NWA Quality Analyst Specifications

Control Charts

NWA Quality Analyst offers all standard SPC charts plus many special purpose charts.

Variable Control Charts

- X-bar (Mean)
- Range
- X-bar and Range
- Standard Deviation
- X-bar and Standard Deviation
- Individual Measurements
- Individual and Range
- Moving Average
- Moving Range
- Median
- Median/Individual
- Cumulative Sum (CUSUM)
- Exponentially Weighted Moving Average (EWMA)

Attribute Control Charts

- Percent Defective (p)
- Number Defective (np)
- Defects (c)
- Defects per Unit (u)

Chart Customization

- Calculate control limits automatically or enter them manually
- Automatically adjust control limits for changing subgroup size
- Create subgroups with up to 99 measurements
- Select from among five ways to handle missing data
- Derive control limits by any of three methods, including exact probability limits
- Choose up to three user-defined, independently calculated sets of control limits
- Select from four methods of calculating sigma
- Define up to 23 custom pattern rules; Western Electric rules are the default
- Shift control limits to show up to 99 process shifts per chart
- Background colors can be defined for up to three chart zones to create "Rainbow Charts."

Other Charts

- Scatter
- Run
- Normal Probability
- Quantile
- Box Plot

Process Capability Analysis

- Eight distribution types:
  - Normal
  - Skewness and Kurtosis Adjusted (Johnson)
  - Two Parameter Log Normal
  - Three Parameter Log Normal
  - Truncated Normal
  - Folded Normal
  - Weibull
  - Rayleigh
- Capability indices can be adjusted for non-normal distributions
- Bilateral and Unilateral specifications supported
- Select the indices and statistics to report
- Confidence bounds provided for capability indices
- Set histogram bars and scale automatically or manually
- Multiple variable process capability reports
- Box plots

Pareto Analysis

- Show up to 500 defect categories
- Diagram can be ranked by cost or number of defects
- Cumulative effects can be graphically displayed

Capability Indices

CAM cp	CPL	Pp
CAM cpk	Cpm	Ppk
Cm	CPU	Tz
Cmk	CR%	Zlsl
Cp	"In the Box"	Zmin
Cpk	K	Zusl

Includes Automotive Industry Action Group (AIAG) indices

Exception Reporting

Short Run Analysis

Available for all SPC charts and process capability.

Additional Data Analysis

Descriptive Statistics

- Mean
- Standard Deviation
- Coefficient of Variation
- Standard Error
- Skewness
- Kurtosis
- Moments about the Mean

Means (t) Tests

- Single Sample t-test
- Unpaired Sample t-test
- Paired Sample t-test
- Pearson Product Moment Correlation

Chi-square Analysis

- Bartlett's Chi-Square
- Difference Among Proportions
- Equal Expected Frequencies
- Unequal Expected Frequencies

Weibull (Reliability Analysis)

- Full or Censored Data
- Maximum Likelihood and Rank Regression Methods
- Includes Exponential Distribution

Non-parametrics

- Kruskal-Wallis
- Wald-Wolfowitz Runs Test

Correlation

Analyze up to 50 variables simultaneously.

Single Variable Regression/Curve Fitting

- Linear
- Power
- Exponential
- Logarithmic
- Stability Analysis

Multiple Linear Regression

Polynomial Regression

ANOVA (one-way)

Random Number Generator

- Integer or Real Data Values
- With or Without Replacement
- Uniform or Normally Distributed Data

Data Entry and Management

Complete data file creation and maintenance capability, including:

- Variable Definition
- Variable Type
- Format Control
- Target and Specification Values
- Data-Entry Masks

Data File Structure

Data tables can be up to 500 characteristics by 999,999 rows.

Database Connectivity

- Direct connectivity to Access and Excel
- ODBC connection to all major databases
- Supports user-defined SQL
- Interface to Wonderware IndustrialSQL Server*

Output

Integrated text and graphics display, user-defined layouts, JPG, PNG, BMP, and XML.

Assignable Cause / Corrective Action

Predefined Cause and Action text and *ad hoc* comments up to 65 characters assigned to any SPC point. Text and Pareto reporting.

System Requirements

NWA Quality Analyst is compatible with all major PC networks including Windows* NT* and Novell*. Runs on all 32-bit Windows platforms, including Windows 98, 2000, Me, NT, XP, and Server 2003. Compatible with Citrix and Microsoft* Terminal Services.