



User Manual v 3.0



TESA Stat-Express

Art Nr: 04981002

Measurement acquisition and statistics software with basic SPC

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1 Introduction

StatExpress is a comprehensive software enabling:

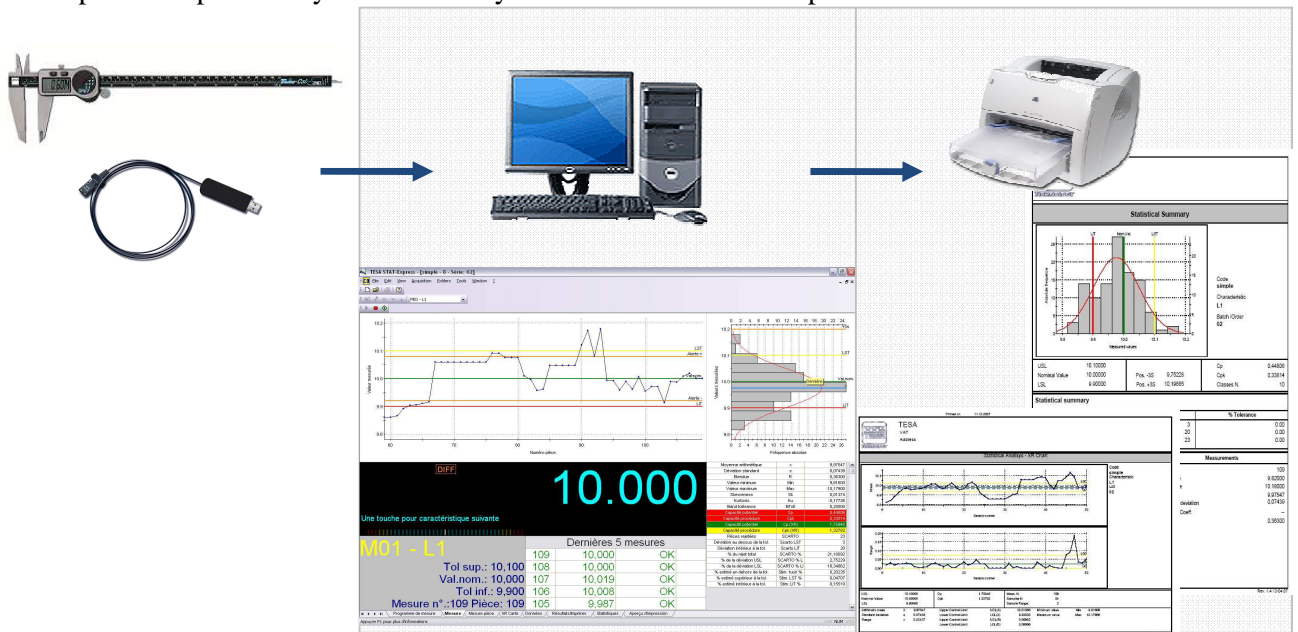
- Measurement program protocol creation,
- Live measured data acquisition display and statistical data calculation,
- Part overall classification (good, scrap or rework),
- X-R control chart,
- Measurement data list generation,
- Summary report generation.

Instrument configuration is managed by the same window set than DataDirect and all instrument settings previously defined in DataDirect are automatically transferred into StatExpress. StatExpress offers the possibility to create measurement program. It can include descriptions and pictures to help the user during a measurement procedure.

Data, statistical graphs and charts are built and displayed at the same time as the measurements. Statistical values are used typically to monitor and show measurement result tendencies during a serial control or over a long period for instance. Data can be shown by part (instead of being shown by measurement characteristic) indicating clearly the overall classification of the part itself (accepted, scrap or rework).

Several summary reports are available for print: summary or full detailed report, histogram charts, data list.

StatExpress is a powerful yet user friendly software that can be adapted to the user's needs.



2 Main functionalities

Direct transfer of measurement values from the instrument to StatExpress

Unlimited number of instruments using DataDirect configuration menus

Instrument connection managed through cable or wireless emitter-receiver

Characteristics definition with many options

Characteristics that can be calculated instead of being measured

Automatic refresh of data and graph display during measurements

Control by part window with increased icon for better visibility

Summary report, full report, report by part and XR charts ready to print (pdf).

Compatible with instrument from other manufacturers using standard RS232 communication protocol

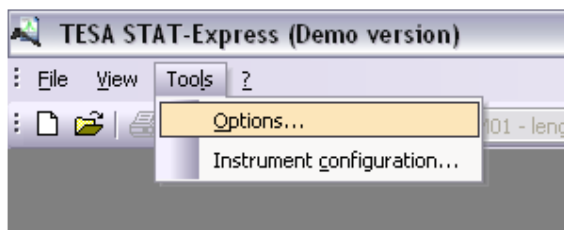
3 Installation

This installation procedure is based on the PC system. Insert the CD-ROM, the installation window appears automatically. If not, execute TESASatExpress CD-ROM. Follow the procedure as indicated. **Do not remove the dongle until the software has been successfully installed.** Languages available are French, German, English, Italian, Spanish and Dutch.

By default, both StatExpress and DataDirect softwares are installed in the system in the program folder as well as a shortcut icon will be placed on the desktop. If you wish to use only StatExpress it is possible to personalise installation and choose only StatExpress.

4 Languages

On the upper part of the window, go to “Tools” menu, then Options:

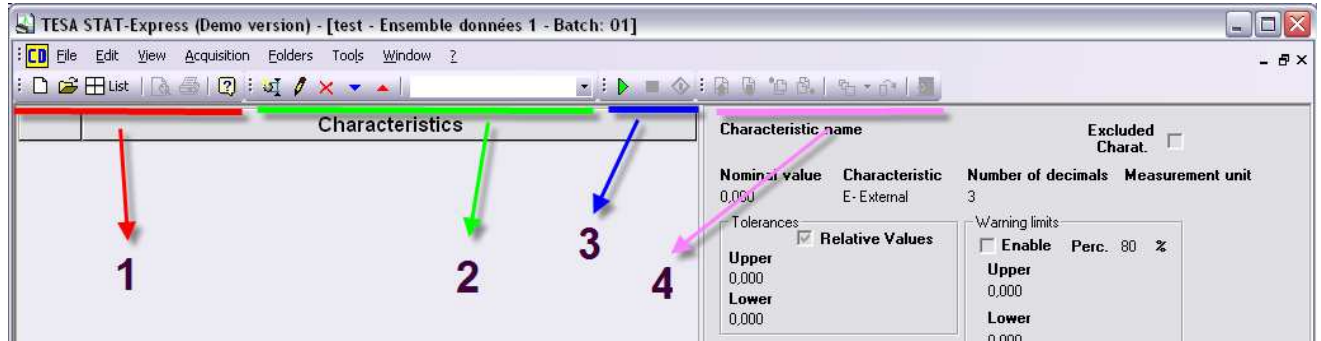


On the settings window, go to the last tab and **select the desired language.**



To confirm and apply the language, exit the application and **restart the software.** Modified settings or measurement program will be automatically saved.

5 Software layout and settings

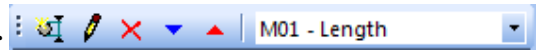


1. File toolbar



- create a new measurement program, open an existing measurement program, simultaneous acquisition of multi programs
- print preview, print (output differs depending on the active window)
- filter, remove filter and about StatExpress

2. Characteristics toolbar



- create a new characteristic, edit an existing characteristic, delete a characteristic, move forward to the next characteristic, move backward to the previous characteristic
- drop list with all created characteristics.

3. Measurement acquisition toolbar

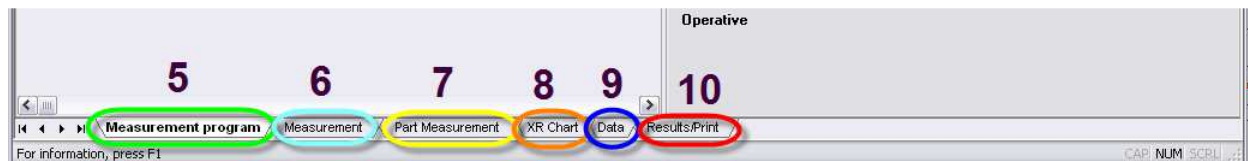


- start measurement program, stop measurement program, data request
- zero setting

4. Report toolbar



- Go to previous page of the report, go to next page of the report, go to the first page of the report, go to the last page of the report, zoom, export report
- cancel preview



5. Measurement program tab: characteristic settings

Used with the file bar (chapter 8)

6. Measurement tab: display of the measurement by characteristic, with graphs and statistic parameters

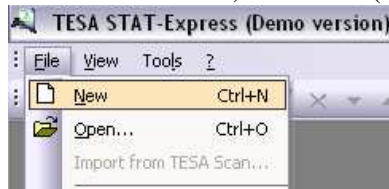
Used with the measurement acquisition toolbar (chapter 12)

7. Measurement by part tab: display of the measurement by part, with part overall classification (good, scrap or rework) (chapter **Erreur ! Source du renvoi introuvable.**)

-
8. **XR Chart tab:** XR Chart (mean-samples and range-sample) displaying the active characteristic, with statistical data (chapter 15)
 9. **List of data tab:** list of all measured values
Used with the file bar (chapter 16)
 10. **Result/Print tab:** display and print reports: characteristic report, measurement by part report, and statistical report
Used with report toolbar (chapter 17)

6 New measurement program creation (code)

Go to “File” menu, then New (or CTRL+N) to create a measurement program, referred as “code”.



Enter the product code and the description in the “Code Data” window.

[update image](#)

You can upload a picture or a technical drawing to illustrate the part to be measured. This can also be done later by editing the code. This picture will appear on the header of the part report.

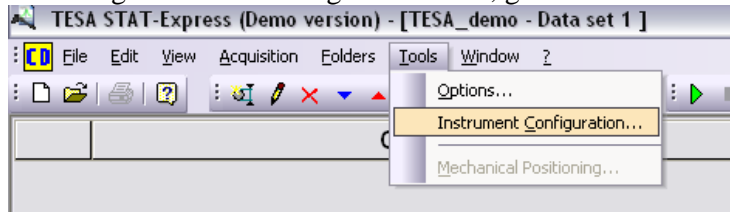
Each characteristic to be measured can have its own separate picture to provide more details; for instance to indicate which dimension (length, width, height, diameter...) of the part has to be measured (chapter 8)

Picture or drawing has to be in *.jpeg or *.bmp format.

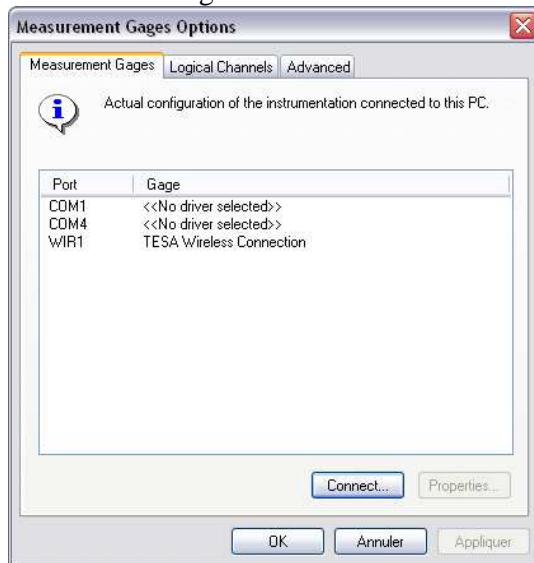
7 Instrument configuration

Instrument configuration manages all the sources of the data, i.e. all connected and used instruments. The instrument has to be connected to the PC using the right interface (cable or wireless) and the right connecting COM port number has to be attributed in StatExpress. The settings has to be done for each instrument; and as long as the same instrument is used and remains connected to the same COM port, the settings will be saved so it has to be done only once.

To configure the measuring instruments, go to “Tools” menu, then “Instrument Configuration...”



The DataDirect's settings window “Measurement Gages Options” appears



The list of COM ports varies depending on the physical connecting ports available on the computer and depending on the detected connected instruments. All TESA USB instruments or TESA USB adapters create virtual COM ports, which are listed below the physical COM ports.




When several instruments are connected, in order to distinguish between them and to be sure to attribute the right COM port to its related connected instrument, the following procedure is recommended:

- disconnect all cables
- launch StatExpress software
- go to “Measurement Gages Options” window and “Measurement Gages” tab
- connect one cable (a single instrument) and observe which COM port appears in the list of COM port
- set the instrument’s connection parameters (chapter 7.1)
- connect another cable and observe which COM port appears and so on.
- when this is done for all the instruments, exit StatExpress to save the settings.

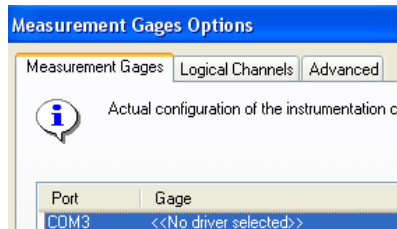
Instruments using wireless technology are connected using the WIR1 port (chapter7.2).

7.1 Wired instrument: settings

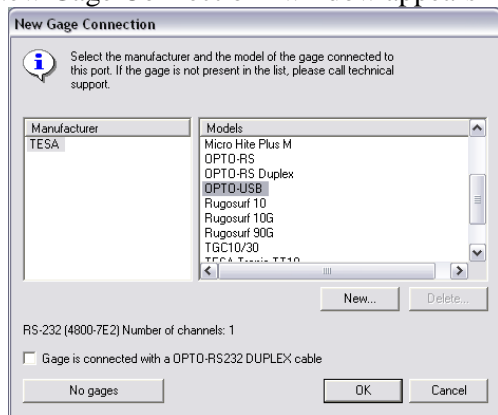
In addition to the standard connection cables, TESA also offers connection cables with USB interface:

OPTO RS – USB cable Duplex Art Nr. 04761062	D-Sub 9p – USB cable Duplex Art Nr. 04761063	DIN 5p – USB cable Art Nr. 03260500 Art Nr. 03260501
 <p data-bbox="168 600 496 630">instrument PC</p> <p data-bbox="168 646 506 693">Compatible with all instruments with OPTO-RS connector</p>	 <p data-bbox="570 600 886 630">instrument PC</p> <p data-bbox="553 646 919 693">Compatible with all instruments with D-Sub9p connector</p>	 <p data-bbox="964 600 1419 630">instrument PC</p> <p data-bbox="948 646 1308 693">Compatible with some inductive probes with DIN 45322 5p connector</p>

In the Measurement Gages tab, select the COM port to configure the settings, then click on “Connect”



The “New Gage Connection” window appears



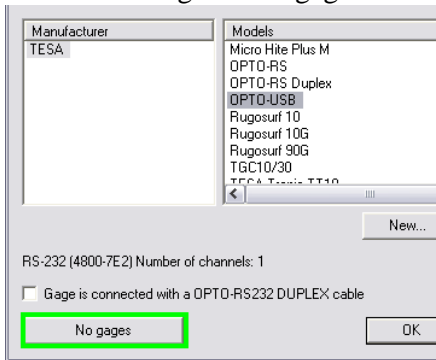
Select TESA in the manufacturer list and select the appropriate instrument/connection cable model. Use the table below as guideline which model to choose:

Instrument	Type	Model to select in StatExpress
Caliper		Opto RS Duplex or Opto RS Simplex or Opto USB
Micrometer		Opto RS Duplex or Opto RS Simplex or Opto USB
Imicro		Opto RS Duplex or Opto RS Simplex or Opto USB
Alesometre		Opto RS Duplex or Opto RS Simplex or Opto USB
Digico	2xx – 3xx – 4xx – 5xx – 6xx -	Opto RS Duplex or Opto RS Simplex or Opto USB

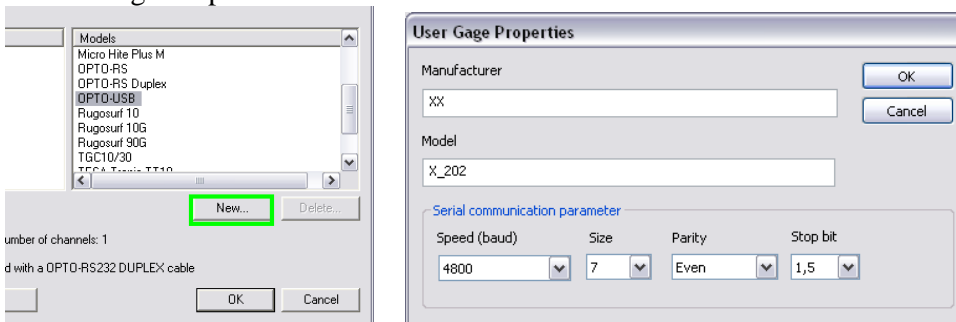
	705 1 - 2 10 - 11 12 - 12 HP	Digico 10/11
Inductive Probes	USB probes	USB probe
	Probes compatible with USB interface connector cable	USB probe
Tesatronic	TT 10	TESA-Tronic TT10
	TT 20 - 60 - 80 - 90	TESA-Tronic TT20/TT60/TT80/TT90
Rugosurf	10	Rugosurf 10
	20	Rugosurf 20
	10G	Rugosurf 10G
	90G	Rugosurf 90G
Height gauges	Hite / Magna	Hite / Hite magna
	Micro Hite Plus M	Micro Hite Plus M or MicroHite SPC Output
	Micro Hite	Micro Hite 10/11/12 or MicroHite SPC Output
	Micro Hite plus M	Micro Hite Plus M or MicroHite SPC Output
Setting Bench	TPS 300/500/1000	TPS
Inclination	Clinobevel USB	Clinobevel USB

Confirm the settings by clicking on OK.

Any COM port without instrument connected or used with Statexpress should be specified by clicking on “No gages”.



As StatExpress is also compatible with instrument from other manufacturers using standard RS232 communication protocol, it is possible to create an instrument by clicking on “New...” and specifying the proper serial communication parameters (baud, size, parity and stop bit) in “User Gage Properties” window.

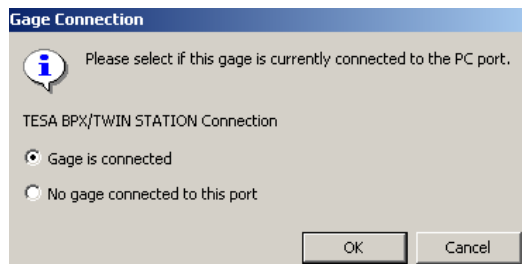


(Parameters set are only an example)

Confirm the user gage properties settings by clicking on OK.

7.2 Wireless instrument: settings

Ensure the receiver is connected to the computer. Select **TES1** or **WIR1**, then click on « Connect... »
 Select «Gage is connected », confirm with "OK".



Note: All other ports that are not used should be configured as « No gage is connected to this port», an incorrect configuration will induce a communication error.

With **TES1** or **WIR1** selected, in « General» tab click on « Properties...» to reach the configuration window of wireless connection.

Port	Instrument
COM1	<<Aucun drivers selectionné>>
WIR1	TESA Wireless Connection
TES1	TESA BPX/TWIN STATION Connection

7.2.1 Configuration of wireless connections using Rf-USB receiver

This system is compatible with many instruments with OPTO-RS or D-Sub 9p interface using RS232 communication protocol.

OPTO RS – RF transmitter Art Nr. 04761065	OPTO RS – RF transmitter Art Nr. 04761069	RF transmitter for Digico12 Art Nr. 04761068	RF receiver with USB connector Art Nr. 04761064
Compatible with all instruments with OPTO-RS connector	Compatible with Digico 2xx, 3xx, 4xx, 5xx, 6xx and 705	Compatible with Digico 12	Compatible with Digico 2xx, 3xx, 4xx, 5xx, 6xx and 705



Scale 1 : 1

D-Sub 9p – OPTO RS adapter
Art Nr. 04761066



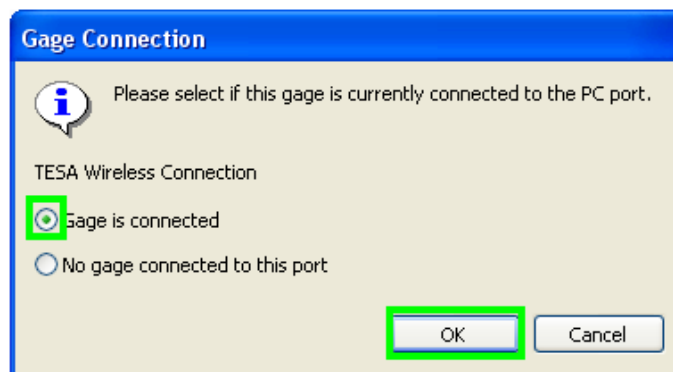
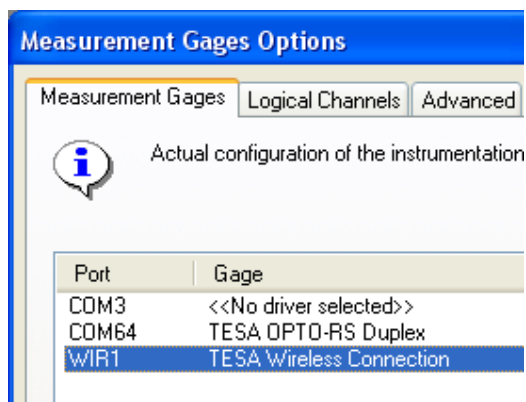
Compatible with **instruments with D-Sub 9p connector**

RF transmitter with D-Sub 9p connector
Art Nr. 04761067

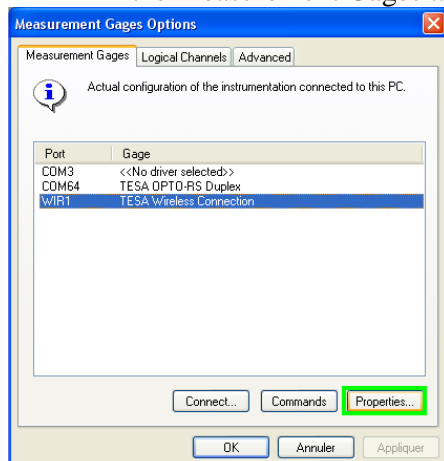


Compatible with **powered CMM machines**

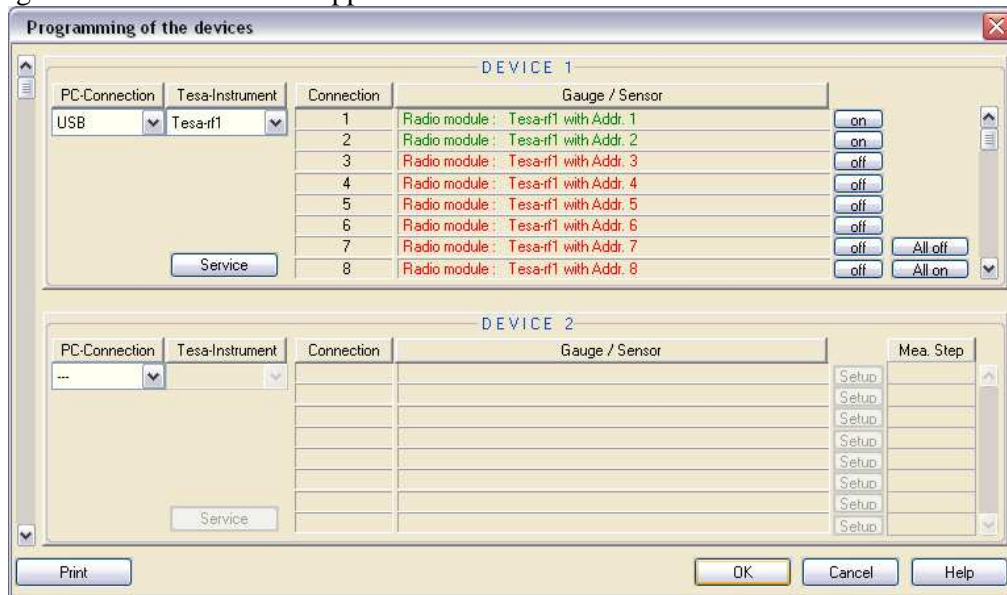
In the Measurement Gages tab, select the WIR1 port to configure the wireless settings, then click on “Connect” and specify “Gage is connected” before clicking on “OK”. Note that the RF-receiver (04761064) has to be installed and connected to the computer.



In the Measurement Gages tab select WIR1 and click on “Properties”



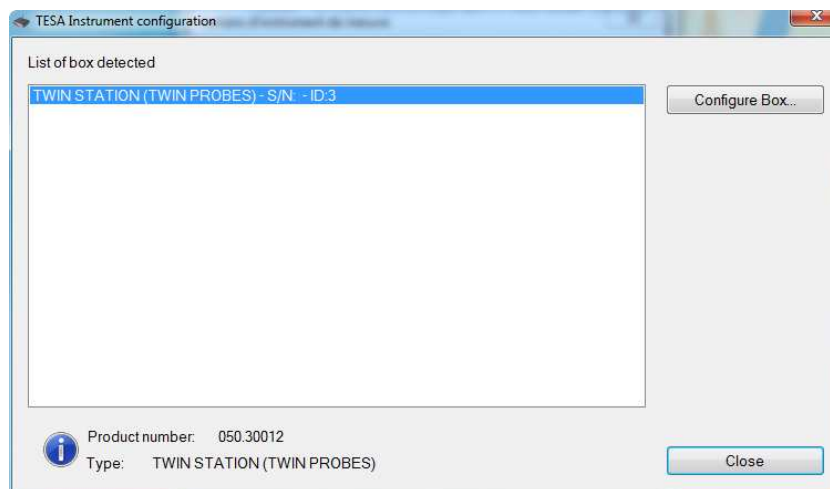
The programming of the devices window appears:



For detailed information about wireless system please refer to TESA Link document. For the settings of wireless modules please refer to the user manual delivered with the RF-receiver (04761064).

7.2.2 Configuration of wireless connections using TWIN Station receiver

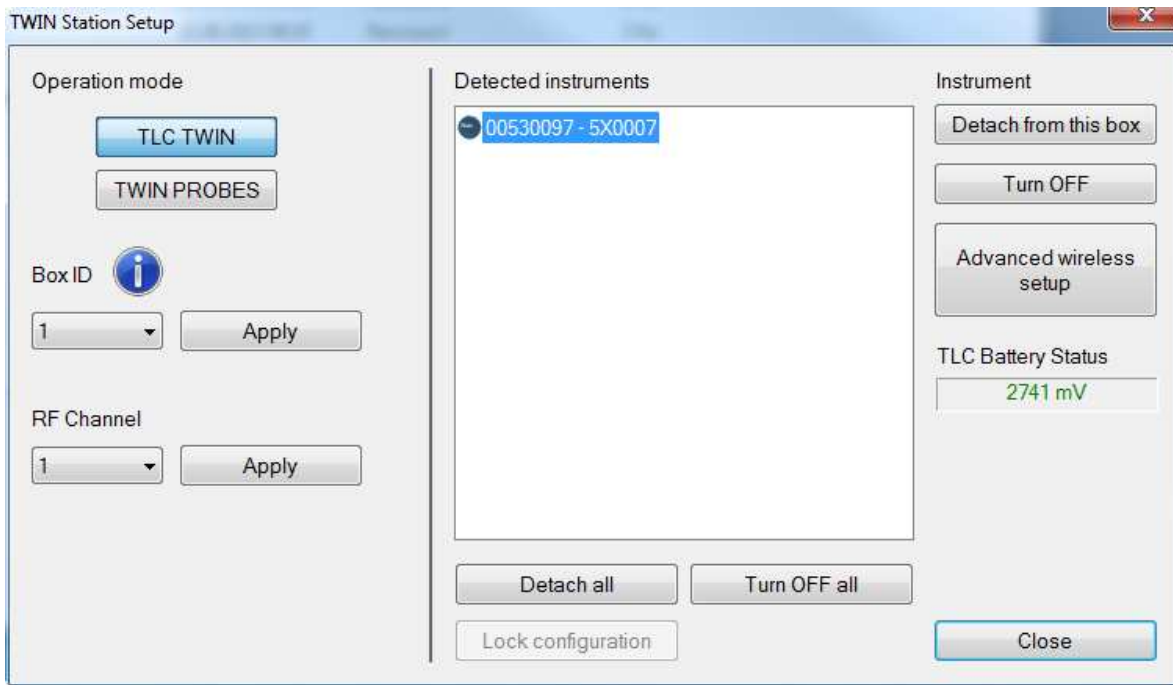
Port	Instrument
COM1	<<Aucun drivers selectionné>>
WIR1	TESA Wireless Connection
TES1	TESA BPX/TWIN STATION Connection



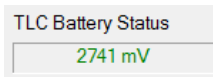
Select a TWIN station and click on “Configure Box...”.

Press the data transfer button on the instrument in order to establish connection between the instrument and the TWIN Station. The instrument appears then in the list of detected instruments.

It is possible to connect up to 48 instruments equipped with TLC-TWIN per TWIN Station receiver.



When selecting an instrument the battery status of the TLC-TWIN transceiver is indicated by color coding : green (OK) or red (low battery)



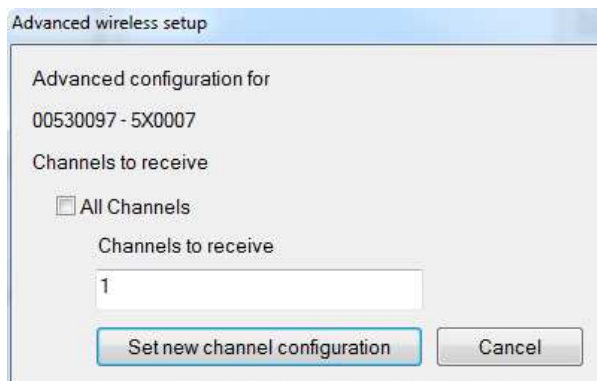
Detach from this box disconnect this selected instrument from the TWIN Station.

Detach all disconnect all connected instruments from the TWIN Station.

Turn OFF turns off the selected instrument.

Turn OFF all turns off all instruments connected to TWIN Station.

Advanced wireless setup specifies to the TLC-TWIN one or more allowed RF channels. This avoids interference with other TWIN Station boxes :





changes RF channel of the TWIN Station.

Notes :

- when the RF channel is changed, all connected instruments disconnect. The connection must then be established again between the instruments and the TWIN Station. This is done by pressing the send data button on the instrument, in order to see the instrument listed in the list of connected instruments.
- The transmission range may be influenced by the environment such as other sources emitting in the same 2.4-2.5 GHz frequency band. The use of a RF spectrum analyzer helps determining the least used RF channel. By choosing a channel free from interferences, the transmission range can be improved, compared to an RF channel already overloaded with signals. There are also free downloadable applications for smartphones, to scan the channels of the frequency band. In general the channels at each end of the frequency band (Channels RF 1 and RF 40) tend to be usually less busy (but it is not an absolute rule).
- when there are several TWIN Station interface working in vicinity :
to avoid interference between several TWIN Station, choose to work on different and distant RF channels (for example, with 2 TWIN Station, choose RF channel 1 for a TWIN Station and RF channel 39 for the other TWIN station).
- DataDirect software manages maximum 1 TWIN Station.

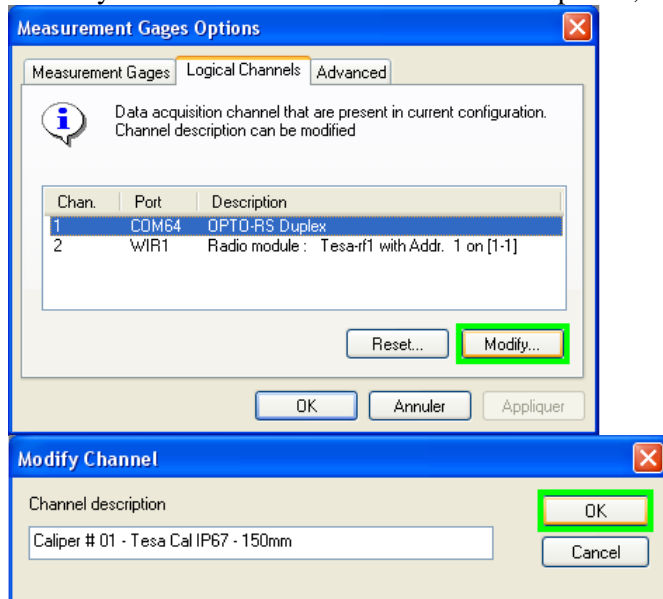


changes ID number of TWIN Station (also indicated by the LEDs of TWIN Station).

7.3 Logical channel, instrument description

When several identical types of instruments are used, it is useful to distinguish between them. This can be done by giving a unique identifying description.

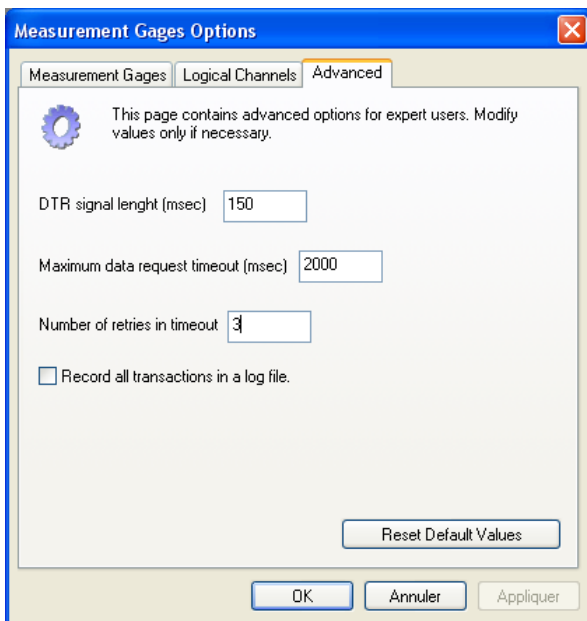
In the Measurement Gages Options, Logical Channels tab: select the COM port and click on “Modify” and fill in the field “Channel description”, confirm by clicking on OK.



7.4 Advanced instrument settings

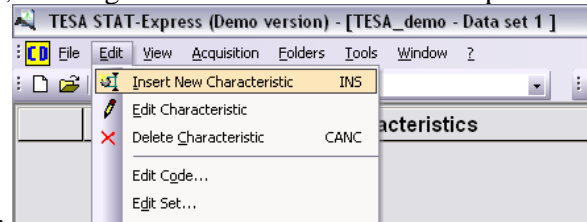
The Advanced tab is for experienced user only. Modifying the DTR signal length is only necessary if some troubles appear on data transfer.

Modify these settings only if really necessary.



8 Create and define a characteristic

A measurement program is usually made of a single, but most often, several characteristics. Each measured dimension corresponds to what is called a characteristic in StatExpress. The characteristic definition and setting should be carefully done as this is an important step. Details such as tolerances, measuring instrument, warning limits or instructions can be specified. Go to "Edit" menu



then "Insert New Characteristic".

All settings of the Characteristic window are related only to the specific characteristic.

1. **Characteristic name** name which will be used in the measurement program's list of characteristics

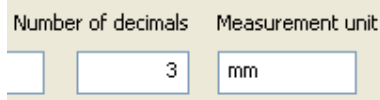
2. Auxiliary characteristic Attributes check

Auxiliary characteristic often used as one of the components of a calculated characteristic. Its actual value and classification (with regards to the tolerances) are not critical as only the value of the calculated characteristic matters.

Attributes check attribute check in the measurement program. There is no actual measurement. For instance it could be a visual check for scratches or defect, color and presence of a label for instance.

3. Excluded Charat.

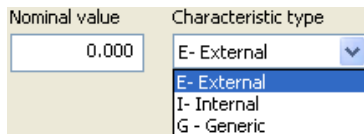
Excluded characteristic characteristic which is defined but not used in the measurement program, Deactivated characteristic that could be later re-activated upon need.



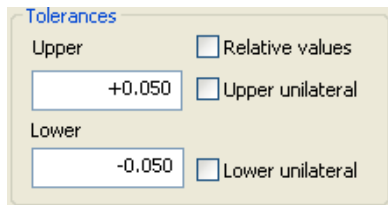
4. **Number of decimals Measurement unit** number of decimals and unit of the characteristic



5. **Station** allows acquiring all characteristics of a station with a unique command (footswitch for instance or F12 key). Mainly used in multigaging applications with inductive probes (BPI or BPX interface box). Also provides better traceability when there are different measurement stations with instruments all connected to the same computer.



6. **Nominal value** nominal value of the dimension to be measured
Characteristic type defines the type of characteristic measured: internal, external or generic. Used in the classification of the measured value depending on the tolerances set: good (green), scrap (red), rework (yellow).

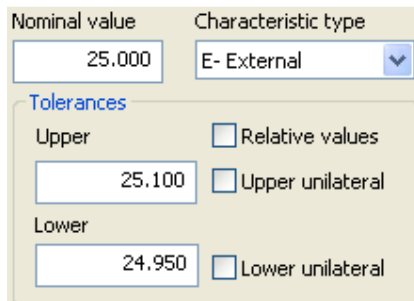


7. **Tolerances** specifies the upper tolerance value and the lower tolerance value, if applicable.

When relative values are activated, the upper/lower tolerance values correspond to the variations from the nominal value:

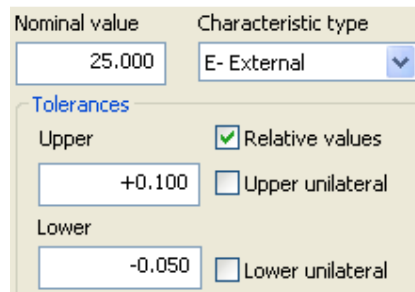
For example, with

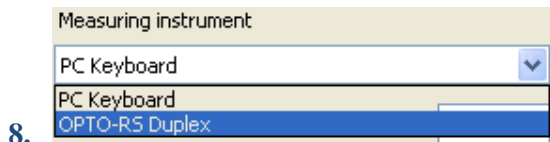
- nominal value of 25.00mm
- upper tolerance of 25.100mm
- lower tolerance of 24.950mm



When relative values is activated, the relative tolerances will be:

- upper tolerance +0.100
- lower tolerance - 0.050

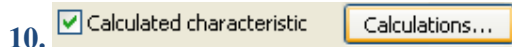




8. **Measuring instrument** there PC keyboard is always available by default. It will list all the models of instrument used (chapter 7.1). If the user has modified the channel description (chapter 7.3) in case there are several identical instruments used, it will be listed as well.

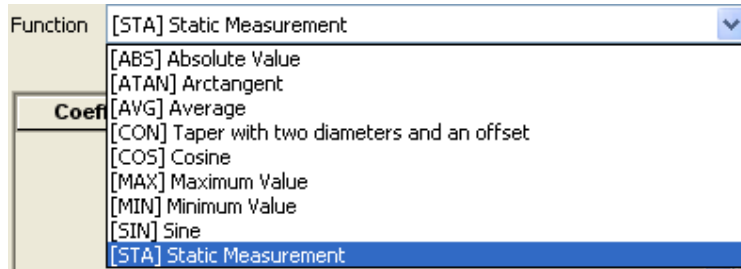


9. **Sample range** used for the XR control chart. The value has to be set between 2 and 25



10. **Calculated characteristic** allows obtaining a value from 2 or more characteristic values. For example: difference between two gauges for a diameter calculation.

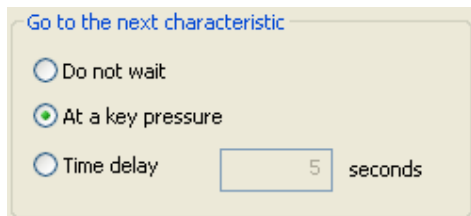
With BPI or BPX it is possible to obtain direct calculation between probes as well as minimum or maximum functions



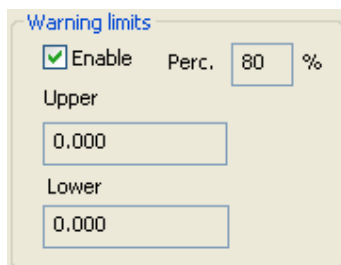
list of calculated function available.



11. **Master** value of the master if a zeroing process is used at the beginning of the measurement procedure. The master can be a gage block or a reference part.
Zero (not activated)



12. **Go to the next characteristic** defines how to go from a measured characteristic to the next characteristic to be measured



13. **Warning limits** when enabled, corresponds to the user-specified percentage of the total tolerance. The background of the measured value changes when the measured value is near the warning limits. The purpose is to prevent any significant deviation before being out of process.

To take again the example in 7. (calculations)

Nominal value	Characteristic type	Warning limits	
25.000	E- External	<input checked="" type="checkbox"/> Enable	Perc. 80 %
Tolerances		Upper	25.085
Upper	<input type="checkbox"/> Relative values	Lower	24.965
25.100	<input type="checkbox"/> Upper unilateral		
Lower	<input type="checkbox"/> Lower unilateral		
24.950			

Acceptability

Enable Control

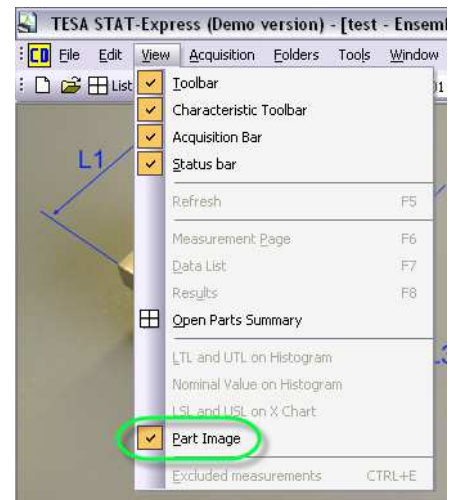
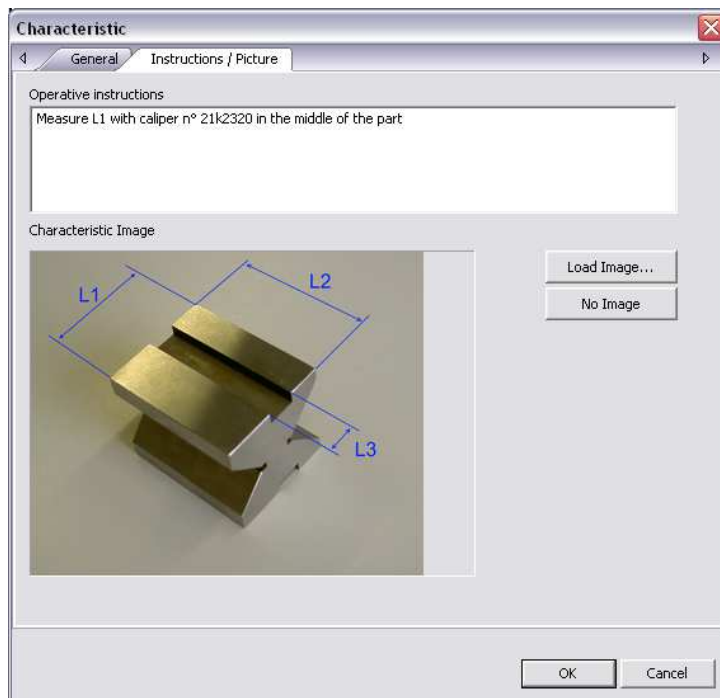
2.0 times the tolerance

14. **Acceptability** a warning window will pop up in case of a outlier value, which can happen when there is a mishandling for instance.

15. Enter deviation values
Enter deviation values activated when keyboard is used as input, this option define entered value in addition to the nominal value

8.1 Characteristic measurement: operative instructions and picture

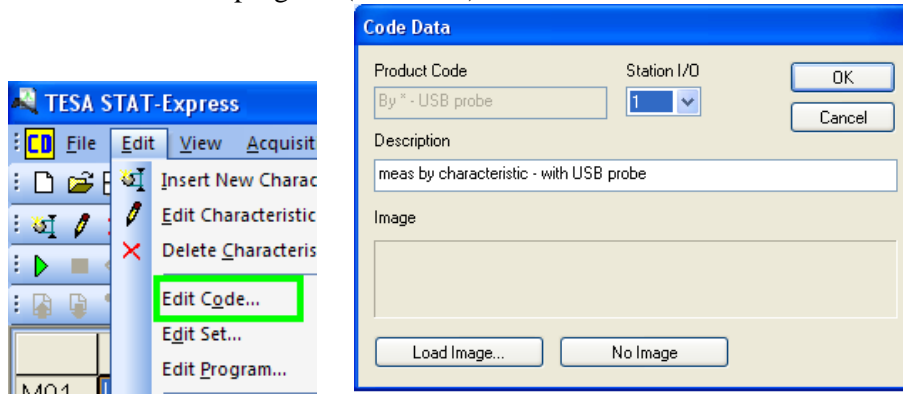
An operative instruction can be added to each characteristic: which instrument to use, which dimension of the part to measure, where and how to place the instrument for instance. This description will be displayed in the measurement tab of the software, with the characteristic. It is also possible to upload a picture.



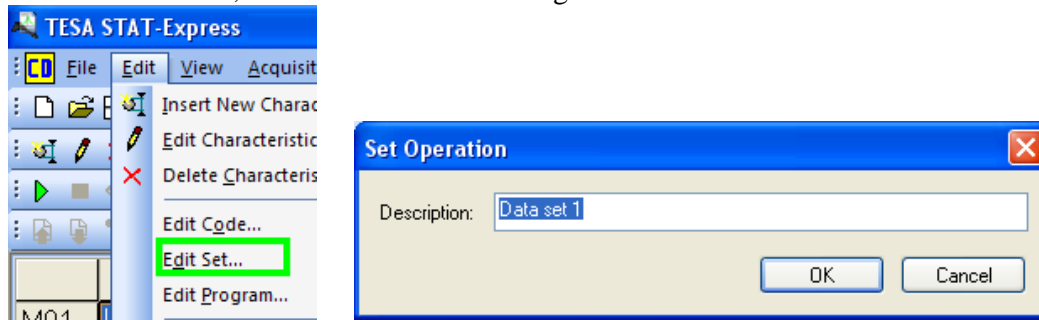
During the measurement procedure, in order to display the instructions/picture, go to "View" menu and then "Part Image".

9 Measurement Program Options

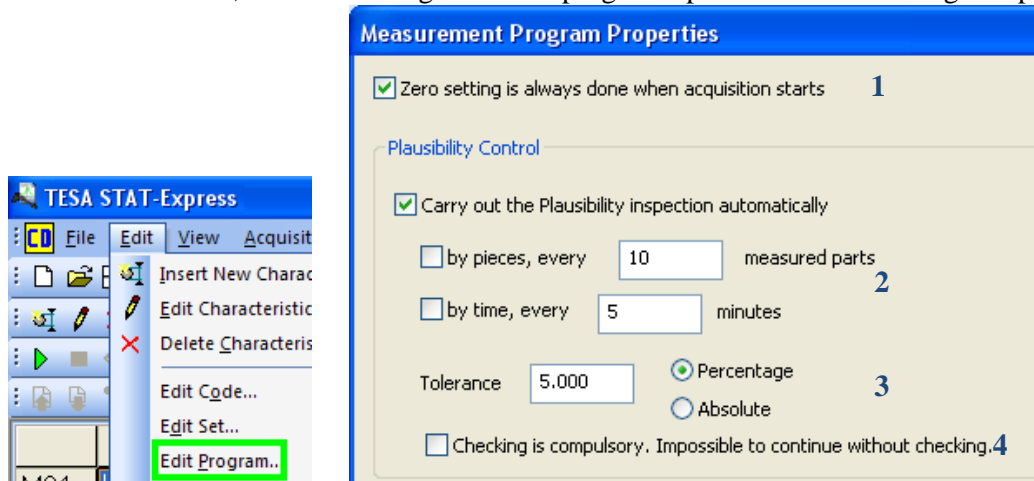
Go to "Edit" menu, then "Edit Code..." to open the first window appearing when the user creates a new measurement program (code data).



Go to "Edit" menu, then "Edit Set..." to change the name of the dataset.



Go to "Edit" menu, then "Edit Program..." to program options like zero setting and plausibility test.



1. Zero setting is always done when acquisition starts

Zero setting can be always be done if activated: a window will automatically pop out when a measurement program starts.

The plausibility control can be activated. It is useful to avoid any deviation of the measuring instrument after a period of time of measurement or after a certain number of measurements. This is done by checking against the setting standard (measure of the standard part for instance). If a deviation is confirmed, the zero setting will be required.

Carry out the Plausibility inspection automatically

by pieces, every measured parts

by time, every minutes

2. Possibility to set the plausibility inspection after a certain time (in minutes) or after a certain number of measured parts.

Tolerance Percentage
 Absolute

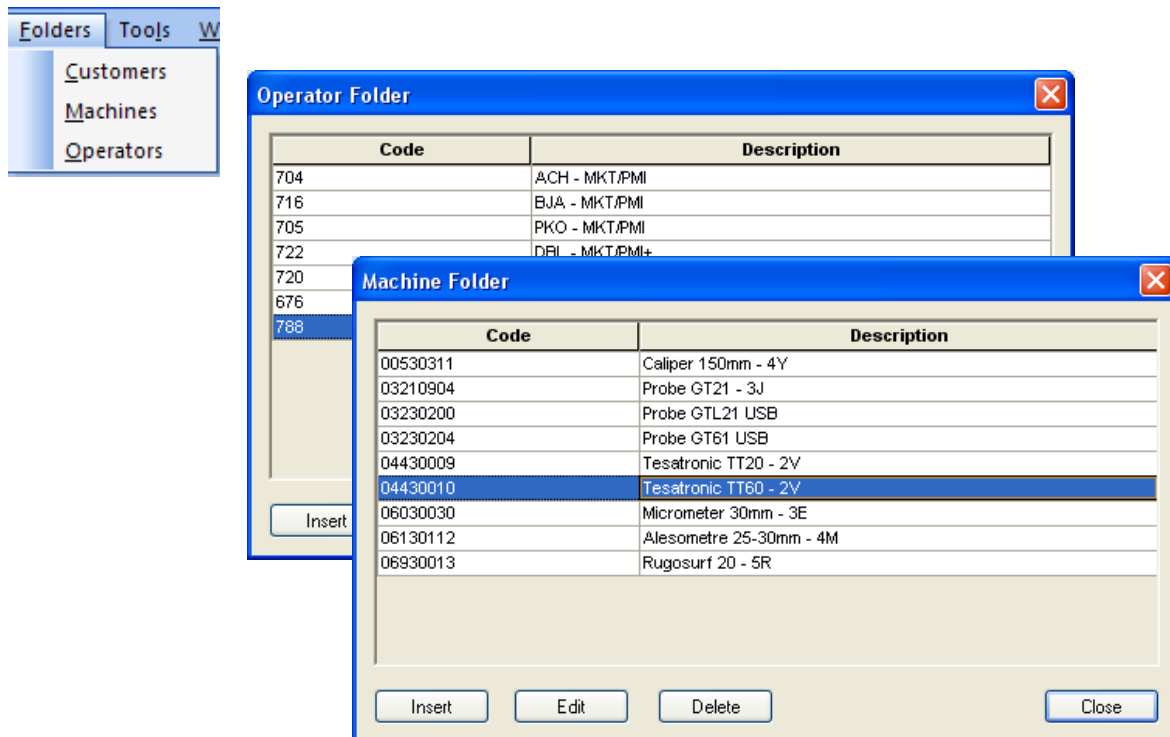
3. A message appears if a measured value is out of the set tolerance, which can be expressed either in percentage or an absolute value.

4. Checking is compulsory. Impossible to continue without checking.

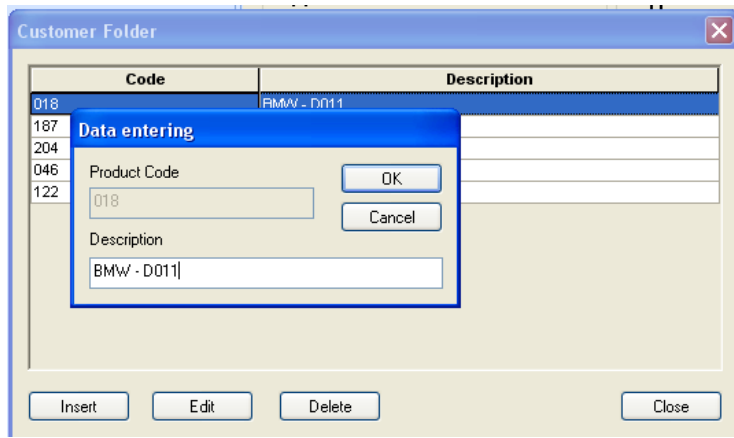
If activated, there is no possibility to by-pass the plausibility checking, the measure of the standard (reference workpiece) must be done.

10 Folder and Acquisition menus

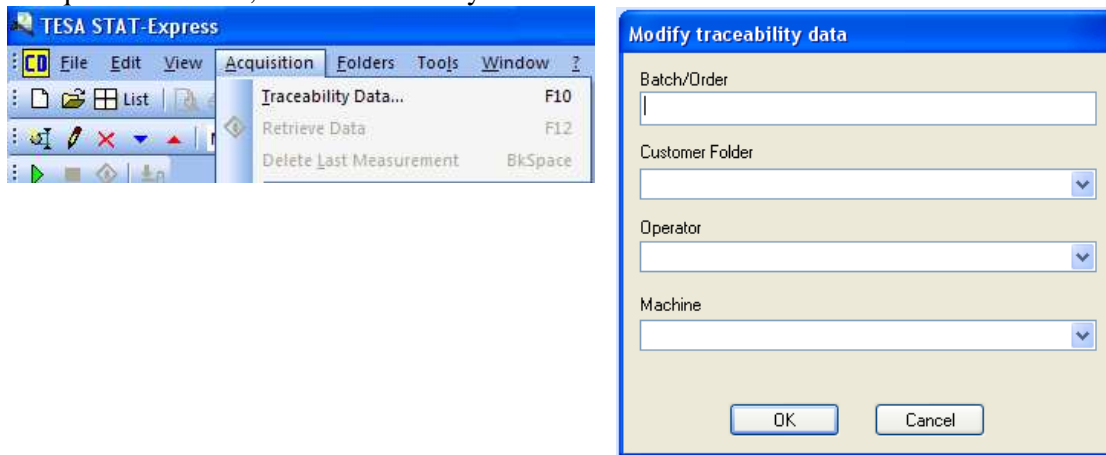
The “Folder” menu allows creating a database about the customer, the machine, the operator. This is part of the traceability data. All data entered are saved and available as database for all the measurement programs.



Click on “Insert” to create a new data entry and insert the code and description:



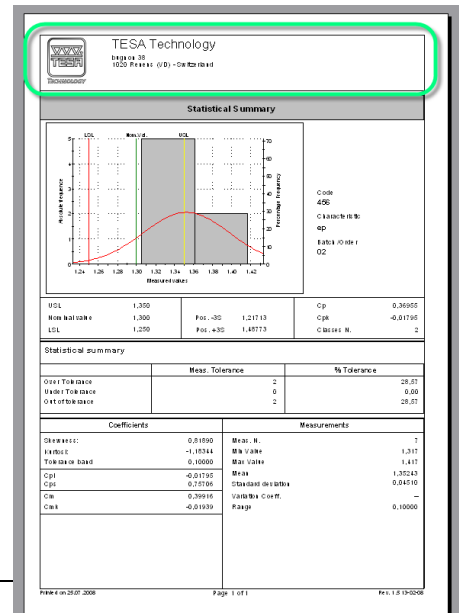
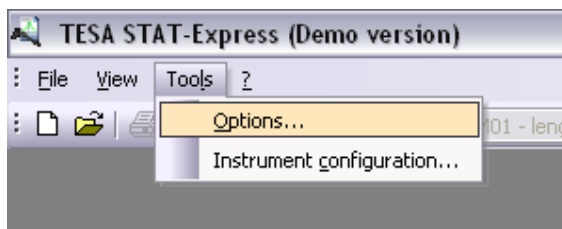
The “Acquisition” menu defines the traceability data of a measurement program. Go to “Acquisition” menu, then “Traceability Data...”

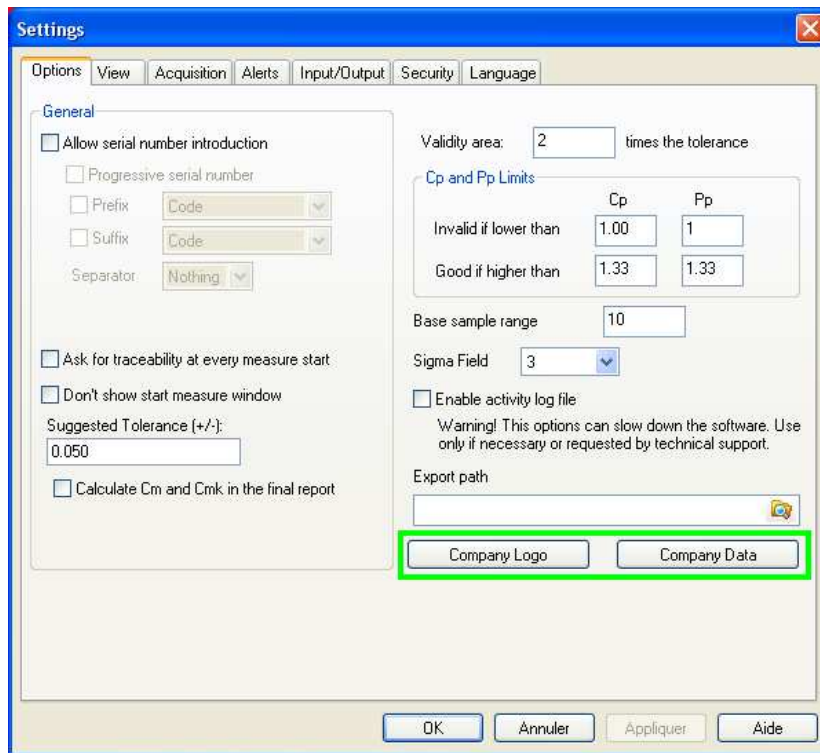


The customer, operator and machine data can be chosen in the drop list, which contents comes from the database created in the “Folder” menu.

11 Report Contents - corporate information

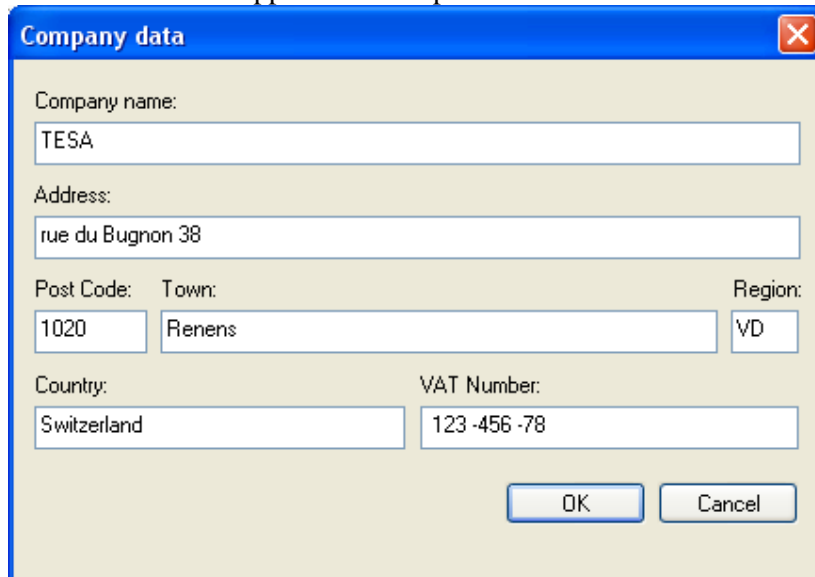
It is possible to include corporate information that will be displayed as the headline of the report. Go to "Tools" menu, then "Options...", then “Options” tab of the “Settings” window:





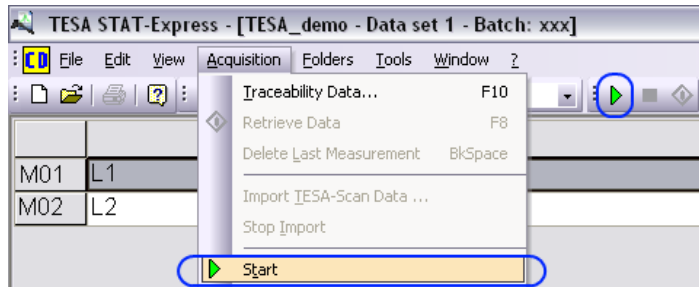
A company logo in *.jpeg or *.bmp format can be uploaded by clicking on “Company Logo” button.

The “Company data” window will appear by clicking on “Company Data”: contact details can be filled in and it will appear on the report.



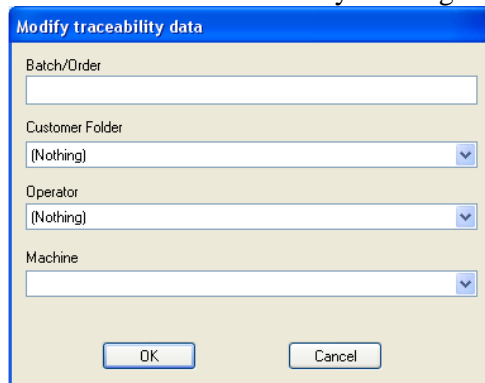
12 Measurement Acquisition

Once a measurement program has been defined, go to “Acquisition” menu, then “Start” or click on the green arrow button.

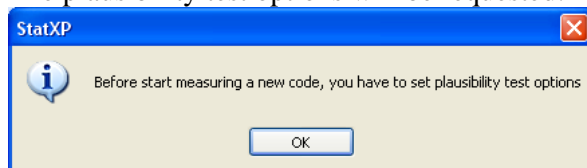


The “Modify traceability data” window appears:

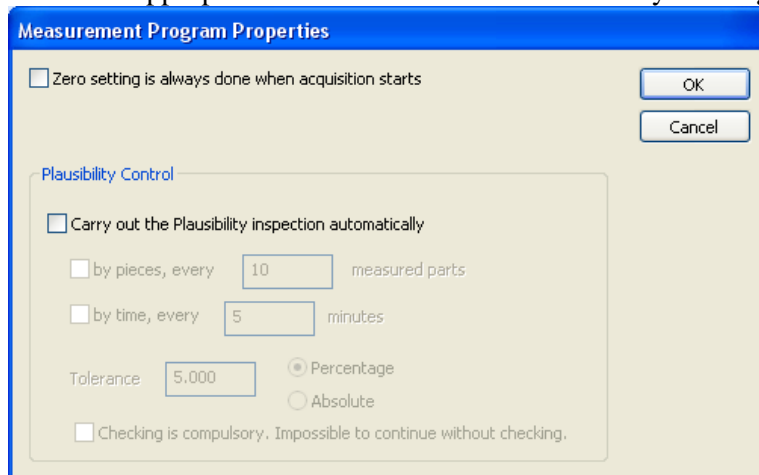
Fill in the appropriate traceability information needed: the Batch/Order information filed has to be filled in at least. Confirm by clicking on OK.



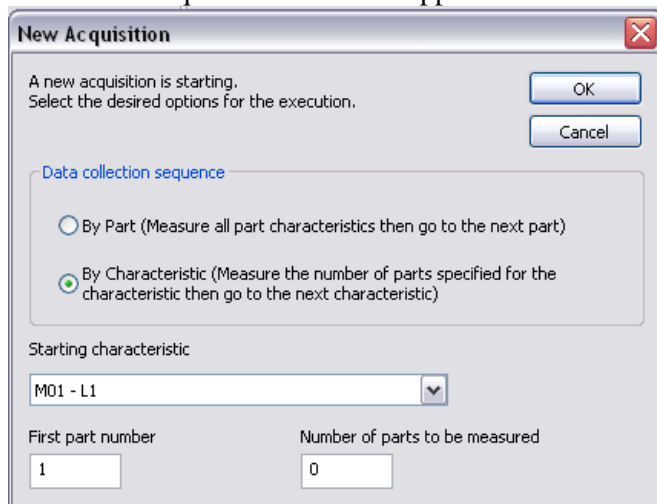
The plausibility test options will be requested:



Click on OK, the “Measurement Program Properties” appears (refer to chapter 9 for details): Fill in the appropriate information needed. Confirm by clicking on OK.



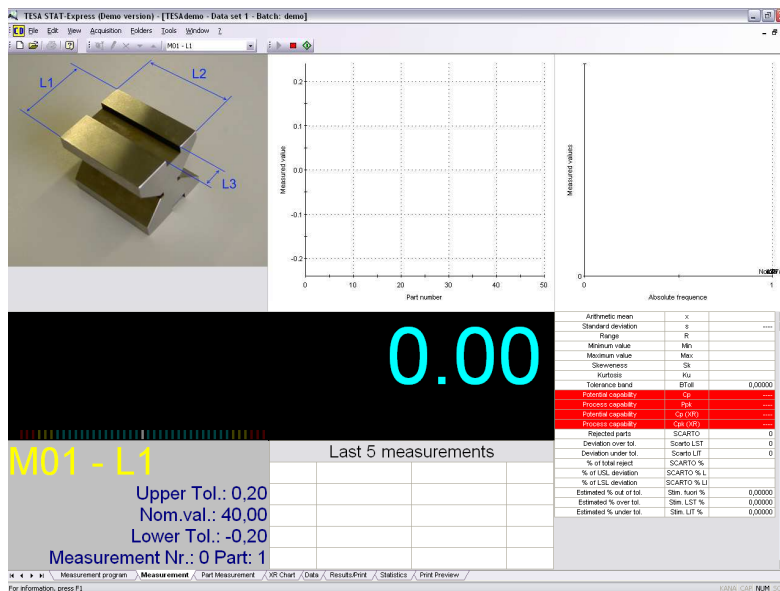
The “New Acquisition” window appears:



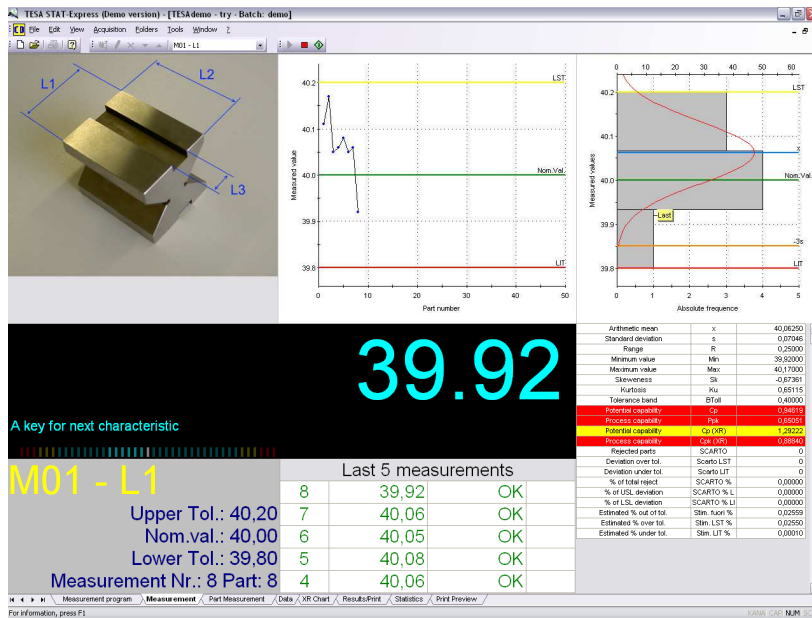
Both acquisitions by part and by characteristic are possible, except when inductive probes are used. In this case, it is only possible to measure by part.

- Measuring “by part” : all characteristics of one part are measured before moving to the next part.
- Measuring “by characteristic”, the same characteristic of all the parts has to be measured before moving to the next characteristic.

Click on OK. The "Measurement" tab is displayed.

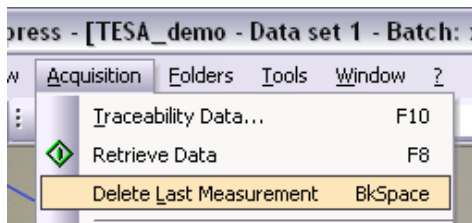


In this tab the all statistical data and control charts are displayed in real time. The last 5 measurements values are displayed.



Values are color-coded and a value within tolerances is shown by “OK”, if not, the background will be red-color.

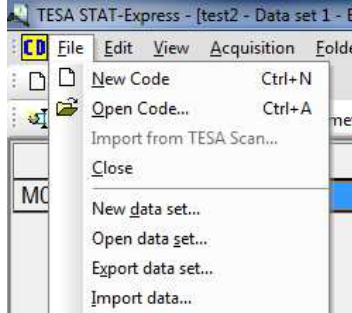
It is only possible to delete the current measurement. To do so, go to “Acquisition” menu, then “Delete Last Measurement”, or alternatively, press on Backspace key.



Note: Only the current measured value can be deleted to warranty quality reporting and avoid manipulated data.

13 Data Set : New / Open / Export

A measurement code is composed of a list of characteristics to be measured. Within each code, it is possible to define different data sets which differ by their description, production lot, date and operator for instance.



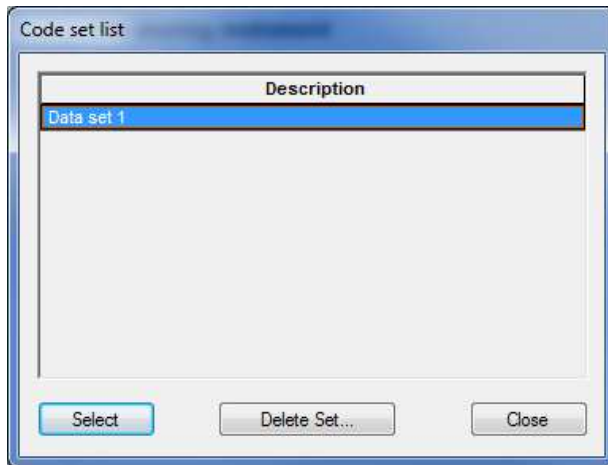
Go to “File” menu, then “New data set...” to create a new data set.



Enter a description and click on “OK”.

StatExpress will create a new empty “Data” tab.

Go to “File” menu, then “Open data set...” to display the list of measurement sets available within a measurement code. It is possible to manage the data set: add measures into an existing data set or to delete a data set which is not valid:



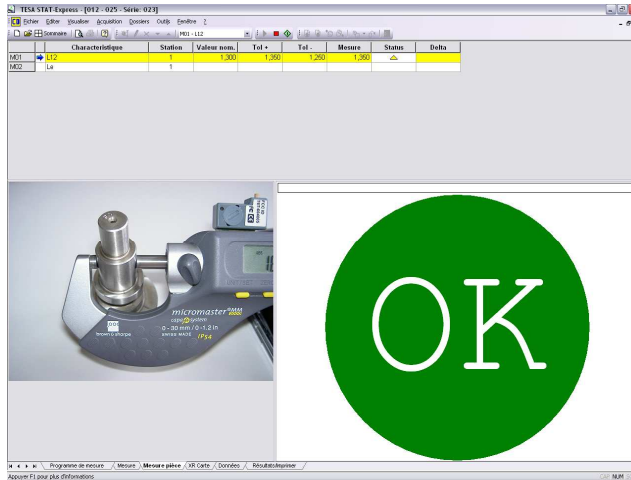
Go to “File” menu, then “Export data set” to export the data into a *CSV file.

	A	B	C	D	E	F	G	H	I
1	Characteristic	Value:	Data/time	Part	Lot	Machine	Customer Folder	Operator	Serial Nr.
2	M01 - External diameter	50.050	28/09/2012 08:58		1 O-123456				
3	M01 - External diameter	37.500	28/09/2012 08:59		2 O-123456				
4									
5									

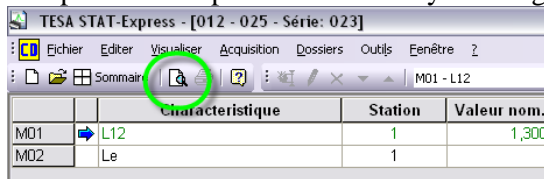
14 Measurement by Part Tab

This tab is used as a replacement of the “Measurement” tab whenever all characteristics of the same part are measured before moving to the next part. If all measured characteristics of the part are within the tolerances, the part is classified as “OK” and shown with a classification logo.




The characteristic to be measured is indicated by a blue arrow next to the characteristic (M01, M02...).



A report of each part can be seen by clicking on “Print preview” button.



The report contains the part number, overall part classification and list of all characteristic values.

 TESA					
Rapport de pièce					
Code	012	 OK GOOD			
Lot	023				
Numéro de pièce	68				
Caractéristique	Station		Mesure	Status	Delta
L12	1	LTS	1,350	1,300	OK
		Valeur nominale	1,300		
		LT1	1,250		
Le	1	LTS	0,050	0,020	OK
		Valeur nominale	0,000		
		LT1	-0,050		

15 XR Chart Tab

A X-R control chart is available in the “XR chart” tab, showing the mean value and the range value in real time.

Statistical data and Capability process data are also available:

Arithmetic mean	X
Standard deviation	s
Mean range	R
Minimum value	Min
Maximum value	Max
Potential capability	Cp
Process capability	Cpk

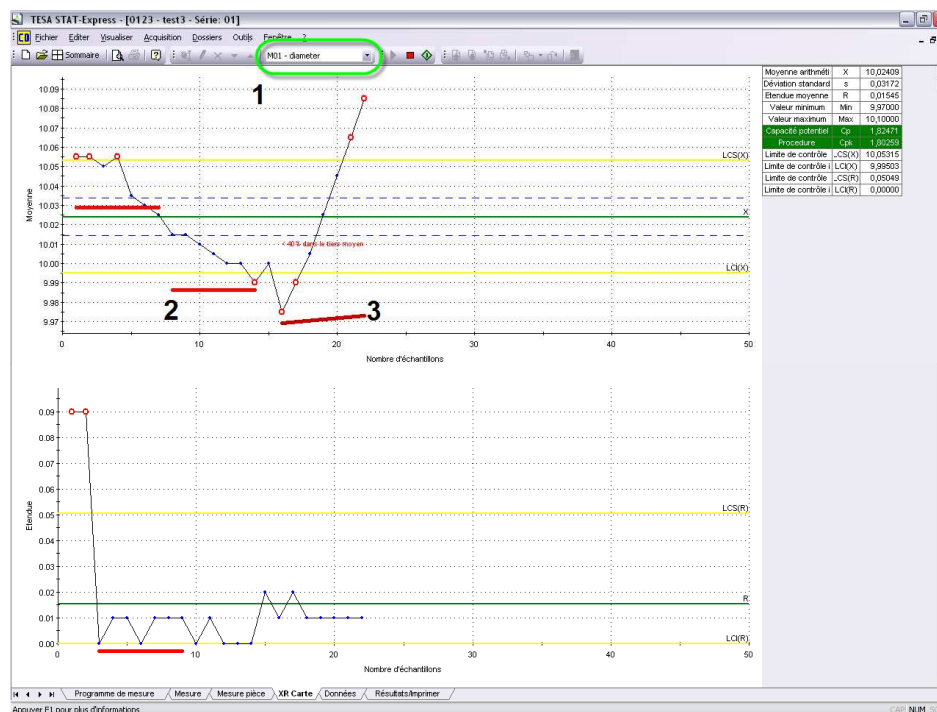
Cp and Cpk are process capability indicators.

Cp is the process capability indicator. It measures the variation (how close are the measured values).

Cpk is the process capability index. It measures the centred distribution (how close the measured values are to the average performance or how close a process is running to its specification limits)

The larger the Cpk index, the less likely it will be outside the specifications, typically a Cpk of 1.33 [4 sigma] or higher is required.

Cpk =0.5	the process is at the limits
Cpk =1	the process is just nearly at the limits
Cpk =2	the process width can grow twice before reaching the limits
Cpk =3	the process width can grow 3 times before reaching the limits



1. Select the characteristic to display
2. Run warning: when more than “x” values are over upper control limit or below the lower control limit.
3. Trend warning: when more than “x” subsequent values are increasing or decreasing.

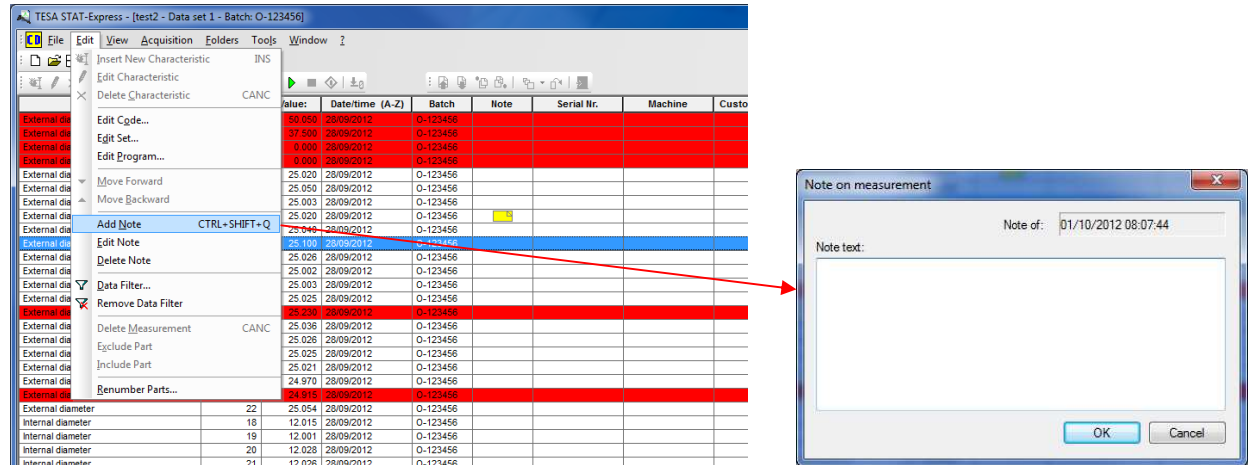
Warnings parameters can be set and enabled in the Options (see chapter 19).

To print the XR control chart, click on "print preview" button to see the report.

16 Data Tab

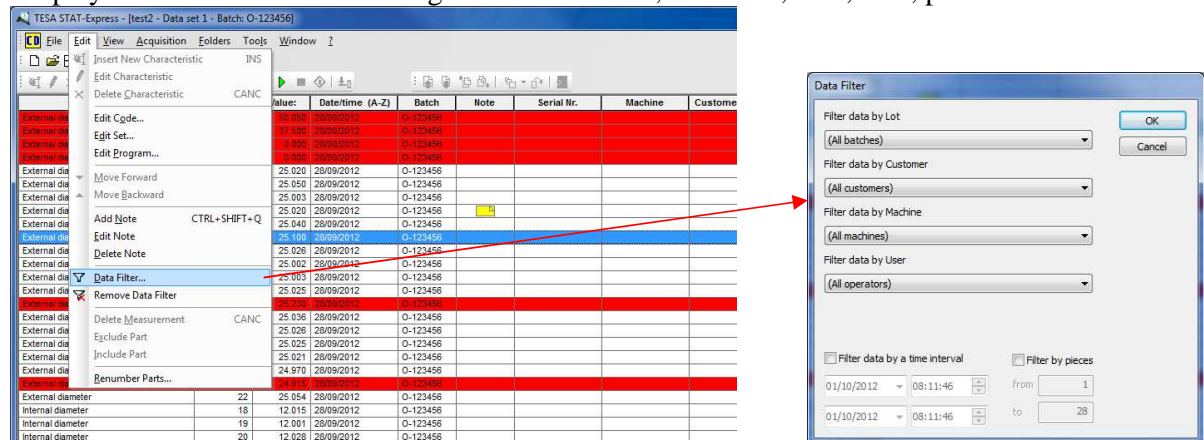
All measurements are listed in the Data tab with additional information such as batch number, serial number, operator etc.

A note can be added to each measured value, which can include for instance information about tooling machine settings, or modification on the production process. Select the measure and click on "Edit" menu, then "Add Note".



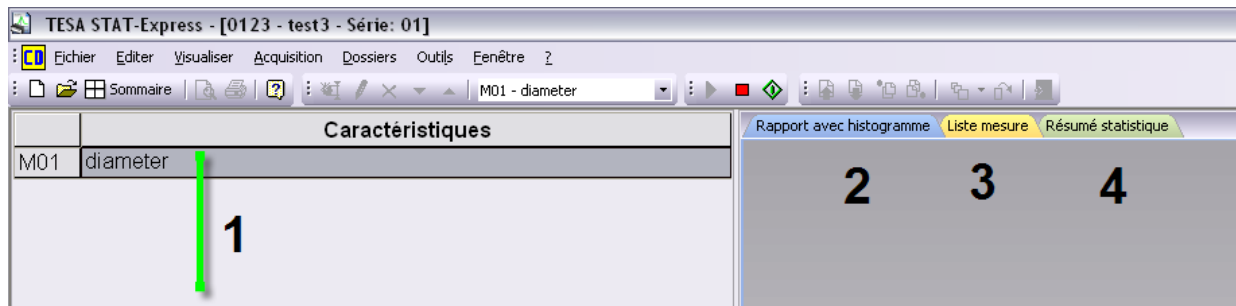
Notes available are indicated by a yellow post it icon in the "Note" column.

Displayed data can be filtered using filters such as lot, customer, user, date, part number...



The resulting list can be printed using "print preview" button.

17 Results / Print Tab






1. List of characteristics

Reports are available in 3 formats.

2. Detailed report for a selected characteristic
To display the report, double click on the characteristic
3. Full list of measured data
4. Statistical summary, list of all characteristics with main results.

The report toolbar  has the following functionalities:

-  Previous page / Next Page
-  First page / Last Page
-  Zoom / Export print

Note: the layout and contents of a report cannot be altered.

18 Multi session mode

Sometimes it can be useful to work with several measurement programs (measurement codes) simultaneously.

The multisession window displays all measurement codes in the same window.



Click on "List" button

All opened measurement code will be displayed. Up to 16 measurement codes can be displayed.



To have a detailed display of a code, double click on the code or use the zoom icon on the top left corner of each code.

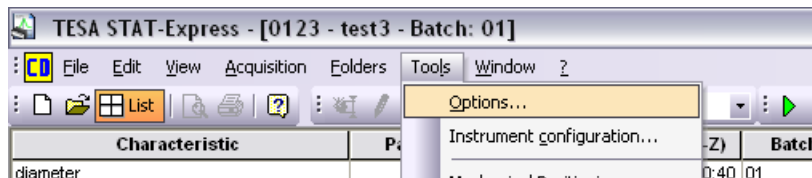
Each field code has to be activated separately in order to take measurements. Use the green arrow on the top left corner of the code.

In order to have codes working simultaneously, they must use different instruments.

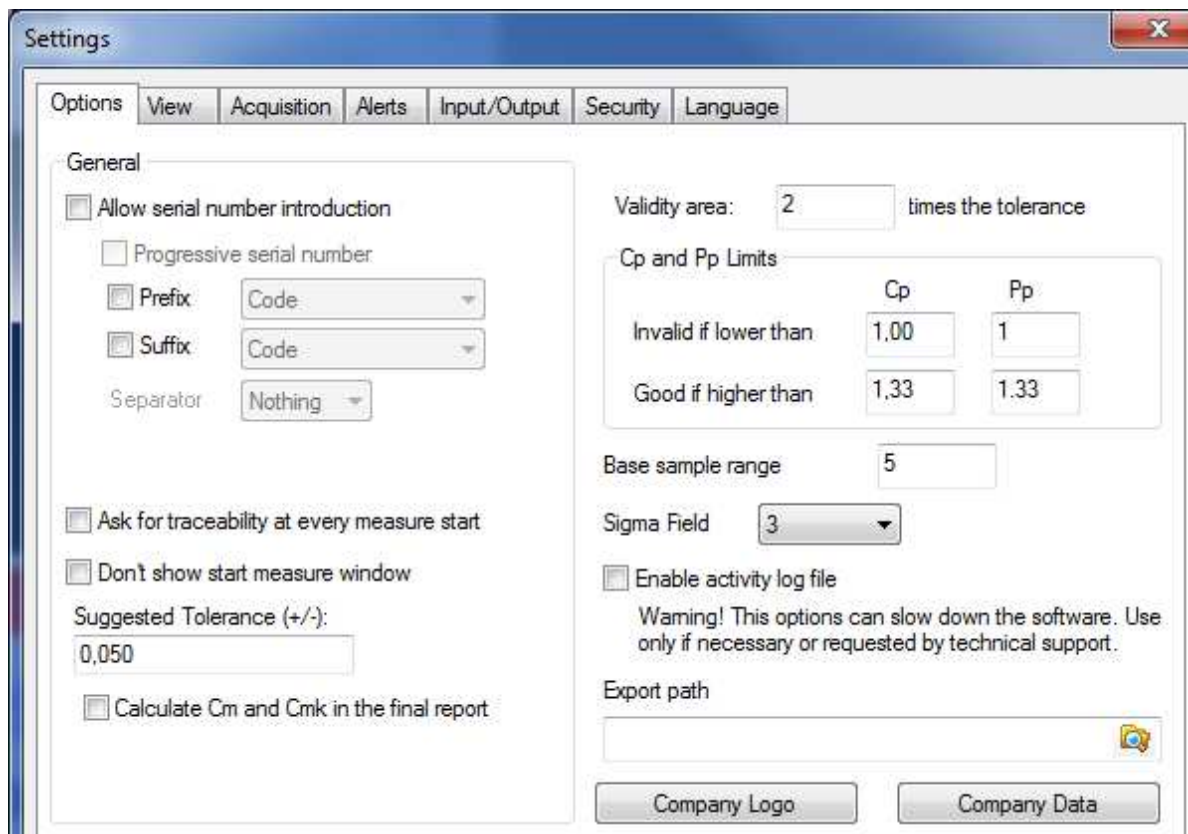
The multi session option can also be disabled in the Options of StatExpress (see chapter 19)

19 Options of StatExpress

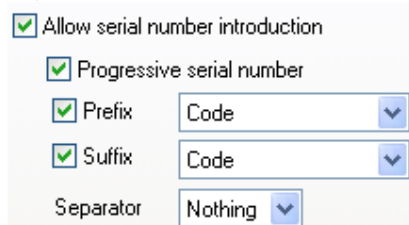
Go to "Tools" menu, then "Options..." to access the default setting of StatExpress.



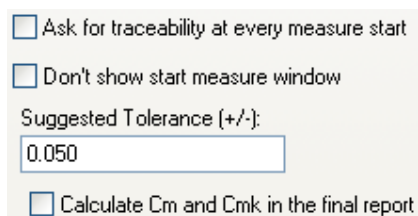
1. Option Tab



1a) General



Enables insertion of a serial number when another part is measured
Additional information like prefix or suffix information (code, data set or lot) can be defined.



Traceability information requirement at start of each measurement can be activated.

Suggested tolerances defaults values can be added

Calculation of Cm and Cmk can be shown in the report.

Cm is the machine capability indicator.

Cmk is the machine capability index


1b) Statistical settings

Validity area: times the tolerance

Cp and Pp Limits

	Cp	Pp
Invalid if lower than	<input type="text" value="1.00"/>	<input type="text" value="1"/>
Good if higher than	<input type="text" value="1.33"/>	<input type="text" value="1.33"/>

Base sample range

Sigma Field 

Possibility to specify Cp and Pp limit values.
Sampling range can be specified.


Sigma field can be chosen between 1 and 6. It will be applied to all characteristics

1c) Log file and Company Logo and Data

Enable activity log file

Warning! This options can slow down the software. Use only if necessary or requested by technical support.

Export path



Log file can be useful as a troubleshooting tool

Company logo and data (address, phone...) can be added and will be shown in the report.

2. View Tab

Settings

Options View Acquisition Alerts Input/Output Security Language

Show absolute values for tolerances

Use different colours for warning limits

Show a message at the end of the part measurement

Show XR Chart page

Show Results/Print page

Show Measured data page

Attributes check

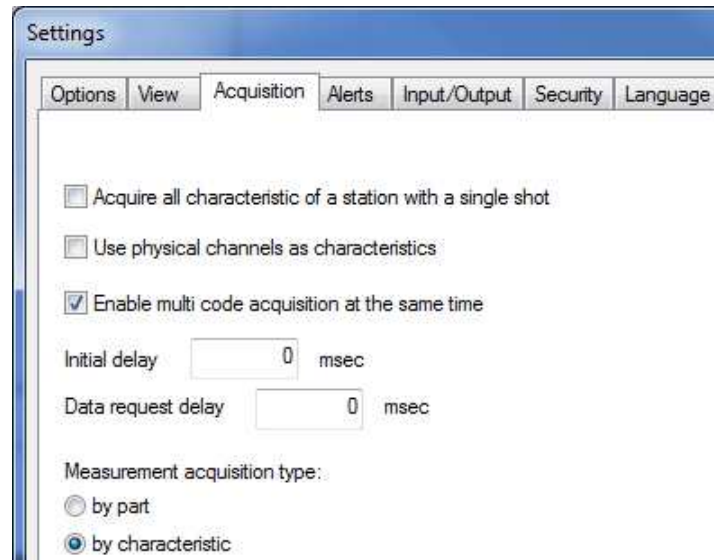
Description for "OK"

Description for "NOT"

First dataset name

Viewing and display options are available in this tab

3. Acquisition Tab



Acquisition options are available in this tab

Acquire all characteristic of a station with a single shot

When activated, data from all instrument from the same station will be transferred simultaneously

Use physical channels as characteristics

When activated, possibility to use physical channels as characteristics

Enable multi code acquisition at the same time

Initial delay msec

Data request delay msec

When activated, possibility to work simultaneously with several measurement programs.

Measurement acquisition type:

by part

by characteristic

When activated, the acquisition type by default will be by part or by characteristic (except when working with inductive probes: the acquisition is always by part).

The functionality below is for TLC connector allowing bi-directional communication:

Only for TLC-TWIN transceiver

- Show data received message on the gage display
- Show value classification message on the gage display
- Remove automatically the message after some seconds

Show data received message on the gage display

When activated, after having sent a value from the instrument, « REC » message will appear on the display of the instrument to indicate that the data has been received by the computer.

Show value classification message on the gage display

When activated, after having sent a value from the instrument:

« PASS » message will appear on the display of the instrument to indicate that the value is within the tolerances,

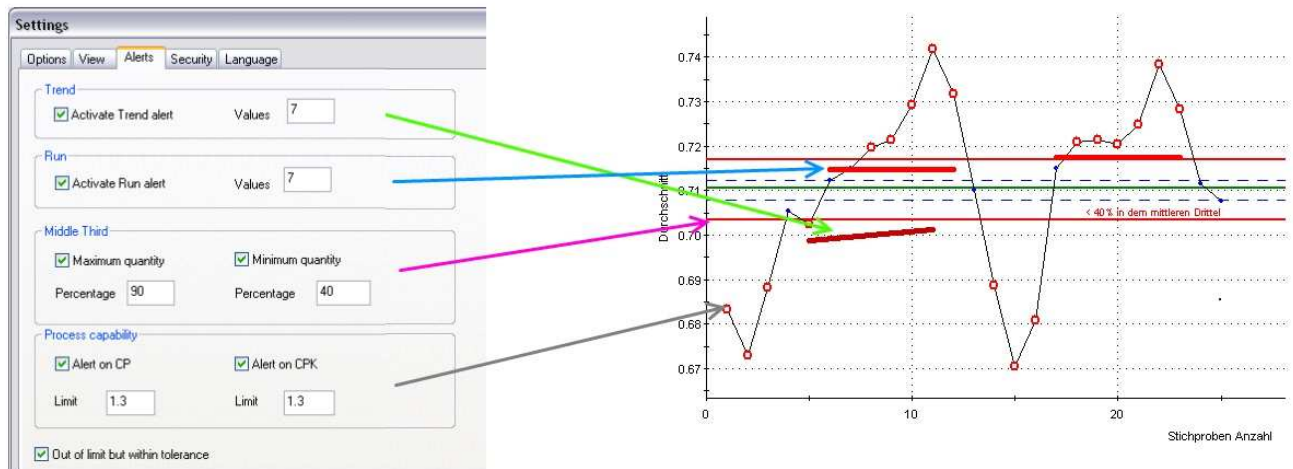
« FAIL » message will appear on the display of the instrument to indicate that the value is out of the tolerances.

Remove automatically the message after some seconds

When activated, the “REC”, “PASS” or “FAIL” message automatically disappear from the display after a few seconds.

4. Alerts Tab

Warning options such as trend, run, process capability can be defined



Trend and run value is selectable between 7 and 25

5. Input / Output

Options to set Output and Input signals with BPI probe interface

Options View Acquisition Alerts **Input/Output** Security Language

Stat-Express uses Input / Output signals to manage and to be notified from external devices.

Select what Input/output signals are connected to the many I/O options available on STAT-Express

Input	Output
START1 - Data request on program 1 -> <<Not used>>	READY - Ready to measure -> <<Not used>>
START2 - Data request on program 2 -> <<Not used>>	ALARM - Alarm/Error indicator -> <<Not used>>
START3 - Data request on program 3 -> <<Not used>>	END/CYCLE - System -> <<Not used>>
START4 - Data request on program 4 -> <<Not used>>	PROBE REQ - Probe measuring request -> <<Not used>>
PLT - Plausibility test request -> <<Not used>>	MASTER REQ - Plausibility -> <<Not used>>
ANNULL - Delete last data request -> <<Not used>>	REMACH - Remachering (Yellow) -> <<Not used>>
	GOOD - Good (Green lamp) -> <<Not used>>
	REJECTED - Reject (Red) -> <<Not used>>

Selected I/O profile: [] [New...]

Enable I/O management

6. Security

Settings

Options View Alerts **Security** Language

Enable administrator lock

administrator password: [●●●●]

Gives the possibility to protect functionalities with an administrator password

The administrator lock will restrict access to:

- Creation, modification and deletion of characteristics
- Settings of measurement options (plausibility test and zero setting)
- Access to the StatExpress options
- Deletion of measurement sets
- Modification of measurement code

7. Language

There are 6 languages available. Close and reopen the software to implement the change of language (see chapter 4).



20 Save and Exit

To stop a measure process, click on the stop button



To quit StatExpress click on "File" menu, then "Exit". Settings and measurement values are automatically saved into a database located in the StatExpress folder.