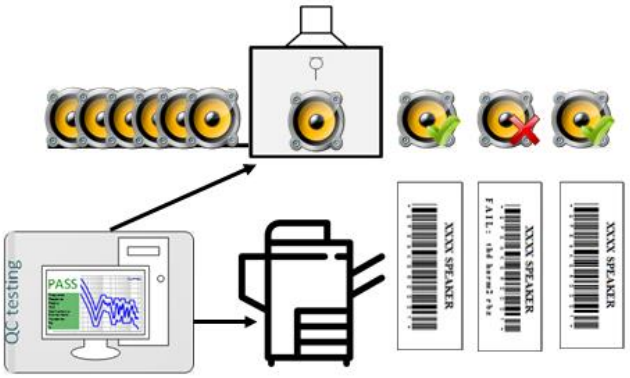
# Using Label Printers with KLIPPEL QC AN77

Application note for the KLIPPEL ANALYZER SYSTEM (Document Revision 1.0)

Automated processes are commonly used in loudspeaker production lines. Therefore, it is convenient that the EoL test system triggers label printing based on the test results including serial number and other meta information. This document provides general directions for integrating common label printers in the QC test sequence.

However, there are many different models available and the requirements for customized printing might differ. This application note provides general directions using a specific example to show how to use Klippel QC for controlling barcode label printing. The first example shows simple functionality for triggered printing after a successful test and the second one provides advanced features (complex printing with detailed info).

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# 1 Overview

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| Principle | Klippel QC provides different ways to handle serial numbers which identify the measurement/DUT and will be linked to its log data.<br>The communication between Klippel QC and the Printer is performed by command line. This functionality is implemented within the specific *Feature Library* "Batch Execution". It is possible to pass meta information (e.g. serial number, verdicts (PASS, FAIL…)) of the tests as environment variables. They can be used to pass relevant label data to the printer and define the fields of the label layout. |
| Serial Number Handling | There are different ways to define serial numbers which can be printed on the label and used to track the measurement data:<br>- Prompt for SN<br>- Automatic (increment)<br>- Read from file<br>Please find more information in *QC Manual*. |
| Batch Execution (Feature Library) | By activating this feature, it is possible to run a batch file at the end of each test. This can be used to communicate with the printer and to define the fields of the label. Therefore, the batch file works as an interface between QC software and the printer. |

# 2 Requirements

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| Klippel QC Software | QC Standard, Basic or Stand-alone version 3 or higher.<br>Please note the examples in this application are based on QC6.1, which means some environment variables are not available for earlier versions. Please refer to your *Feature libraries Manual* delivered with your QC software version. |
| Label Printer | The following requirements should be fulfilled by your printer:<br>• Command line interface<br>• Robust for production environment<br>• Stable operation for high volume printing<br>• Glue and label applicable for test objects |
| Program Package of Printer | For a normal label printer, the following software components are required:<br>• Device driver<br>• program package for label printing<br>Please refer to the specification/manual of your own printer model. |
| Batch File Interface | The label printing is triggered automatically so there is an automation interface required. The easiest interface is a command line or VBS interface. This depends on the printer. Please refer to the examples below. |

# 3 General Work Flow

## 3.1 Preparation According to the Printer Model

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| Install Printer Software | • Install the printer driver<br>• Install printer software<br>Maybe other components need to be installed according to the printer model, please check the printer manual and make sure that all required components. |
| Label Layout | Design the label layout according to customized applications.<br>Normally, there are label templates included in the printer software package. They can be a good start point, different fields (Text, Barcode, Image….) on the label can be adjusted/added/removed. |

## 3.2 Batch file

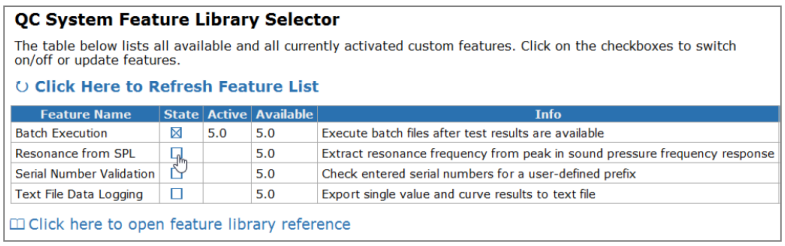
The batch file is the main communication interface between Klippel QC and the printer. Hence, it needs to implement three main tasks:

1. Collecting environment variables of the QC test
2. Using corresponding environment variables to trigger the printer under desired condition. For example, if "Ctrl_OverallVerdict" is "1" (PASS), then execute the printing command.
3. Choose the correct label template and define the text fields of the label. E.g:
   - serial number on the label by using "Cfg_SerialNumber"
   - "Results_Fail" gives the information about which measures are failed
   - "Cfg_DatabasePath" to print the test name on the label

## 3.3 Setup in Engineer Mode

**Enable Batch Execution**

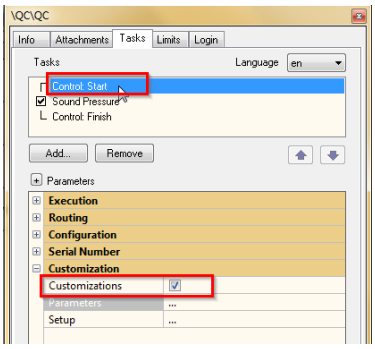
Activate the feature of "Batch Execution" using the *Feature Library Selector* tool which is accessible via *QC Start Engineer – Add-Ons – Feature Library Selector.*



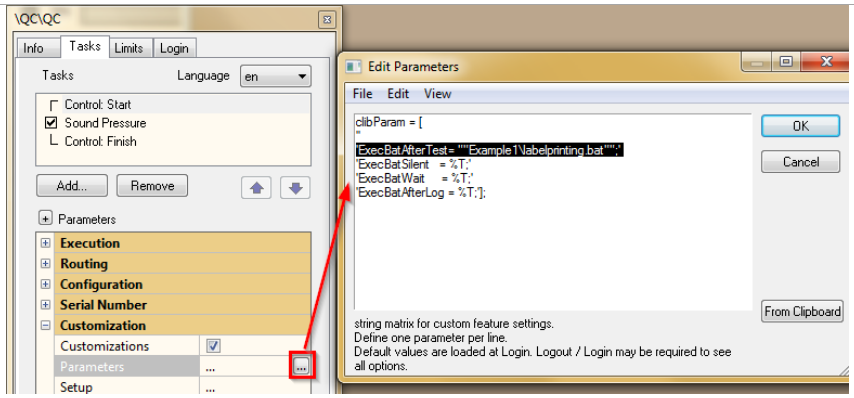

Further parameters of this feature will then be available in the property page of the *Control Task* (see the steps below).

**Setup QC Test**

- Run "Klippel QC Start - Engineer" tool
- Select your test, or create a new one (please refer to QC manual for more information)
- Click *Measure* to login
- Go to *Control: Start* and navigate to parameter section "Customization", enable "Customizations":




- Logout and login again to load default parameters of *Batch Execution*
- Specify the parameter "ExecBatAfterTest" with the path (relative or absolute) and filename of the batch file to be executed and click "OK" button.




- Open the parameter section “Serial Number”, select a desired mode to handle the serial number.

**Test Run**

- Configure the test parameters and set limits based on the steps described in the QC manual
- Make sure that the printer is switched on and connected
- Type in the serial number, then start the measurement
- The printer will response (be triggered to print the label or not) just after the test according to the test results and expectation implemented in the batch file.

### 3.4 Online Printing in QC Operator Mode

There are no further steps required for testing in operator mode, if required setups are done by the engineer according to section 3.3. Just log into the test by running “Klippel QC Start - Operator” tool.

## 4 Examples

### 4.1 General

The following examples show how to trigger a specific printer by Klippel QC. The used printer model is the ***Brother P-Touch QL550*** label printer. If you are using another printer, you should refer to the steps described in section 3.

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| **Install Printer Software** | The following components are installed:<br>- ***Brother P-touch Application Component*** (b-PAC) is needed to use the label templates<br>- ***P-touch Editor*** to edit the label and layout as templates (*.lbl or *.lbx files).<br>- ***Driver*** for the printer. |
| **Label Layout** | There are many label templates available in the installation path of the ***Brother QL550*** printer. They can be reloaded into the P-touch Editor and be specified to desired styles. |
| **Batch File** | There is a VBS example script (along with other examples based on other languages as Visual C++, Visual Basic) provided by the printer program package. Therefore, two script files are needed for each example:<br>- one VBS file to implement all required tasks<br>- the other batch file to run the VBS file via command line |

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| **Windows Script** | The VBS interpreter is included in the Windows operating system. If you use a 64 Bit version of Windows you have the 64 Bit and the 32 Bit version the VBS interpreter (cscript.exe) installed.<br>If the printer requires a 32 Bit environment, a check has to be integrated in the batch-wrapper of the cscript call, e.g:<br>`if %PROCESSOR_ARCHITECTURE%==x86 (`<br>`  set CSCRIPT=%windir%\System32\cscript.exe`<br>`)else (`<br>`  set CSCRIPT=%windir%\SysWoW64\cscript.exe`<br>`)`<br>`%CSCRIPT% //nologo .\labelprinting.vbs` |

## 4.2 Example 1: Print Labels for Passed DUTs

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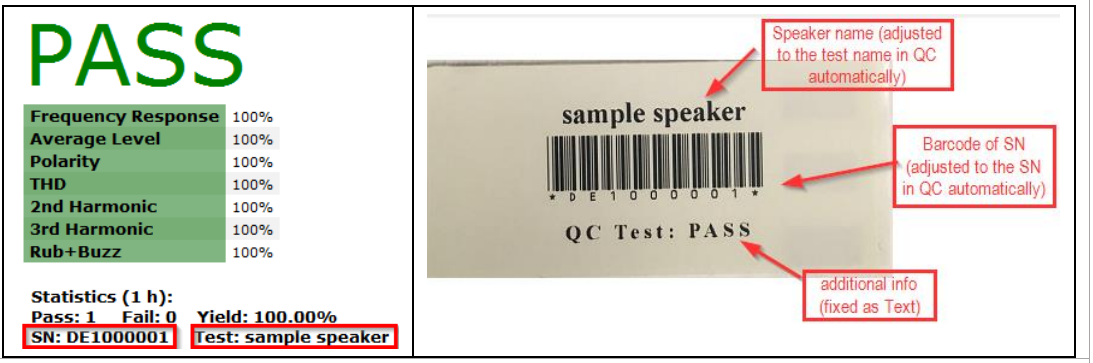
| **Target** | This is a simple example to show the functionality:<br>If the test is PASS, then print the labels as designed label template (*MyLabelPass.lbx* in the folder *"Example1"*). |
| **Run Example** | • Download and extract *Example Data_AN77*<br>• Copy the complete folder "*sample speaker*" to your test root folder<br>• Enable "Batch Execution" in the feature library selector<br>• Login the QC test "*sample speaker*" (based on QC6), enable "Customizations" in Control:Start<br>• Logout and login again<br>• Set customization parameter *'ExecBatAfterTest = "Example1\labelprinting.bat";'* (default in the example) and click "OK" button.<br>• Set limits for the measurements<br>• Type in "DE1000001" as SN in the control panel<br>• Start the measurement |
| **Output** | According to the application of this example, there should be no action of the printer if the test is failed. If the test is passed, a label based on the layout of the label template will be printed:<br>  |

## 4.3 Example 2: Complex Printing

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| **Target** | In this example different label printings will be triggered by the overall verdict of QC test:<br>If it is PASS, then print the labels as designed label-layout for passed tests (*MyLabelPass.lbx* in the folder*"Example2"* (the same for example1));<br>If it is FAIL, then print the labels as designed label-layout for failed tests (*MyLabelFail.lbx* in the folder*"Example2"*). |
| **Run Example** | • Download and extract *Example Data_AN77*<br>• Copy the complete folder "*sample speaker*" to your test root folder<br>• Enable "Batch Execution" in the feature library selector<br>• Login the QC test "sample speaker" (based on QC6), enable "Customizations" in Control:Start<br>• Logout and login again<br>• Set customization parameter *'ExecBatAfterTest = "Example2\labelprinting.bat";'* and click |

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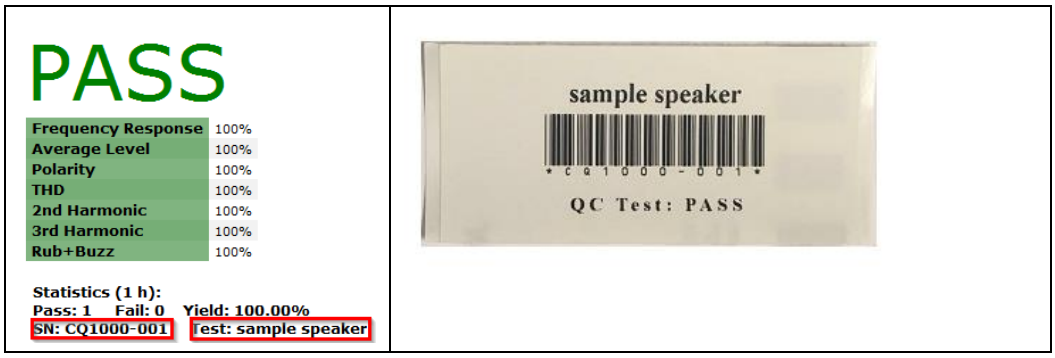
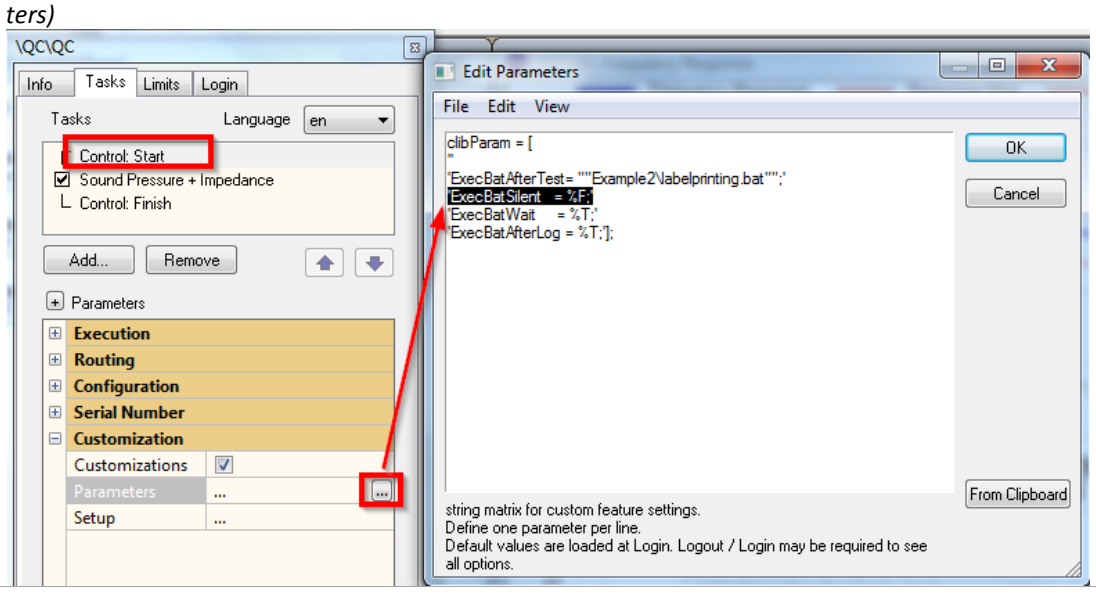
| | "OK" button.<br>• Set limits for the measurements<br>• Type in "CQ1000-001" as SN in the control panel<br>• Start the measurement |
| **Output** | If the test is passed, a label based on "passed" label template will be printed (the same as in example1):<br>  <br>If the test is failed (here a second measurement "CQ1000-002" was manipulated), a label based on "failed" label template will be printed:<br>  |

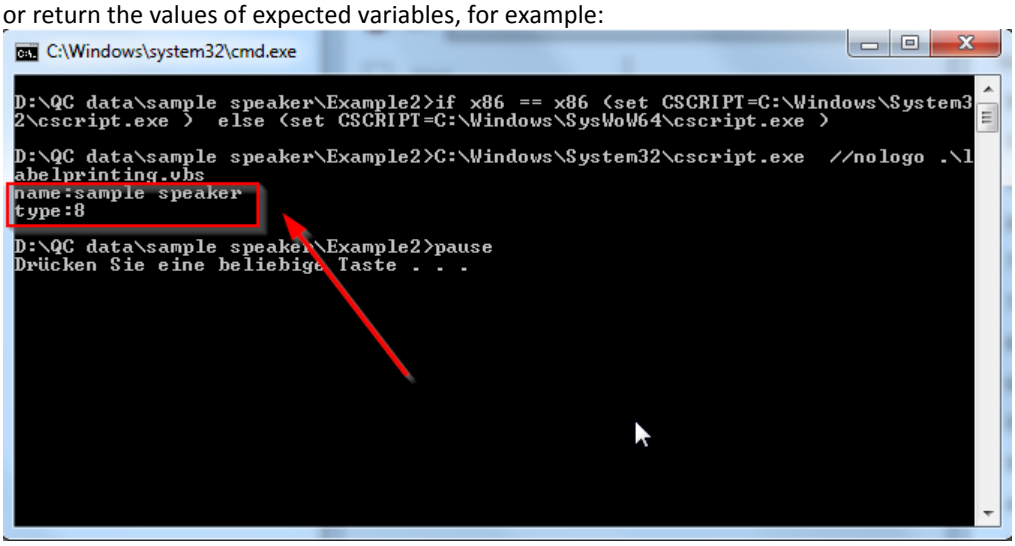
## 5 Troubleshooting

Since the printer interface scripts delivered with the examples need be adjusted to your particular application and printer model, it may be necessary to have means for debugging. The QC *Feature Library* "Batch Execution" normally executes the specified script file silently in the background. This can be deactivated modifying the provided parameters.

- Deactivate silent execution by setting "ExecBatSilent = %F" (*Control:Start → Customization → Parameters)*



- Add the command “Pause” in the batch script file for pausing the command execution
- Use the command “echo” for bat. file or “Wscript. Echo” in case of VBS file to show you the script error or return the values of expected variables, for example:




## 6 Disclaimer

The examples provided with this Application Note are NOT to be used in customer applications as it is. Adjustments are needed according to your printer model. However, it is beyond the scope of this application note to cover a universal solution. The examples included are intended to give you an overview on how Klippel QC can be set up to work with your label printer.

## 7 References

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| **Manuals** | • QC User Manual<br>• QC Feature Library Manual<br>• dB-Lab User Manual |
| **Others** | • Brother P-touch QL-550 https://support.brother.com/g/b/producttop.aspx?c=gb&lang=en&prod=lpql550euk<br>• https://docs.microsoft.com/en-us/windows-server/administration/windows-commands/echo<br>• Download link for example data: https://www.klippel.de/fileadmin/klippel/Files/Know_How/Application_Notes/Example%20Data_AN77.zip |

Find explanations for symbols at:
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