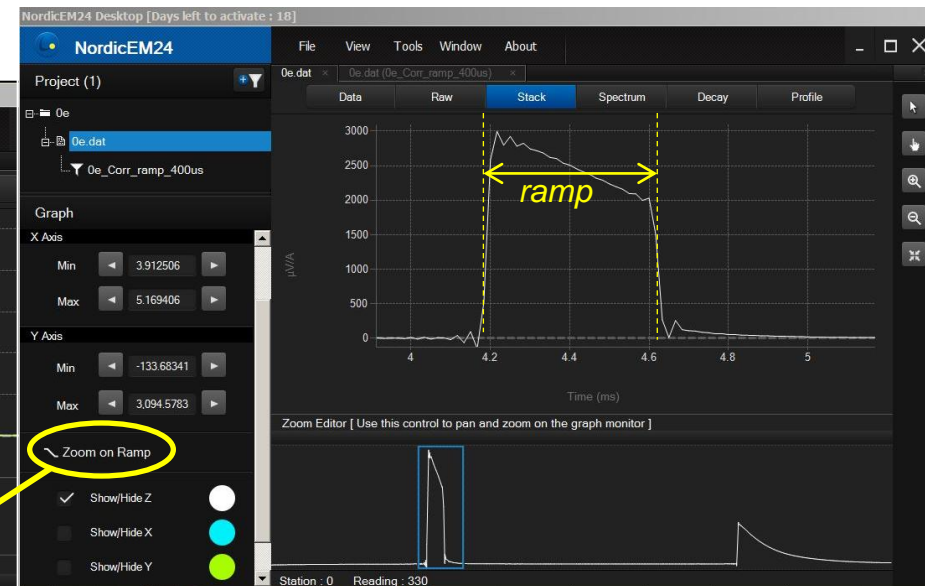
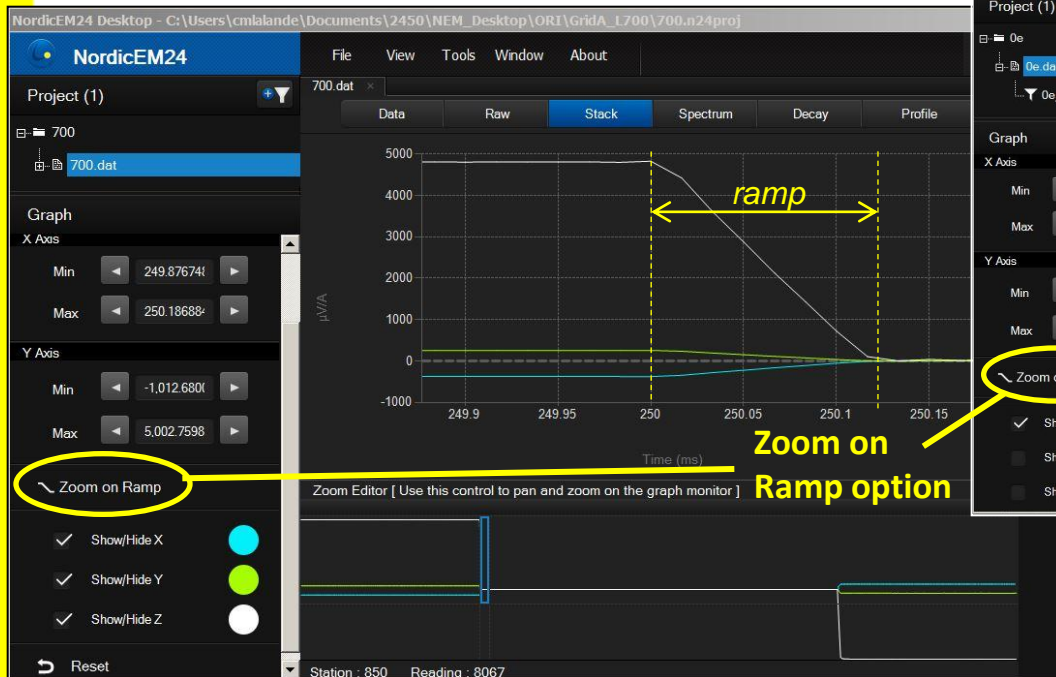
Post-processing software

Powerful tool to visualise the **Stacked** data:

Zoom options including a “zoom on ramp” function, channels selection, single reading display.

Eg. XYZ **B-field** stacked data zoomed on the ramp

Eg. Z **Coil** stacked data zoomed on the ramp

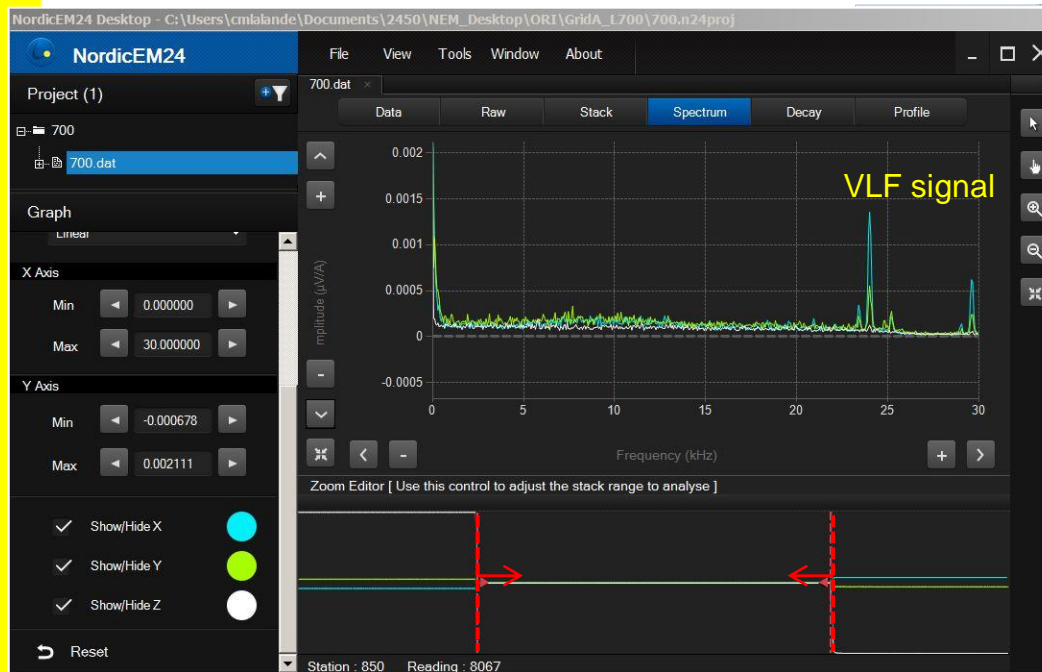


Powerful tool to visualise the **Spectrum**:

Zoom options, linear and log scales, channels selection, single reading display, user defined FFT off-time focus.

Eg. FFT of the ZXY **B-field** stacked data

Eg. FFT of the ZXY **Coil** stacked data



NordicEM24 Post-Process Options:

- Ramp, Delays and Current corrections;
- Re-calculation of Primary field*;
- Apply sensor conversion factors;
- Reverse a single reading (all channels);
- Modify stacking algorithm or windowing;
- Remove noisy Stack from Raw data.

Post Process Name

Tx Current: 0.0000 Delay (ms): 0.0000

Stacking Algorithm: Ramp (ms): 0.0000

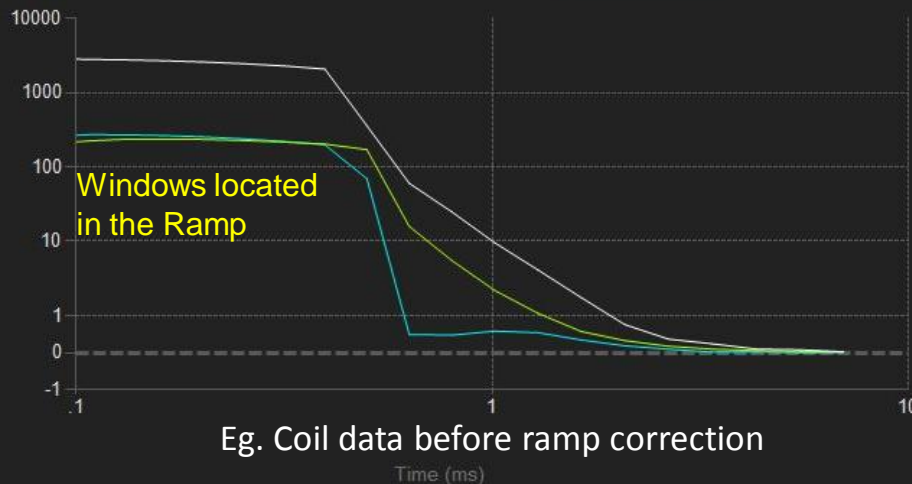
Windows Scheme: Spheric Filter: 0.0000

Sensor Conversion: Frame Start/End: 1 1

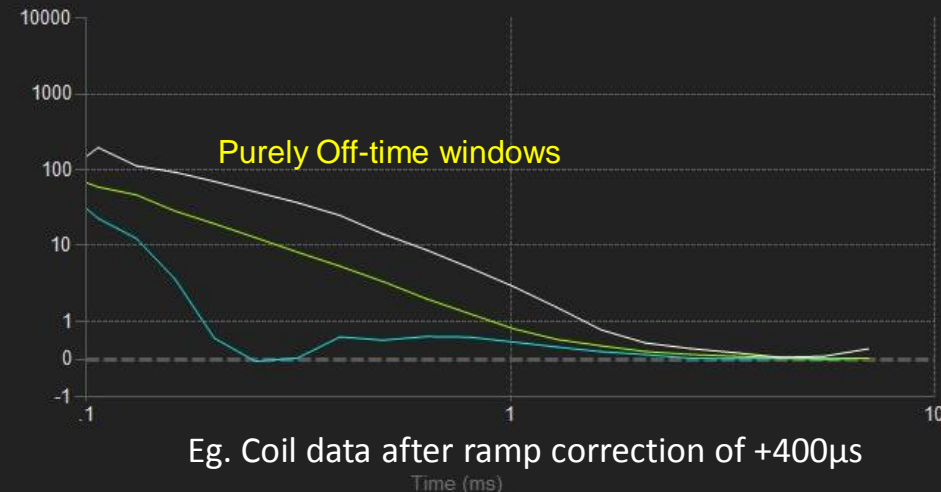
Sensor Inversion: Not-inverted VPRI Start/End (ms): 0.000 0.000

Reading Nb	Tx Current	Stacking Algorithm	Delay (ms)	Window Scheme	VPRI Start	VPRI End	Ramp (ms)
205	10.4	Mean	0	Geonics_30...	0	0	0
206	10.4	Mean	0	Geonics_30...	0	0	0

Data Raw Stack Spectrum Decay Profile



Data Raw Stack Spectrum Decay Profile



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**AFFORDABLE
EM RECEIVER - TX CTRL**

**COMPATIBLE
WITH: GEONICS (Tx)
EMIT (Tx CTRL)
ZONGE (Tx)
PHEONIX (Tx)**

**NO SURVEY DAY LOST
WITH THE NORDICEM
24 POST-PROCESS
SOFTWARE**

**WORLDWIDE
CUSTOMER
SERVICES**

FIELD TRAINING

**BASE METALS AND
ENVIRONMENTAL
APPLICATIONS**

**COMPATIBLE WITH A WIDE RANGE OF
GROUND AND BOREHOLE SENSORS
(dB/dT AND BFIELD)**

**NO SYNCHRONIZATION LOSS
(GPS + CRYSTAL BACK-UP)**



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For more information:



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Geophysical Instruments Since 1976

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