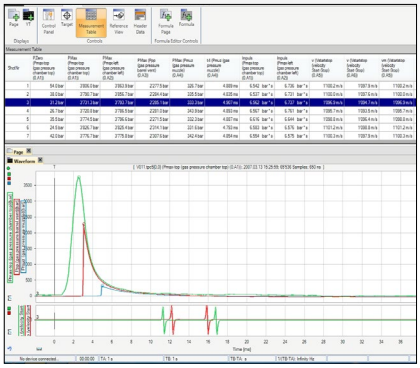
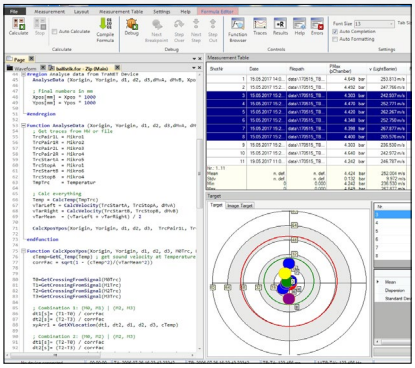
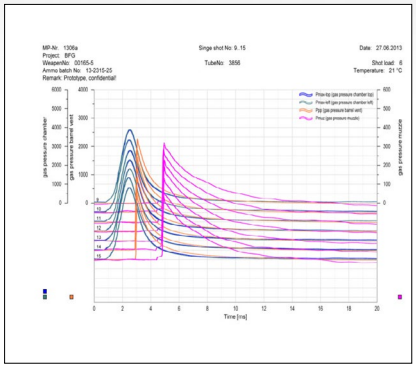
BallAX 4
Ballistic Analysis Software







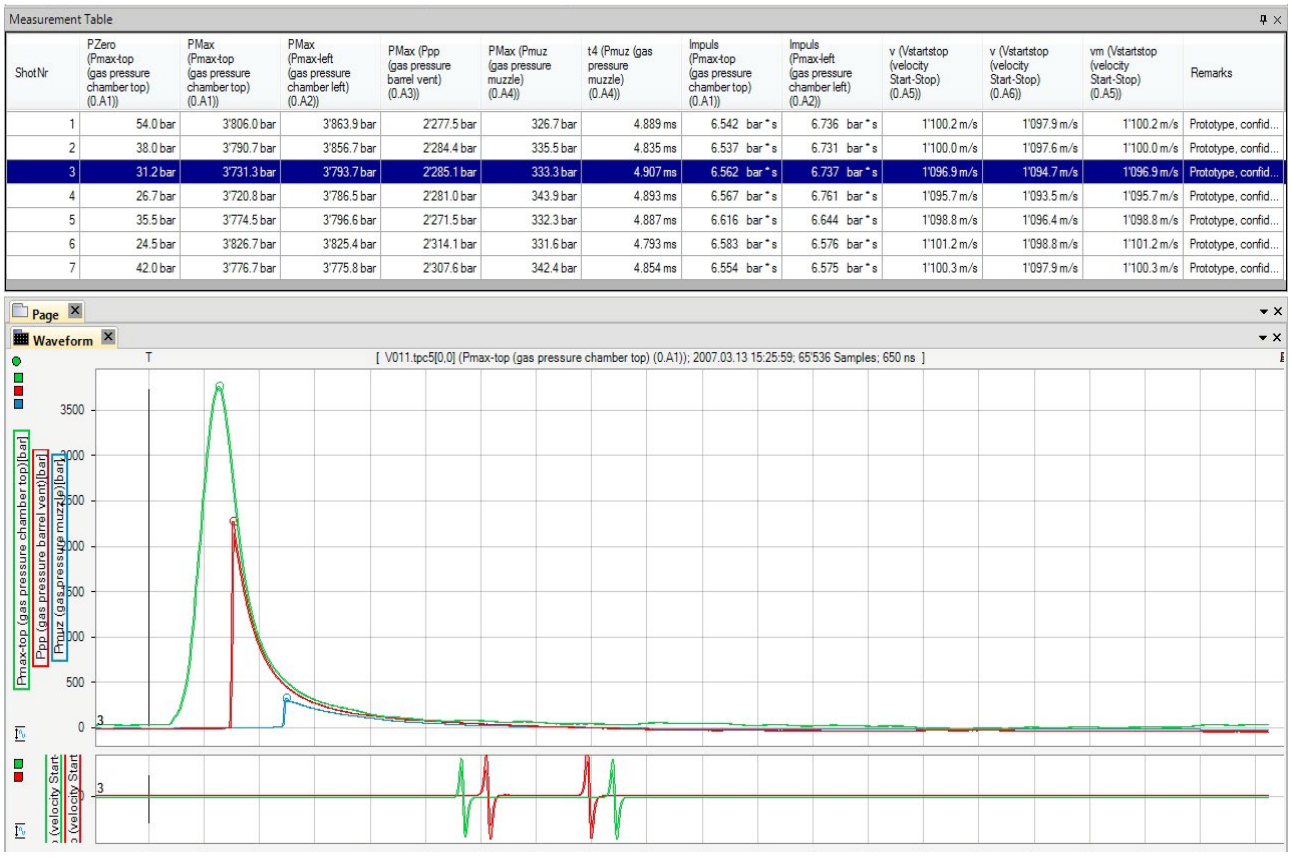
Elsys

www.elsys-instruments.com

Measurement and Analysis Software

BallAX 4 is used for acquiring and analyzing of ballistic measurement data from firearms, guns, artillery, projectiles and grenades using different ammunition and explosive propellants.

Data gathered by the software aids in determining the accuracy and consistency of a projectile before it exits a firearm. Manufacturers of firearms ranging from basic hunting rifles to critical military artillery will benefit from the precision data afforded by this industry specific software module. BallAX 4 works with all different type of data acquisition instruments from Elsys, with pressure sensors from any different manufacturer and a wide range of Kistler charge amplifiers.



- Single Shot and Continues Fire analysis
- Quick and easy configuration of many analog input channels
- Data visualization of complete test series
- Closed Vessel analysis according to TL 1376-0600
- No programming required
- Target visualization
- More than 30 scalar functions to calculate ballistic specific parameters
- English and German version
- Data export to TPC5 and ASCII data format
- Report generator, based on freely editable MS-Excel templates

Measurement Table

Parameters

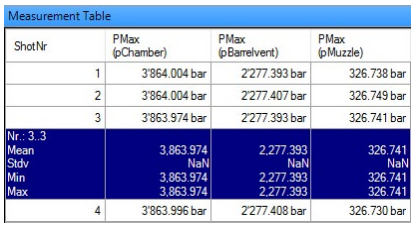
The measurement table shows all measured and calculated data. After each shot, a new line is insert and the calculation of the wished parameters is started. A parameter can be either a predefined scalar calculation like Pmax, t1- 6, bullet speed or any results from a generic formula.

Statistic Calculation

Statistic lines can be insert after any number of shots for calculation of Mean, Standard Deviation, Min and Max values.

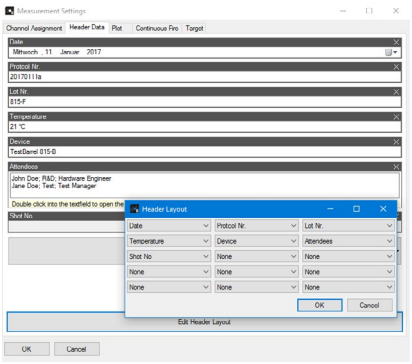
Header Data

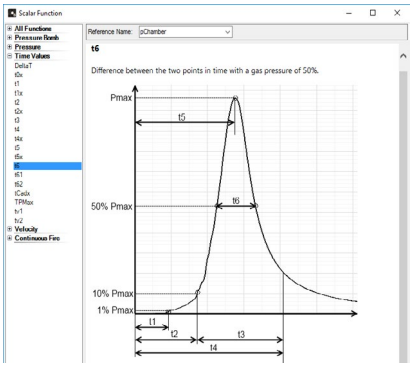
The header data can be modified and adapted to your needs. All these field and information can be re-used later on for generating the measurement report.



Measurement Table

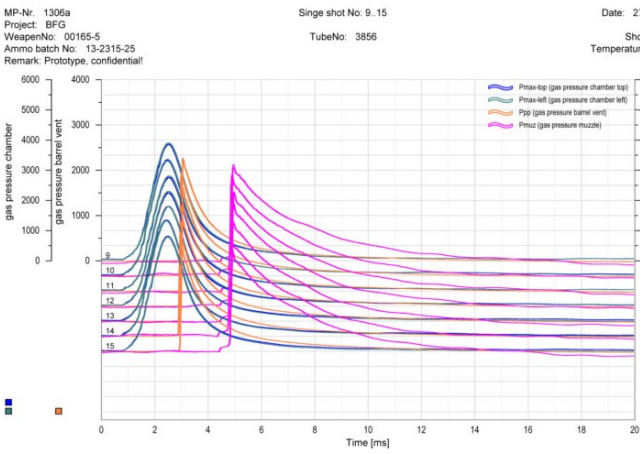
ShotNr	PMax (pChamber)	PMax (pBarrelvent)	PMax (pMuzzle)
1	3'864.004 bar	2'277.393 bar	326.738 bar
2	3'864.004 bar	2'277.407 bar	326.749 bar
3	3'863.974 bar	2'277.393 bar	326.741 bar
Nr.: 3..3			
Mean	3,863.974	2,277.393	326.741
Stdv	NaN	NaN	NaN
Min	3,863.974	2,277.393	326.741
Max	3,863.974	2,277.393	326.741
4	3'863.996 bar	2'277.408 bar	326.730 bar





Report Generator

Measurement Reports are generated in BallAX with Excel Templates. Key Words in the template are replaced by the measurement data and header information once the report is generated.



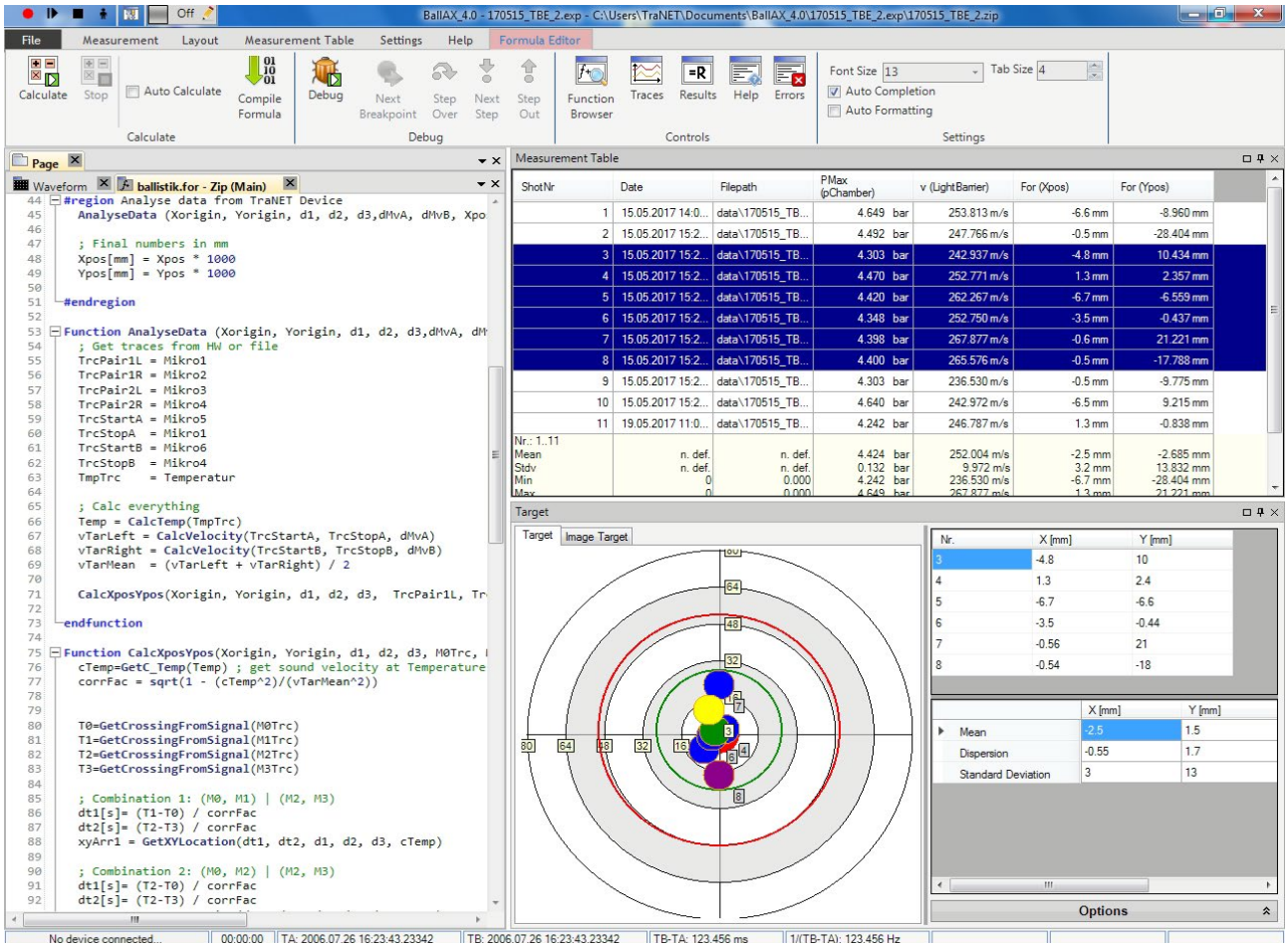
Report	
Test Declaration	%TestDeclaration%
Location	%Location%
Job Number	%JobNumber%
MP-No.	%MPNo%
Project	%Project%
Ammo Batch Number	%AmmoBatchNo%
Tube Number	%TubeNo%
Shot Load	%Shotload%
Weapon Number	%WeaponNo%

Formula Editor

The Formula Editor is a powerful tool for post processing your measurement data or to calculate any parameter which is not already defined in the Scalar Function list of the measurement table.

Target

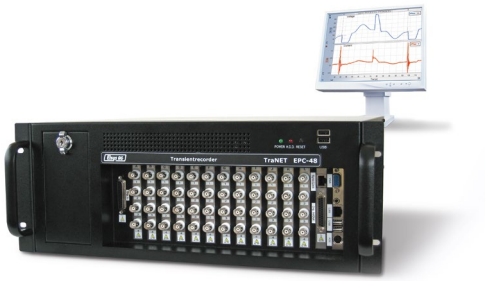
Target data can be visualized with the built-in Target display. BallAX is compatible with any kind of target hardware type and manufacturer. The calculation of the coordinates can be defined and modified in a formula file.



Supported Hardware

Data Acquisition Devices

- Elsys TPCX, TPCE, TPCE-LE and TPCI DAQ cards
- Elsys TraNET FE, TraNET PPC and TraNET EPC Data Acquisition Instruments



TraNET EPC up to 64 Channel DAQ
2 - 240 MHZ, ICP/IEPE, 14/16 Bit

Charge Amplifier

- Kistler 5011 GPIB
- Kistler 5015A RS232
- Kistler 5017 GPIB
- Kistler 5018A RS232/USB
- Kistler 5080A RS232/USB

TraNET FE 4 - 16 Channel DAQ
2 - 240 MHZ, ICP/IEPE, 14/16 Bit

Velocity Measurement Systems

- Light Barriers with analog or digital output signals
- Inductive Sensing Coils
- Radar

Targets

- Light Barriers based optical targets
- Acoustic Targets based on microphone arrays

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