Q.C Manager v1.1
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Q.C. Manager is a Statistical Program Control program for the HP50 graphing calculator. The program plots variable Control Charts, Bar plot, Normal distribution plot, Relative frequency plot and Cumulative plots. Analyze variation of a manufacturing process right on your calculator, turning it into a SPC calculator. This program is good if you are taking a SPC class or would like to monitor a process in real time if control limits are already established.

Getting Started

In QCM zip file you will find QCM the library for the program and DATA which are example data that I have collected. Download QCM library to your calculator and store it in port 2, download DATA and store in HOME on your calculator. Do a warm start by pressing ON and C then type SPC press **ENTER** to get the display below.

QCM main menu is highlight bar sensitive meaning the pressing **CHOOS** or **OK** with the highlight bar at Σ**DAT,** plot type or chart type perform different actions.

Σ**DAT** Current data is displayed in this format NAME: [sample size x subgroup size] Pressing **CHOOS** will show a list of Matrix data in display.

EDIT edits data at highlight bar
TREE change directory
PURG data at highlight bar
NEW Entering the name of new data highlight bar to object: then press **LS MTRW** enter your data into the matrix where the column will be your sample size and row your subgroup size. You can enter one subgroup size then finish entering data from main menu EDIT if you choose.
CANCL return back to main menu
OK depending on where highlight bar is at OK will plot chart, plot graph, display data and edit text for current data.

μ Displays mean of the entire population of the data

σ Displays population standard deviation of the entire data

UTL Enter the Upper Tolerance Limit for the data

LTL Enter Lower Tolerance Limit for the data

Chart Type move your highlight bar here and press **CHOOS** to select from three different control chart type Xbar&R Xbar&S or MR&Individual to plot. Press **OK** to plot charts

Plot Type move highlight bar here and press **CHOOS** to select from six different plots Barplot, Normal Curve, Barplot&normal curve, Relative frequency plot, Relative frequency&Barplot, and Cumulative Frequency plot . Press **OK** to plot graph
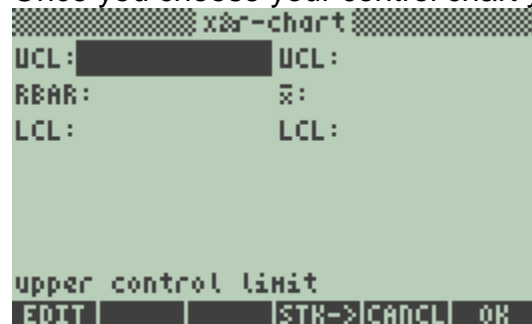
MAIN DISPLAY MENU

[EDIT] - Edit current statistical data

[CHOOS]- is Highlight sensitive. Move highlight bar to current data, chart type or plot type and press **OK** for action

[STAT]- is a quick way to access built in statistic functions. I also added QCM output, I think the outputs are straight forward except for %UTL and %LTL which, are the percent that is less than and greater than the Normal distribution 3sigma limits.

CONTROL CHARTS

Once you choose your control chart you will be greeted by this prompt

 you can key in your desired limits or use **EVAL** key to calculate trial control limits.
Press **OK** or **ENTER** to plot chart. **STK->** pushes control limits to the stack

CONTROL CHART MENU KEYS

[COL+] – add column of data to current data and plot to screen. Real-time monitoring ☺
[EDIT] – Edit current data
[MARK]- You can mark a point you want. This is for revising control charts
[CNCT]-   connect and unconnected points
[REVIS] – revise control limits excluding marked points
[OFC] -   Mark all out of control points. DOES NOT MARK TRENDS

CONTROL CHART KEYBOARD KEYS

[STO]- Saving the old data makes new current data using same current control limits.
[ENTER] same as COL+
[NXT]- toggles other chart
[LS GRAPH]- you can view plots at anytime

SNAP SHOTS OF DISPLAYS