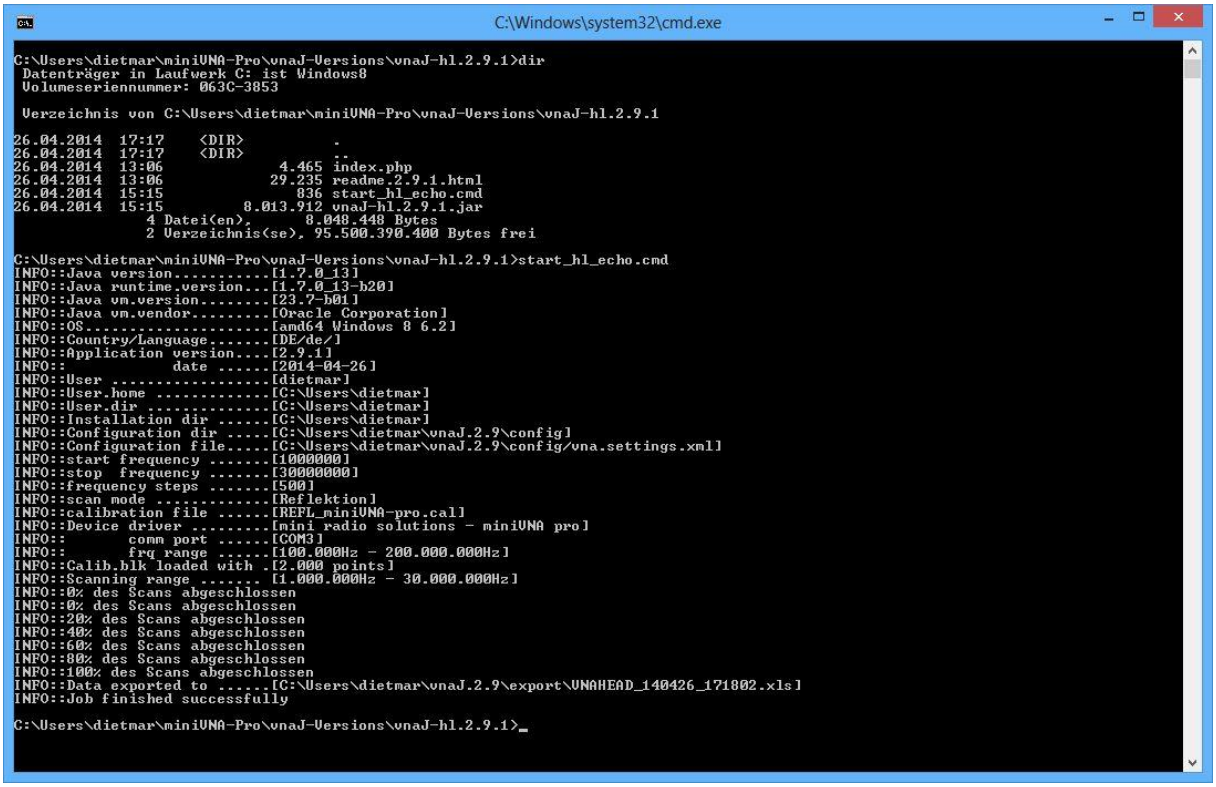

vna/J 3.x
User guide for headless application

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Table of contents

Changes

Version	Date	Who	Changes
2.9.0	26. April 2014	DL2SBA	Created
3.x	13. December 2014	DL2SBA	Hints & Tips extended

Acknowledgements

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- **Davide, IW3HEV** and **his team** for these fine little blue boxes.

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- The numerous users worldwide giving me permanent feedback.

- And last but not least my cat Ina, who has often helped me in solving complex situations on the keyboard.

Overview

The miniVNA and miniVNApro instruments by mRS *http://www.miniradiosolutions.com* are popular and very useful test instruments.

The miniVNA instrument is a small blue box with two BNC connectors and a USB connector.

The newer miniVNApro is also small blue box now with two SMA connectors and much enhanced precision.

All the control of the instrument is performed by a software application running on a PC.

Many people have contributed to the development of this software, but the focus has been mainly on the Microsoft Windows operating system. There was a Linux based application but this is no longer supported, and the advancement of the various Linux distributions has rendered it inoperable.

I've started in 2007 to develop a control application based on the Java programming language. Initial ideas were taken from the Visual-Basic-Application that was provided by mRS.

Java is a cross-platform language, which allows the identical application binary to run on any supported Java enabled Operating System.

Currently I've tested the application on Windows 98, Windows XP, Windows7-32bit, WindowsVISTA-64bit, Mac OS X 32-bit versions and Mac OS X 64-bit versions.

History

Since 2007 the GUI application vna/J is available for various network analysers.

I received a bunch of emails asking for an application, which can be used i.e. for automated testing. Until April 2014 I have to postpone these questions...

Starting with vna/J version 2.9, a headless application is available, which can be used i.e. in automated test environments.

Basics

Since version 2.9 of vna/J a command-line version of the vna/J GUI is available (I call this version also headless).

This command-line version can be used to execute automated scans, when no GUI is needed or graphical screen output is available.

You can use the command-line version to execute a scan and export the data into

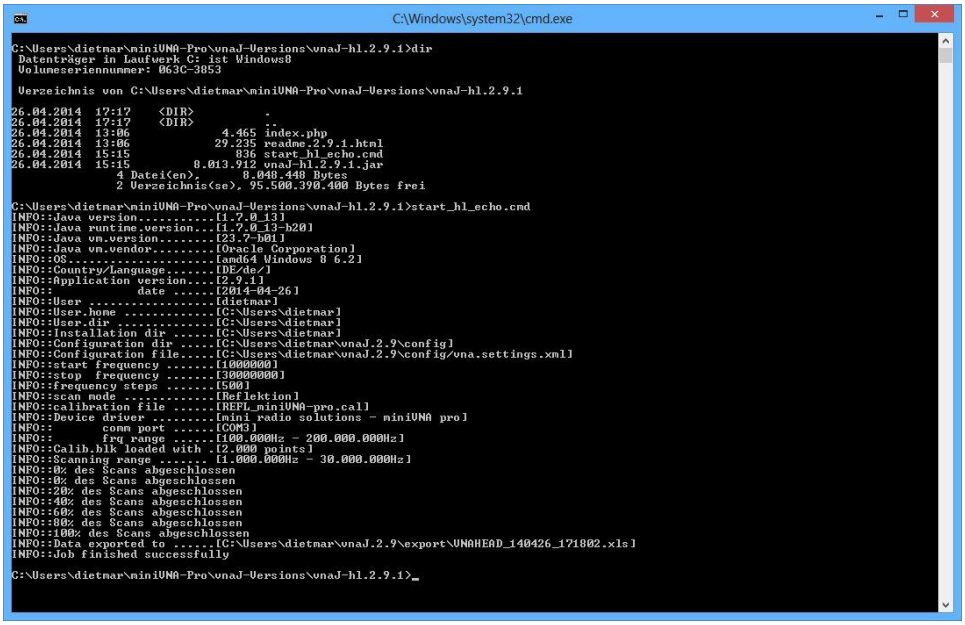
- CSV - all scan information inside a comma-separated text-file
- XLS - all scan information inside an XLS-file
- SnP - S-parameter format
- ZPLOTS - special file format for ZPlots

The basic configuration (analyser type, communication port, filename formats ...) must be configured via the regular vna/J GUI.

Then the command-line version must be called with these parameters:

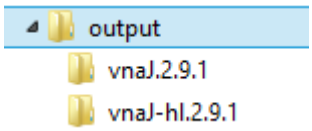
- start frequency
- stop frequency
- number of scan steps
- scan mode
- output file formats

To get an idea, how this look, have a look at this screen-shot:

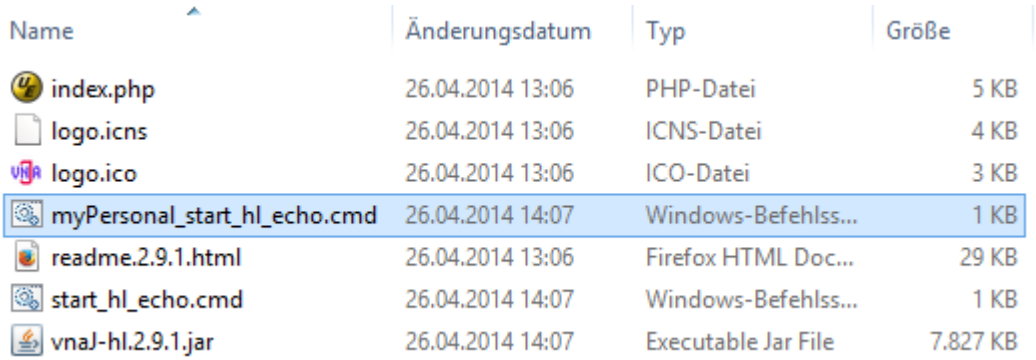


To get started, I suggest to follow the steps detailed below:

1. Install the GUI application of vna/J as described in the installation guides for vna/J
2. Configure the used analyser and create the required calibration files inside vna/J
3. Download the complete directory for the headless application in the root folder as vna/J. This may then look like this:

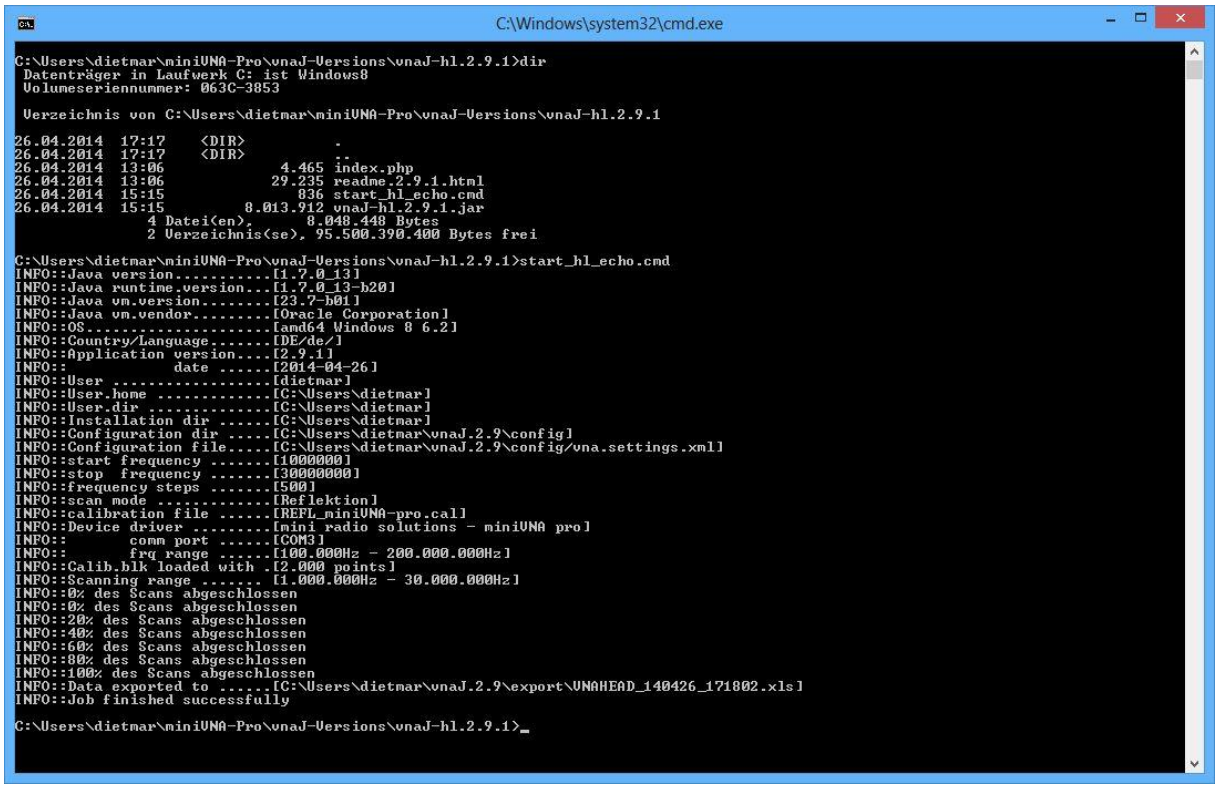


4. Create a of the sample command-file “start_hl_echo.cmd” from the vnaJ-hl.X.Y.Z directory in the sample place



Name	Änderungsdatum	Typ	Größe
index.php	26.04.2014 13:06	PHP-Datei	5 KB
logo.icns	26.04.2014 13:06	ICNS-Datei	4 KB
logo.ico	26.04.2014 13:06	ICO-Datei	3 KB
myPersonal_start_hl_echo.cmd	26.04.2014 14:07	Windows-Befehlss...	1 KB
readme.2.9.1.html	26.04.2014 13:06	Firefox HTML Doc...	29 KB
start_hl_echo.cmd	26.04.2014 14:07	Windows-Befehlss...	1 KB
vnaJ-hl.2.9.1.jar	26.04.2014 14:07	Executable Jar File	7.827 KB

5. Edit the parameters so that they match your requirements. For details check chapter “Command-line parameters” on page 9.
6. Run the command-file



Configuration

All configuration data is stored in a user specific folder on the file system. No entries are made to the system registry or any other system configuration files.

All configuration and calibration files can be found here:

Platform	Location
Windows XP	C:\Einstellungen und Dokumente\<UserName>\ vnaJ.2.9
	C:\documents and settings\<UserName>\ vnaJ.2.9
Windows VISTA	C:\Benutzer\<UserName>\ vnaJ.2.9
	C:\users\<UserName>\ vnaJ.2.9
Windows 7	C:\Benutzer\<UserName>\ vnaJ.2.9
	C:\users\<UserName>\ vnaJ.2.9
Windows 8	C:\Benutzer\<UserName>\ vnaJ.2.9
	C:\users\<UserName>\ vnaJ.2.9
Mac OSX	/Users/<UserName> / vnaJ.2.9
SUSE Linux 11	/home/user/<UserName>/vnaJ.2.9

Remark: If you want to delete everything, simply delete the vnaJ directory, the used JAR-file and everything is gone.

Please check also the vna/J user guide for further details on configuration and storage locations.

Command-line parameters

The headless vna/J support a number of command-line parameters via the standard parameter procedure for JAVA execution.

Basically these parameters are passed via the –D option of the JAVA virtual machine.

```
java -Duser.home=c:/temp
     -Duser.language=en
     -Duser.region=US
     -jar vnaJ.2.9.1.jar
```

In the above example

- the home directory of vna/J is set to “c:\temp”
- the user language is set to English
- the user region is set to the united states

For a sample usage of the parameters please check the command-file “start_hl_echo.cmd” in the download directory of the headless application.

```
@echo off
rem (c) DL2SBA 2014
if not exist vnaJ-hl.2.9.1.jar goto err1

java -Dfstart=1000000 -Dfstop=30000000 -Dfsteps=500 -Dcalfile=REFL_miniVNA-pro.cal -Dscanmode=REFL -Dexports=xls -jar vnaJ-hl.2.9.1.jar
goto end

:err1
echo !!! ----------------------------------
echo !!! program file vnaJ-hl.2.9.1.jar missing
echo !!! aborting
pause
goto end

:end
```

Supported parameters

The following parameters are supported:

Parametername	Mandatory	Usage
user.home	No	Points to the directory, where the root directory for vna/J is located. You can use the path-delimiter "/" on all platforms including Windows. See also info in chapter "**Fehler! Verweisquelle konnte nicht gefunden werden.**" on page **Fehler! Textmarke nicht definiert.**.
user.language	No	Sets the users language to one of the supported languages. See details in chapter "**Fehler! Verweisquelle konnte nicht gefunden werden.**" on page **Fehler! Textmarke nicht definiert.** and below this table.
user.region	No	Sets the users region to one of the supported regions. See details in chapter "**Fehler! Verweisquelle konnte nicht gefunden werden.**" on page **Fehler! Textmarke nicht definiert.** and below this table.
configfile	No	Overrides the name of the main configuration XML file. See also chapter "**Fehler! Verweisquelle konnte nicht gefunden erden.**" on page **Fehler! Textmarke nicht definiert.**.
fstart	Yes	Specifies the start frequency for the scan. The value must be in Hz and match the selected analyser and must be less than the parameter "fstop"
fstop	Yes	Specifies the stop frequency for the scan. The value must be in Hz and match the selected analyser and must be greater than the parameter "fstart"
fsteps	Yes	Specifies the number of scan steps for the scan. The value must match the selected analyser.
calfile	Yes	This must be a valid calibration file name inside the configured "calibration" directory. This file must match the selected analyser and the selected scan mode.
scanmode	Yes	This must be "REFL" for reflection and "TRAN" for transmission measurement.
exports	No	In this parameter, a list of output file types can be specified. The following types are supported: snp for S-parameter files xls for export into Microsoft XLS-format xml for export into XML-format csv for export into CSV-format ***Remark***: For details, please check chapter "The menu bar/Export" in the vna/J User Guide.

Remark: The parameter names are case-sensitive.

Supported region and language codes

The following combinations of language and region are supported:

user.region	user.language	Remark
US	en	Texts and messages are displayed in English. Numbers and timestamps are formatted in English.
DE	de	Same for Germany
HU	hu	Same for Hungary
PL	pl	Same for Poland
SE	sv	Same for Sweden
IT	it	Same for Italy
ES	es	Same for Spain
NL	nl	Same for the Netherlands

Remark: The parameter values are case-sensitive!

Hints and tips

Create new configuration file

The vna/J headless application cannot create a new configuration file itself. You have to use vna/J GUI to create it.

Specify the command-line parameter “configfile” when calling vna/J. Then a new configuration file with this name will be created and saved, after closing vna/J.

Configuration files only for headless application

You can specify a “personal” configuration file, which should be used from the headless application, by specifying the command-line parameter “configfile”.

If this parameter is given, the specified file is used instead the default file “vna.settings.xml”.

Change the configured analyser and/or communication port

You can launch the vna/J GUI application also with the parameter “configfile”. Specify in the calling command-file the same parameter and you can edit the analyser settings using the vna/J GUI.

JAVA not found

If you're running a Windows systems, which hasn't the JAVA runtime accessible directly via the command line, you can modify the provided cmd-file this way:

Original

```
@echo off
rem (c) DL2SBA 2014
if not exist vnaJ-hl.3.0.8.jar goto err1

java -Dfstart=1000000 -Dfstop=30000000 -
if errorlevel 3 (
   echo *** error executing scan
   goto end
)
```

Modified

```
@echo off
rem (c) DL2SBA 2014
if not exist vnaJ-hl.3.0.8.jar goto err1

"C:\Program Files (x86)\Java\jre7\bin\java.exe" -Dfstart=1000000 -
if errorlevel 3 (
   echo *** error executing scan
   goto end
)
```

You have to adjust the absolute path to your JAVA installation (marked yellow) in picture above.

The quotation marks are relevant surrounding the path, when blanks are inside the path!

Links

http://vnaj.dl2sba.com

My homepage for vna/J

http://groups.yahoo.com/group/analyzer_iw3hev

An active YAHOO group related to the miniVNA as well as the miniVNA PRO.

In the files sections under **Files > Subjects - Off Topic - (Brainstorming) > SUSE Install for DL2SBA app.** you can find a detailed guide how-to install the stuff on UBUNTU as well as SUSES Linux versions.

http://www.miniradiosolutions.com

Company that produces the miniVNA as well as the miniVNA PRO

http://max6.pl

Company that produces the MAX6

License

Dutch

English

Deutsch