Dual TLSA 100

Professional measurement technology,

Double measurements:

Under certain circumstances it can become necessary to measure two velocities parallel or sequentially to get demanded data (Information). The following list shows some examples of double measurements, but makes no claim to completeness.

- To make sure that the measurement is correct (backup measurement, reliability, redundancy)
- Important and/or not repeatable measurements
- QM guidelines and/or specifications
- Customers/Contractors wish or specification
- Customer specific test setup, that requires 2 velocities (e.g. before and after a target or a other special given problem)
- Calculationof the ballistic coefficient
- Required by law
- Forensic investigations

In all these cases our measuring systems offer solutions, supported by the miscellaneous possibilities of the BMC 31 software.

The TLSA 100 is designed as a precise light screen amplifier and belongs to our newest generation of professional ballistic velocity measurement systems and represents 30 years of experience in ballistic measurement technology. Because of our strict quality standards, the system is completely developed and manufactured in Germany.

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The TLSA 100 was developed as a Trigger Light Screen Amplifier for our Triggersystems. Therefor it has a build in option to simulate shots. This is a very important feature for these Triggersystems.
The TLSA 100 can store up to 250 measurement values in a non-volatile memory. As soon as the system is connected to a computer, the measured values can be transmitted to the computer with the delivered software.
With the supplied IR remote control, the TLSA 100 can be used with all it‘s functions completely independent of a computer.
Setting the measuring base, gain, threshold, velocity in m/s or ft/s, sensor check, remote control test, deletion of the last measured value and deletion of the whole series, can be set and controlled by using the remote control.
Of course, the TLSA 100 is able to be controlled completely by a PC through the included software.
Calculations such as Minimum, maximum, average, standard deviation and extreme spread are standard. More can be defined by user.

The Possibilities:

Device control via IR remote control or PC-Software. Single Shot and Full Auto mode measurements. Direct indication of velocity, energy and Rate of Fire via IR Remote control and PC-Software. In the Software, the measurement values can be indicated in tabular or graphic form.

The Hardware:

The TLSA 100 has specially designed hardware, which makes it possible to get measurements without the main processor. This special hardware, together with the digital controlled light screen amplifiers allows the TLSA 100 it‘s unique accuracy. The extremely precise measurement clock of 40MHz makes measurement resolution of 0.05m/s at a speed of 1000m/s possible.

Interfaces:

The TLSA 100 is delivered with 3 interfaces. There are 2 serial interfaces; RS 232, RS 485 and a USB 2 interface. As an option, there is also a wireless interface available, that allows a connection within hundreds of meters, depending on the environment.

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Light screen amplifier:

The light screen amplifier is used to filter, boost and digitize the signals generated by the light screens when a bullet passes. The amplifier can be controlled completely digitally with the IR- Remote control or PC-Software. Since using completely digitally controlled amplifiers without mechanical parts, like
potentiometers, the reliability of our systems has increased. The TLSA 100 self checks, and if neccessary regulates, its light screens and amplifier every 5 seconds to ensure always the best amplifier adjustments. Thus, the TLSA 100 systems are completely independent from ambient conditions and are capable of functioning in complete darkness and sunlight. The permanent available, optimized setup gives the TLSA 100 its superior accuracy. The new measurement controller includes a highly effective real time blast wave supressor. This supressor is useful mainly with large light screen systems, but can also be useful to eliminate electrical disturbances.

Calibration:

Calibration is a basic requirement within a QM system. In this case, the TLSA 100 is optimally equipped and can be calibrated. With our specially built
calibration system the TLSA 100 is able to be calibrated and easily tested . The calibration scheme used is testing not only the TLSA 100 main unit but includes also the light screen and the amplifier path in the testing and calibration process. This gives the user the highest confidence of extremely accurate measurement.

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The infra red remote control unit can be used to control the TLSA completely independend from a computer and belongs to the delivery standard.

The TLSA 100 is delivered with 3 interfaces. There are 2 serial interfaces; RS 232, RS 485 and a USB 2 interface. As an option, there is also a wireless interface available.

The light screen connectors and the control outputs.

Even the LS 260 from the delivery standard, allows very precise results.

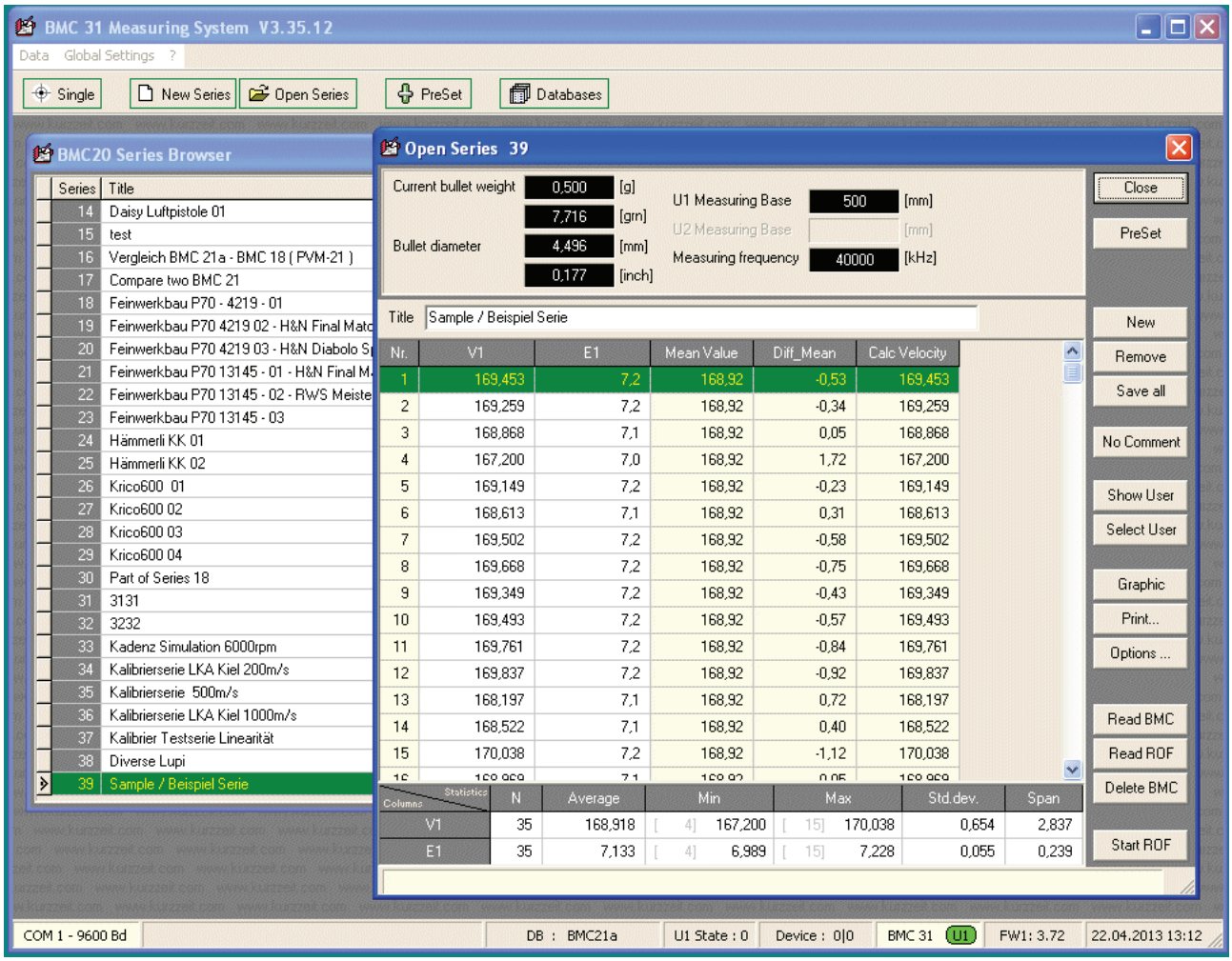
The TLSA 100 self checks, and if neccessary regulates, its light screens and amplifier to ensure always the best amplifier adjustments.
The permanent available, optimized setup gives the TLSA 100 its superior accuracy.

Dual TLSA 100

The Software:

The win32 Software, delivered with the TLSA 100 system is developed for Win2000®, WinXP® and Windows7®.

The user friendly software includes configurable database for the user, weapon, ammunition and other data. The software allows the use of two TLSA 100 systems at the same time. This feature is to be used for e.g. redundant measurements and ballistic coefficient calculation.



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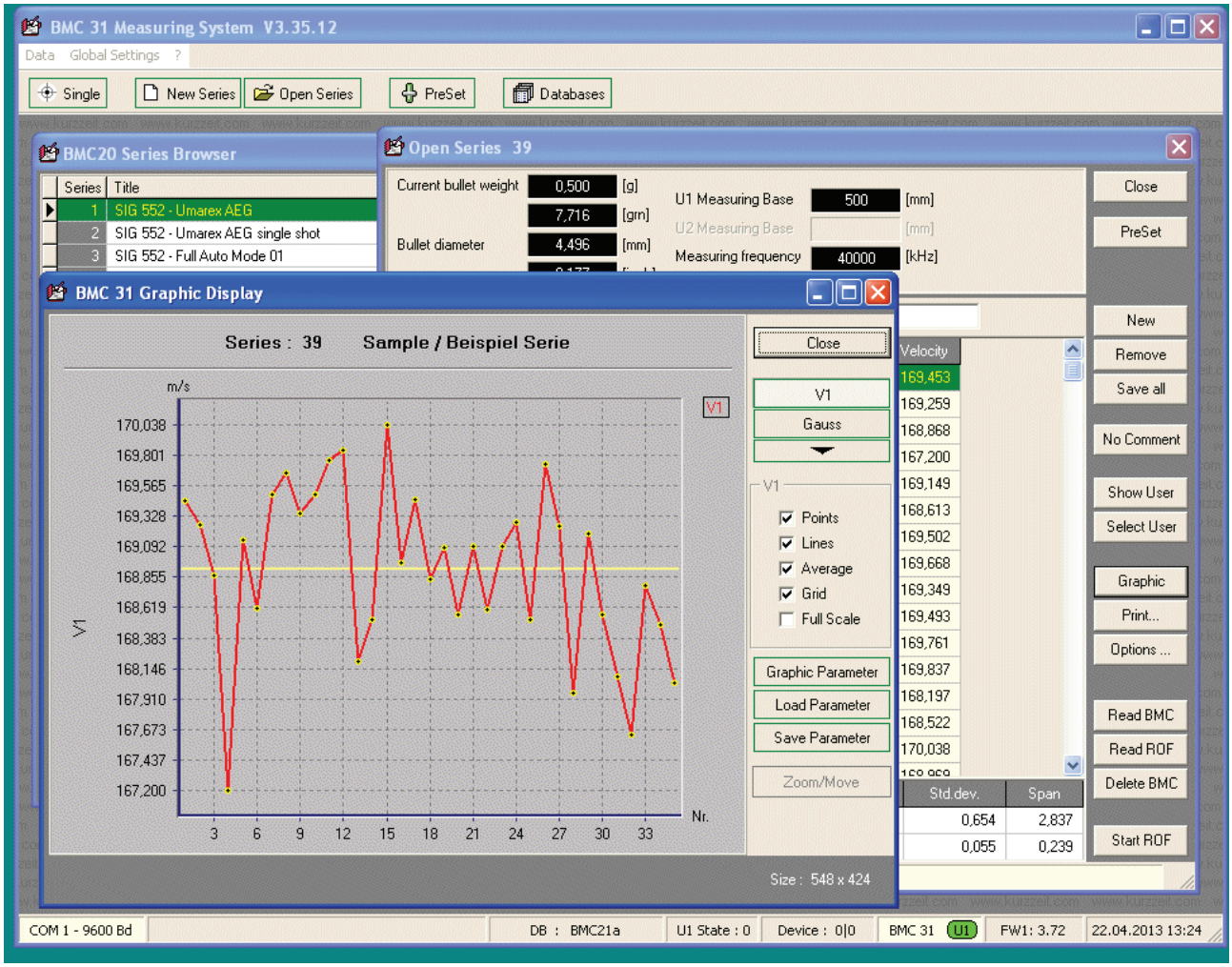
All Variables, used in the software, like database entries, series information, user text, statistic values and pictures can be used in the report generator as well as a formula parser to create user defined printouts



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Technical data in catchwords / Hardware

Display unit:	Big blue LCD text display with 9,7mm font size
Control:	Infrared remote control unit or software
Measurement base:	Variable, Standard with LS 260 is 500mm
Measurement frequency:	40,000000 MHz, +/- 20 ppm
Measurement accuracy:	+/- 0,1%
Resolution:	0,05m/s at 1000m/s
Memory:	250 shot (Permanent without Battery) 250 Shot rate of fire and velocity, non Permanent!
Interface:	RS 232, RS 485 and USB in delivery standard. Wireless Interface: Optional
Light screens:	LS 260, LS 600 – LS 1200
Connectors:	LS 260 - RJ45 LS 600 bis LS 1200 - BNC
External in: Control out:	Analog, Digital / BNC connector Analog / Digital via BNC connector

- Digital controlled Light screen amplifier
- Amplifier gain digital selectable in 5% steps
- Threshold digital selectable from 0,5 to 4,5 Volt
- Independent working measurement controller

Dimensions BMC 31:	235 x 210 x 57mm 235 x 214 x 85mm (with erected legs)
Standard Light screen:	LS 260, 500mm Measuring base
L x B x H	525 x 420 x 280mm
Shooting area	260 x 230mm
Sensor area	260 x 110mm
Cable length: Light screen – BMC 31:	BMC 31 – LS 260, 5m max. BMC 31 – LS 1200, 20m max.
Cable length: PC – BMC 31:	USB: 2m RS 232: ca. 25m RS 485: ca. 1000m
Remote control:	Yes
Calibration:	Yes (optional)
Calibration model:	incl. lightscreen
Blastwave filter:	Yes
ROHS:	Yes

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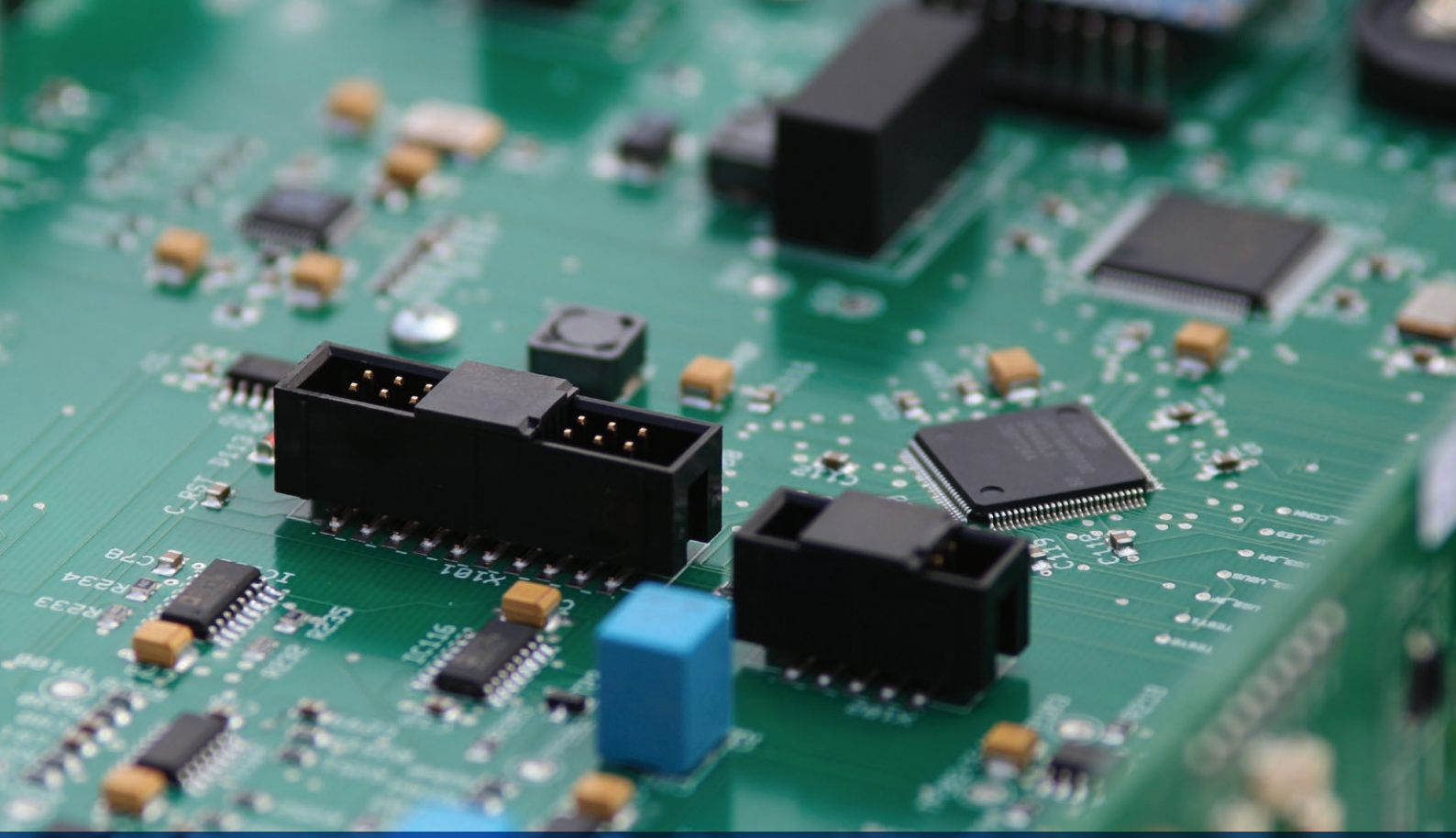

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