Minitab 15
Statistical Software
™

Unleash the Wisdom of Your Data

The World Trusts Minitab for Quality

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Elan Pharmaceutical Technologies
ExxonMobil
Ford Motor Company
General Electric
Goodyear
Hewlett-Packard
Honeywell International
International Paper
ITT Industries
JPMorgan Chase & Co.
Leading Six Sigma Consultants
LG
Monsanto
Multibase
Multibras Eletrodomesticos SA
Nokia
Paturle Aciers
Polaroid
PricewaterhouseCoopers
Reckitt & Colman
Rhodia
Samsung Aerospace
Seagate
Siebe
Toshiba
Whirlpool

A powerful statistical package is critical to the success of Six Sigma and other data-driven quality improvement programs. When you measure and analyze your processes, you gain the intelligence you need to increase your bottom line and radically transform the way you do business.

Minitab® Statistical Software helps you draw valuable insight from your data and makes it easy to illustrate and interpret the results of your analyses. Its comprehensive collection of methods and intuitive interface has made it the package of choice for thousands of companies in more than 80 countries worldwide.

Minitab 15 contains nearly 50 enhancements, and includes access to:

- FREE technical support from our highly skilled specialists.

- Exceptional training delivered in public and on site courses, via e-learning, and through personal mentoring.

- Outstanding customer service from a knowledgeable sales team that understands quality improvement and puts your satisfaction first.

- Flexible licensing options and great volume pricing.

Fully translated versions of Minitab are also available in Japanese, Korean, French, German, and Simplified Chinese.

To learn more, visit www.minitab.com/minitab

Minitab Statistical Software
Capabilities List/What's New

▶ = New or enhanced in Release 15

Ease of Use
- Menus and commands organized logically, matching textbooks and training manuals
- Project Manager: organizes analysis
- ▶ ReportPad™: report generator
- ▶ Clear, comprehensive Help system
- ▶ StatGuide™: explains output
- Online tutorials
- ▶ Glossary of statistical terms
- ▶ Reference of methods and formulas used in calculations
- Smart Dialog Boxes™: remember recent settings
- ▶ More than 300 real-world practice data sets
- ▶ Convenient desktop access to maintenance updates

Data and File Management
- Project files include all parts of analysis
- Multiple worksheets, with up to 4000 columns and unlimited rows in each
- Spreadsheet-like Data windows
- ▶ Easy copy/paste with Microsoft Excel
- ▶ Assign formulas to columns; columns update when data change
- ▶ Multiple Undo/Redo in the Data window
- ▶ Import/export: Excel, Text, CSV (Comma delimited), XML Spreadsheet, HTML, etc.
- ODBC querying
- ▶ Currency, percentage and date/time formats
- Data manipulation: merge, subset, sort, transpose, change data type
- Matrix functions
- ▶ Password protection
- ▶ Calculator with more than 100 functions for manipulations, calculations, and transformations of numeric, date/time, and text data

General Statistics
- ▶ Descriptive statistics
- Confidence intervals, one- and two-sample t-tests, paired t-tests
- ▶ One- and two-sample tests and confidence intervals for a Poisson rate
- Confidence intervals, one- and two-proportion tests
- Correlation and covariance
- Normality test
- Test for equal variances
- ▶ One-sample variance test
- Goodness-of-fit test for Poisson

Graphics
- ▶ State-of-the-art graphics engine
- Pictorial gallery and streamlined dialog boxes simplify graph creation
- Interactively edit attributes (axes, scale, etc.) and recreate custom graphs with new data
- Easily place multiple graphs on one page
- Display data from different variables or by groups in panels on the same page
- Information display tools: tooltips, crosshairs, plant flags
- Graphs can update as data change
- Built-in graphs: available with a single click
- ▶ Scatterplots, matrix plots, boxplots, dotplots, histograms, charts, time series plots
- ▶ Line plots
- ▶ Contour plots and rotating 3D graphs
- ▶ Probability plots, probability distribution plots
- ▶ Interval plots, individual value plots, area graphs, ECDF plots
- Numerous special-purpose graphs
- OLE: edit Minitab graphs in other applications
- Graph brushing
- Save as TIF, JPEG, PNG, BMP, GIF, enhanced metafile

Regression Analysis
- Linear regression
- Polynomial regression
- Logistic regression
- Partial least squares (PLS)
- Stepwise and best subsets
- Residual plots
- ▶ Easily create indicator variables
- Confidence and prediction intervals

Analysis of Variance
- ANOVA
- General linear model (GLM)
- Unbalanced nested designs
- MANOVA
- Fully nested designs
- Analysis of means
- Multiple comparisons
- Residual, main effects, and interaction plots

Statistical Process Control
- Run chart
- Pareto chart
- Fishbone diagram
- ▶ Variables control charts: XBar, R, S, XBar-R, XBar-S, I, MR, I-MR, Z-MR, I-MR-R/S, zone
- ▶ Attributes control charts: P, NP, C, U
- ▶ Time-weighted control charts: MA, EWMA, CUSUM
- ▶ Multivariate control charts: T^2, generalized variance, MEWMA
- Custom tests for special causes

- Historical/shift-in-process charts
- ▶ Individual distribution identification
- Box-Cox transformation
- ▶ Johnson transformation
- ▶ Process capability: normal, non-normal, attribute and batch
- ▶ Process capability for multiple variables
- ▶ Process Capability Sixpack™
- Multi-Vari Charts
- Symmetry plot
- ▶ Acceptance sampling

Measurement Systems Analysis
- ▶ Data collection worksheet
- ▶ Gage R&R: ANOVA and XBar-R methods
- Nested Gage R&R
- Attribute Gage Study – AIAG analytic method
- Attribute agreement analysis
- Gage linearity and bias
- Gage run chart
- ▶ Type 1 Gage Study (single part)
- ▶ Evaluate misclassification probabilities

Design of Experiments
- Two-level factorial designs
- General full factorial designs
- Plackett-Burman designs
- ▶ Response surface designs
- Mixture designs
- ▶ D-optimal and distance-based designs
- Taguchi designs
- User-specified designs
- ▶ Analysis of variability for factorial designs
- Response prediction
- Botched runs
- Mixture plots
- Overlaid contour plot
- Response optimization
- ▶ Plots: residual, main effects, interaction, cube, contour, surface and wireframe
- ▶ Effects plots: normal, half-normal, and Pareto

Reliability/Survival Analysis
- Parametric and nonparametric distribution analysis
- Goodness-of-fit measures
- ML and least squares estimates
- Exact failure, right-, left-, and interval-censored data
- Accelerated life testing
- Regression with life data
- Reliability test plans
- Threshold parameter distributions
- Analysis of repairable systems
- Analysis of multiple failure modes
- Probit analysis
- Weibayes analysis

- Hypothesis tests on distribution parameters
- Plots: distribution, probability, hazard, and survival
- ▶ Warranty analysis

Power and Sample Size
- One-sample Z, t, and proportion
- Two-sample t and proportions
- One-way ANOVA, two-level factorial and Plackett-Burman
- ▶ Power (OC) curves

Multivariate Analysis
- Principal components analysis
- Factor analysis
- Discriminant analysis
- Cluster analysis
- Correspondence analysis
- ▶ Cronbach's Alpha (Item Analysis)
- ▶ Biplot for principal components and factor analysis

Time Series and Forecasting
- Time series plots
- ▶ Auto-, partial auto-, and cross correlations
- ARIMA analysis
- Trend analysis
- Decomposition
- Exponential smoothing
- Winters' method
- Moving average

Nonparametrics
- Sign test
- Wilcoxon test
- Mann-Whitney test
- Kruskal-Wallis test
- Friedman test
- Runs test
- Mood's median test

Tables
- Chi-square, Fisher's exact, and other tests
- Chi-square goodness-of-fit test
- Tally

Simulation and Distributions
- ▶ Random number generator
- ▶ Density, cumulative distribution, and inverse cumulative distribution functions
- Random sampling

Macros and Customizability
- Customizable menus and toolbars
- Extensive preferences and user editable profiles
- Comprehensive command language
- Powerful macro capability
- ▶ Minitab COM-enabled automation: integrate Minitab as a behind-the-scenes engine
- ▶ MyMenu: add specialized functionality to Minitab

Features That Make Your Work Easy
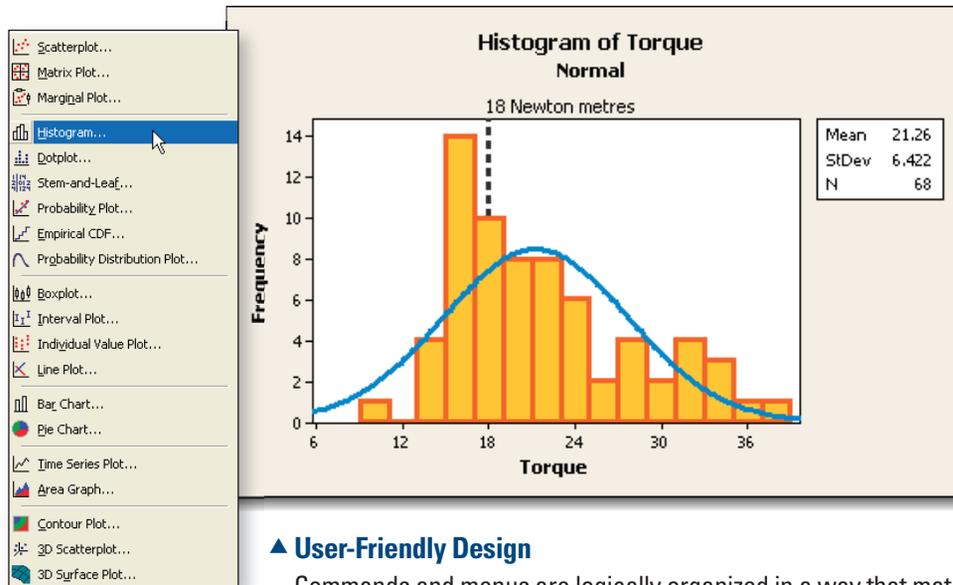
▲ **User-Friendly Design**
Commands and menus are logically organized in a way that matches textbooks and training manuals and fits how people learn and work. And because Minitab includes a comprehensive suite of statistical methods, there's no need to buy additional modules or specialty statistics packages.

Project Files
Save all the parts of your Minitab analysis in one file so you can open the project later and resume your work exactly as it was when you saved it, or even retrace your steps if necessary.

Comprehensive Data Management
Powerful file export and import, data manipulation and subsetting, and easy-to-use Data windows that work like a spreadsheet and ease the transition from spreadsheets to statistical software.

ReportPad™
Use ReportPad to create professional looking reports within Minitab. You can combine selections from your tabular and numeric output with graphics and text comments with control over font, style and color.

Built-In Guidance You Will Want To Use
Minitab's comprehensive glossary includes more than 500 terms written in clear, practical language. StatGuide™ provides easy-to-understand statistical guidance to help interpret output. Methods and Formula calculations are simple to access. The Help system explains how to use the software with complete instructions and examples. Meet Minitab, a short introductory guide, helps new users get started quickly.

"Minitab is an amazing tool for improving processes. It has helped us produce high quality baseballs that meet the specifications of one of our most admired customers – Major League Baseball."

Rodrigo Picado
Quality Manager,
Rawlings Costa Rica/
a K2 Inc. Company

Graphs that Clarify Every Step of Your Improvement Project

▼ The ability to easily lay out multiple graphs in one window.
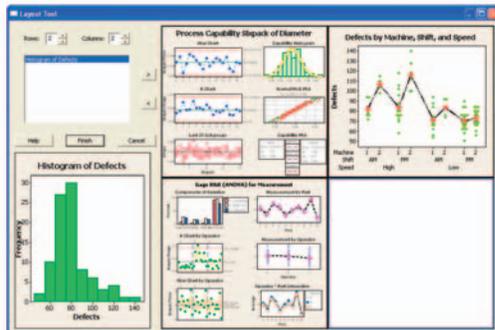
▼ An effortless method to create graphs – select the one you want from a pictorial gallery, and use data entry dialog boxes that are simplified for that graph.
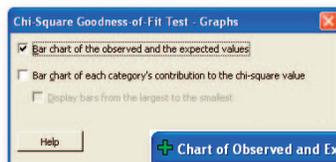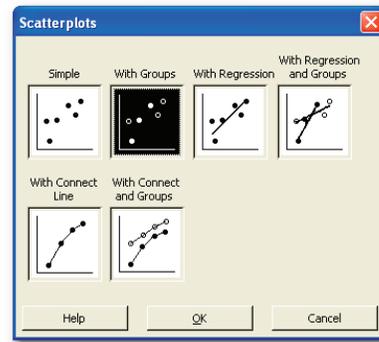
▼ Built-in graphs that you generate with a single click.
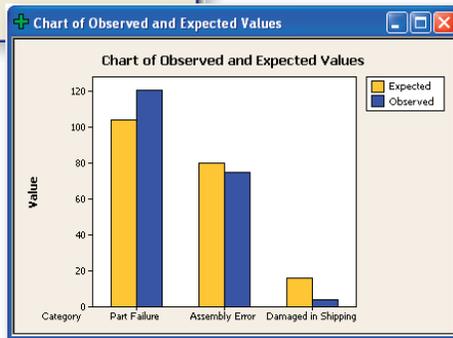
▼ Interactive graph brushing that lets you select and subset groups of points on a graph and identify common characteristics of those points.
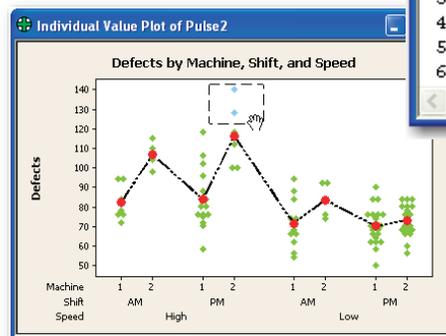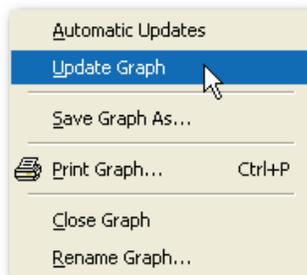
◀ A dynamic link between a graph and its worksheet that lets you automatically update the graph when data are added or changed.

Plus a fast and easy way to edit graphs once you've made them:

- Add titles, footnotes, reference lines, gridlines, and more
- Click on the aspect of the graph you want to change, and a dialog box opens that lets you modify it

"Minitab is powerful yet very user friendly, and the output graphics are superb."

Larry Walker, Reliability Engineer, Visteon Automotive Systems

The Statistical Methods You Need to Improve Your Processes

Comprehensive General Statistics

Minitab offers a complete toolkit of statistical methods, including Descriptive Statistics, Normality Tests, Hypothesis Tests, Power and Sample Size tools, and much more.

Statistical Process Control (SPC)

Analyze complex data and identify and solve process-related problems using Minitab's extensive set of SPC tools, including Pareto Charts, Variables, Attributes, and Multivariate Control Charts; and Historical/Shift-in-Process Charts.
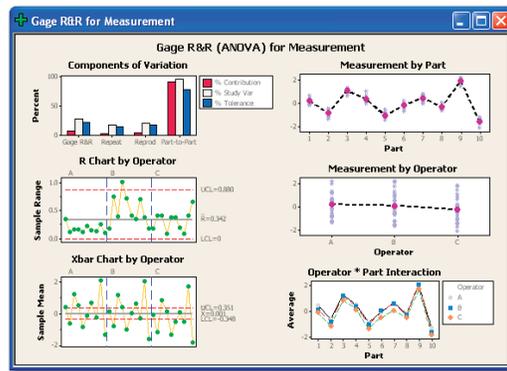
◄ **Measurement Systems**

Identify and quantify sources of variation, and assess your system's precision and accuracy with Minitab's comprehensive collection of Gage R&R tools.
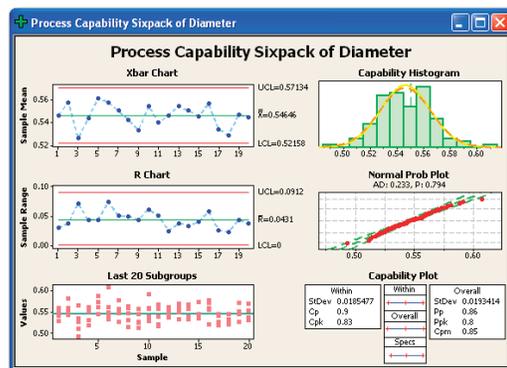
◄ **Process Capability**

Once your processes are in control, determine if they will consistently meet your specifications over time with Minitab's process capability analysis tools – including our frequently used Process Capability Sixpack.™

Design of Experiments (DOE)

Design and analyze all popular types of experiments to determine which changes to your process will have the greatest effect using Minitab's DOE toolset.

Reliability

Minitab has the tools you need to evaluate the reliability of a product or process, including the ability to deal with right-, left-, and interval-censored data, parametric and nonparametric methods, and much more.

A Company You Can Count On

Free Technical Support

Minitab users have free access to our technical support staff by phone or online – no hidden fees, no limit on the time it takes to help you. And our team of specialists is highly skilled in statistics, quality improvement, and computer systems.

Outstanding and Convenient Training Services

Develop the skills you need to harness the power of Minitab and the confidence to apply it to your own projects. Training by Minitab is designed by expert statisticians specifically for quality professionals, and is available through public courses, personal mentoring, on-site sessions, and Quality Trainer by Minitab, our e-learning service.

Exceptional Customer Service with Six Sigma Expertise

The Minitab sales team has nearly fifteen years experience working with customers implementing Six Sigma and includes an international network of representatives offering support and resources in their local language.

Minitab Online

Minitab offers a wealth of information and support on the Web, including an Answers Knowledgebase of frequently asked questions, statistical resources, free maintenance updates, product tours in multiple languages, and more.

"Of all the software companies I've ever dealt with, Minitab has the best technical support. Not only do they really know Minitab, they know statistics."

Mark Loch

"I can state, categorically, that Minitab training was the single most beneficial class I have taken in connection with Six Sigma."

Terry Smith
Six Sigma Black Belt
Ford/Easycare

Minitab ►™

QUALITY. ANALYSIS. RESULTS.

Learn more about Minitab 15 and download a free trial version at www.minitab.com/minitab

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