Conversion of Lab- and Production Tester Datalog Files into Excel spreadsheets

Could you imagine, that such a datalog file of a lab tester can be converted into meaningful spreadsheets?

By pushing a button?

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%
%PROG  Final
%DATE:
%
%DESCRIPTIONS OF TESTS :
%--------------------------
TEST   1 : (1) X
TEST   2 : (2) Y
TEST   3 : (3) SN
TEST   4 : (4) Multi test position
TEST   5 : (5) TT
TEST   6 : (6) Vector fail
TEST   7 : (7) Test fail
TEST   8 : (8) Open/Short(0.1)
TEST   9 : (9) IDD Gross Current Check
TEST  10 : (10)
TEST  11 : (11)
TEST  12 : (12)
TEST  13 : (13)
TEST  14 : (14) IDD @ 5V (1.0)
TEST  15 : (15) IDD at 16V (1.01)
TEST  16 : (16) IDD at 20V (1.02)
TEST  17 : (17) POR Threshold @ VDD 4.75
TEST  18 : (18) POR Hysteresis @ 4.75 V(1
TEST  19 : (19) LIN REG @ 5.7V (1.3)
TEST  20 : (20) LIN REG (1.4)
TEST  21 : (21) LIN REG (1.41)
TEST  22 : (22) LIN REG (1.5)
TEST  23 : (23) LIN REG 1.5B R_ON(1.51)
TEST  24 : (24) VREG @ 7V (1.6)
```

0	0	1	0	3100
0	0	-0.574	9.123	0
0	0	0	6.389	6.980
9.217	5.253E+01	5.281E+01	5.297	5.031
5.297	5.297	2.974E+01	5.031	4.941
1.247	1.249	1.249	1.249	24922E+01
26230E+01	23881E+01	45.69E+01	0.501	17.90
20.10	8529	2.382	2.380	2.380
2.380	3.429	1.425	2.381	2.380
3.418	1.430	4.473	0.541	4.496
0.510	2.563	2.521	2.528	1.311
1.365	3.813	3.771	2.521	2.521
1.311	3.637	3.813	1.248	0
4.254	0.486	4.256	0.489	5.328
-7.472	0.042	0.153	4.510	4.389
-0.589	0.011	0.200	-0.059	527
0.005	64	0.008	129	0.003
0.302	0.302	1.980	1.979	1.217E+01
-1.192E+01	-35.04E+01	31.62E+01	31.77E+01	-34.90E+01
1.239	0.399	2.572	2.498	0.849
-0.424	0.425	0.017	4.076	4.821
4.069	4.156	0.810	0.836	0.812
0.816	4110	4220	0	0
0	0	2	0	310

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……………… and so forth for 115 units.

Yes, it can be converted, by dedicated “fine spreadsheet solutions” !

This is an example, how device data of dataloged tests are compacted and presented by pushing a button:

PreESD	**Legend**	**Testcount**	**Unitcount**	**Legend**
%PROG Final	A: Average or Mean	115	25	cpk's < 1.5 are red
%DATE:	s: 3-sigma Range			
%Date of Analyses: 30.09.2007	*: 4.5-sigma Range			
%DESCRIPTIONS OF TESTS :	<>: Limit Range			

	Distribution	**Low Limit**	**High Limit**	**Mean**	**cpk**
TEST 14 : (14) IDD @ 5V (1.0)	----<---------------------------------*sAss->-----	0	7	6,35748	2,67474178
TEST 15 : (15) IDD at 16V (1.01)	----<-------------------------**sssssAsssss*>*----	0	9	7,496	1,33699709
TEST 16 : (16) IDD at 20V (1.02)	----<----------------------------------*sAss>-----	0	10	9,343	1,54729559
TEST 17 : (17) POR Threshold @ VDD 4.75	----<-----------------*ssAs*---------------->-----	0	100	51,9796	11,8131531
TEST 18 : (18) POR Hysteresis @ 4.75 V(1	----<-----------------*ssAs*---------------->-----	0	100	51,9796	11,6883306
TEST 19 : (19) LIN REG @ 5.7V (1.3)	----<----------------------sA*-------------->-----	5	5,5	5,29692	28,0270622
TEST 20 : (20) LIN REG (1.4)	----<-------****ssssssssAssssssss****------->-----	4,75	5,25	5,00148	2,47947328
TEST 21 : (21) LIN REG (1.41)	----<-----------------------------*As------->-----	5	5,38	5,29704	11,7293134
TEST 22 : (22) LIN REG (1.5)	----<--------------------A*----------------->-----	4,5	6	5,29688	93,0404603
TEST 23 : (23) LIN REG 1.5B R_ON(1.51)	----<------------*sA*----------------------->-----	0	80	29,138	17,0055695
TEST 24 : (24) VREG @ 7V (1.6)	----<-------****ssssssssAssssssss****------->-----	4,75	5,25	5,00144	2,48764349

Comment:

In this column the original datalog "Testname" is listed.

Comments:

In this column a simplified data distribution graph visualizes usefull information per parameter:

1. *In general, the distribution width and the centering of the mean value of a parameter is normalized to the individual parameter limit width. The limit boarders are marked with the "<" sign for the low limit and the ">" sign for the high limit.*

2. *The +-3 Sigma range of a parameter distribution is indicated by the signs "s" right and left from mean "A". The range from 3.0-sigma to 4.5-sigma is indicated by the signs "*".*

3. *Such a graph alows a very quick check for critical parameters regarding possible yieldlosses. In this case Test 15 and Test 16 should be carefully analysed.*

The graphical representation of data like shown is very usefull if lot by lot drifts need to be statistically analysed. Or if the effect of hot, room and could test needs investigations. Or if the impact of a certain treatment like ESD must be displayed like shown below. In general, up to 10 different lot results can be combined and displayed in this manner and easaly analysed regarding their parameter distribution differencies.

```
TEST  14 : (14) IDD @ 5V (1.0)        [PreESD]        ----<---------------------------------*sAss->-----
TEST  14 : (14) IDD @ 5V (1.0)        [PostESD]       ----<------------------------------**ssssAss>s**--

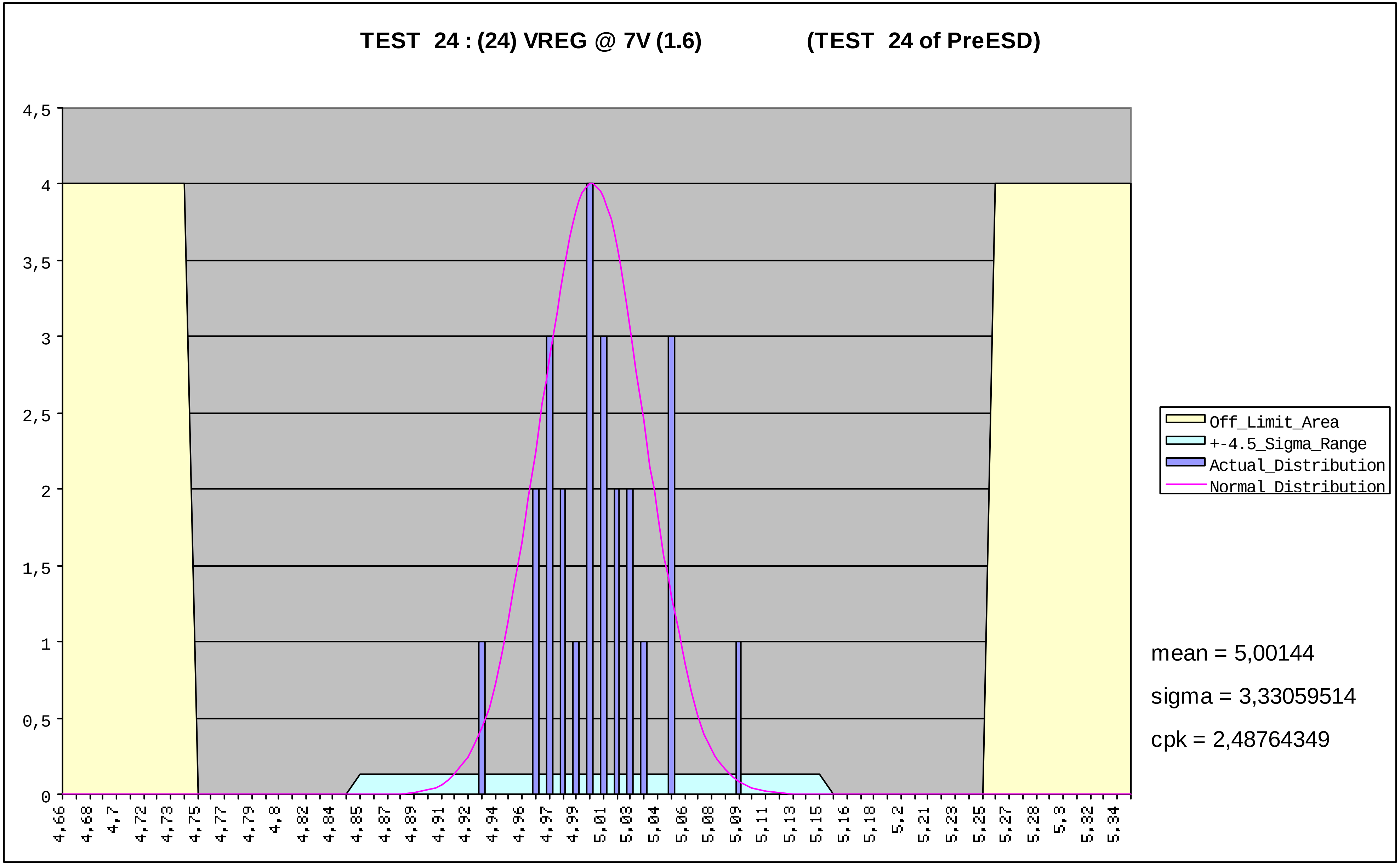
TEST  15 : (15) IDD at 16V (1.01)     [PreESD]        ----<-------------------------**sssssAsssss*>*----
TEST  15 : (15) IDD at 16V (1.01)     [PostESD]       ----<--------------------------**ssssAssss**>-----

TEST  16 : (16) IDD at 20V (1.02)     [PreESD]        ----<----------------------------------*sAss>-----
TEST  16 : (16) IDD at 20V (1.02)     [PostESD]       ----<----------------------------------*ssAs>-----
```

Of course, this graph cannot tell you whether the distribution of the parameter test data is a “normal” distribution. To check this, the best and quickest way is a visual compare of the actual and real distribution to a “Normal Curve”, calculated out of the “Mean” and “Sigma” of the parameter in question. Also “outlayers” are best detected in this way.

The following two pages show examples:

TEST 24 : (24) VREG @ 7V (1.6)   [PreESD]   ----<-------****ssssssssAssssssss****------->-----



TEST 14 : (14) IDD @ 5V (1.0) [PostESD] ----<----------------------------**ssssAss>s**--