



Diagnosis Tool for Scan Heads using iDRIVE Technology

iSCANcfg

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1 Introduction

iSCANcfg is a diagnosis tool for checking the communication between an RTC PC interface board and a scan head as well as for checking the scan head's operational state.

iSCANcfg can be used on the one hand with RTC4, RTC5 and RTC6 boards and on the other with scan heads using SCANLAB's iDRIVE technology (intelliSCAN, intellcube, intelliWELD, intelliDRILL series).

1.1 Manufacturer

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1.2 System Requirements

Hardware

Full usage of the iSCANcfg diagnosis tool requires that the scan system is controlled by an RTC4, RTC5 or RTC6 board installed in an IBM-compatible PC. The RTC board and its drivers must be correctly installed (see RTC4, RTC5 or RTC6 manual). The RTC board must be properly connected to the scan system.

Operating System

iSCANcfg is a dialog-based Win32 application usable with the following Microsoft operating systems:

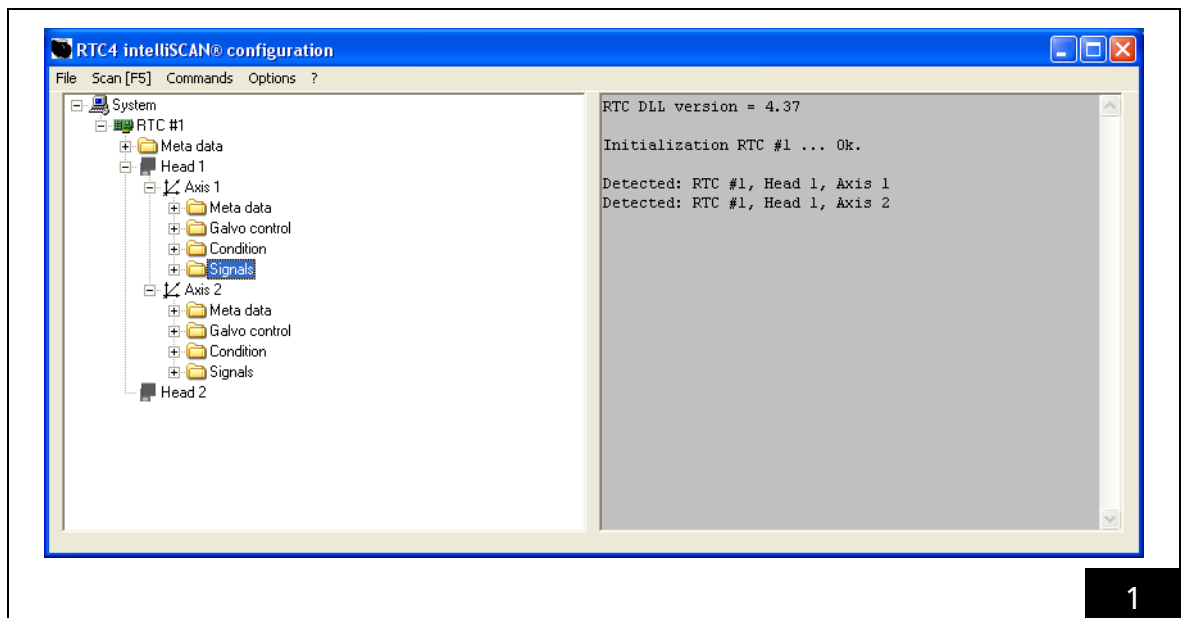
- MS Windows 2000
- MS Windows XP
- MS Windows Vista
- MS Windows 7
- MS Windows 8

2 iSCANcfg – Overview

The iSCANcfg diagnosis tool serves to

- check for proper communication between RTC PC interface board and scan head,
- check whether the scan head is operational,
- identify error states and write the scan head's operational state to a text file,
- select different scan head tunings (and with it different dynamic performance),
- select the scan head scaling (1/1, 1/2, 1/4 or 1/8),
- save the scan head's tuning and scaling settings permanently.

iSCANcfg is scanning for RTC PC interface boards and connected scan heads once every second. The connection state is displayed at the right half of the program window. **Figure 1** shows a typical display.



3 Installing iSCANcfg



Caution!

Before installing the iSCANcfg software, ensure that the drivers for the corresponding RTC board are installed on the PC in which your RTC board is installed.

- ▶ Insert the software CD into the optical drive of the PC in which your RTC board is installed.
- ▶ With Windows Explorer, open the CD's directory containing all the software package's files.
- ▶ Copy all of this directory's files to any desired directory on your PC.



Caution!

After installation, all of the software package's files must reside in the same directory.

Using an RTC4 board:

- iSCANcfg4.exe
- RTC4DLL.dll
- RTC4D2.hex

Using an RTC5 board*:

- iSCANcfg5.exe
- RTC5DLL.dll
- RTC5OUT.out
- RTC5RBF.rbf
- RTC5DAT.dat

Using an RTC6 board:

- iSCANcfg6.exe
- RTC6DLL.dll
- RTC6OUT.out
- RTC6RBF.rbf
- RTC6DAT.dat

* For older versions of the RTC5 board (up to and including DLL526) the following MS Visual Studio run time libraries for C and C++ are required additionally:

- MSVCP71.dll
- MSVCR71.dll

4 Starting iSCANcfg

Launch the iSCANcfg program in typical Windows manner:

Using an RTC4 board:

- ▶ Double-click 'iSCANcfg4.exe' or an appropriately created desktop symbol.

Using an RTC5 board:

- ▶ Double-click 'iSCANcfg5.exe' or an appropriately created desktop symbol.

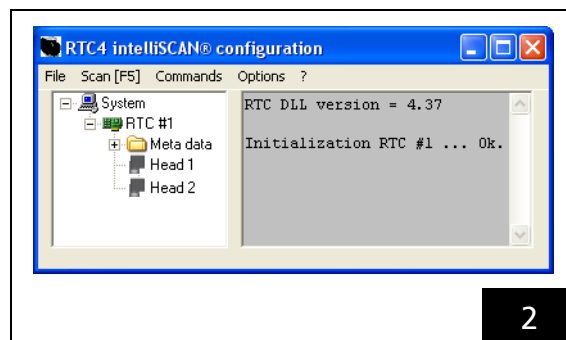
Using an RTC6 board:

- ▶ Double-click 'iSCANcfg6.exe' or an appropriately created desktop symbol.

The program window appears (see [figure 1 on page 5](#)).

Note

If the program window looks like shown in [figure 2](#) – folders Head1 and Head2 can't be opened –, there is no scan head with iDRIVE® technology connected. In this case, iSCANcfg can't be used.



2

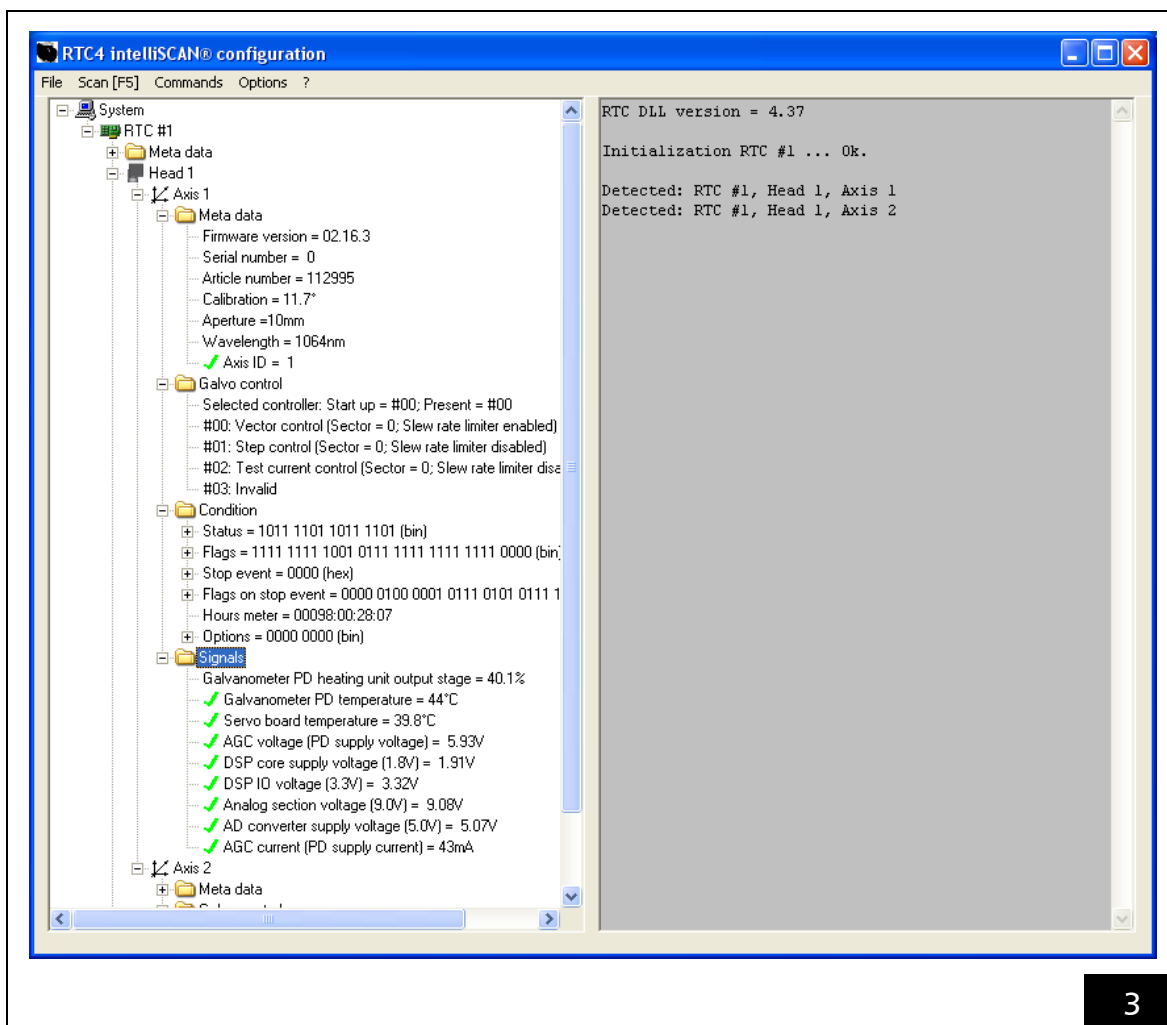
5 Using the iSCANcfg Diagnosis Tool

5.1 Diagnosis

iSCANcfg constantly reads different operational status parameters and current settings. These are displayed in an explorer at the program window's left side (see [figure 3](#)).

If you want to check certain operational status parameters or settings, expand the folders and subfolders by clicking the corresponding symbol.

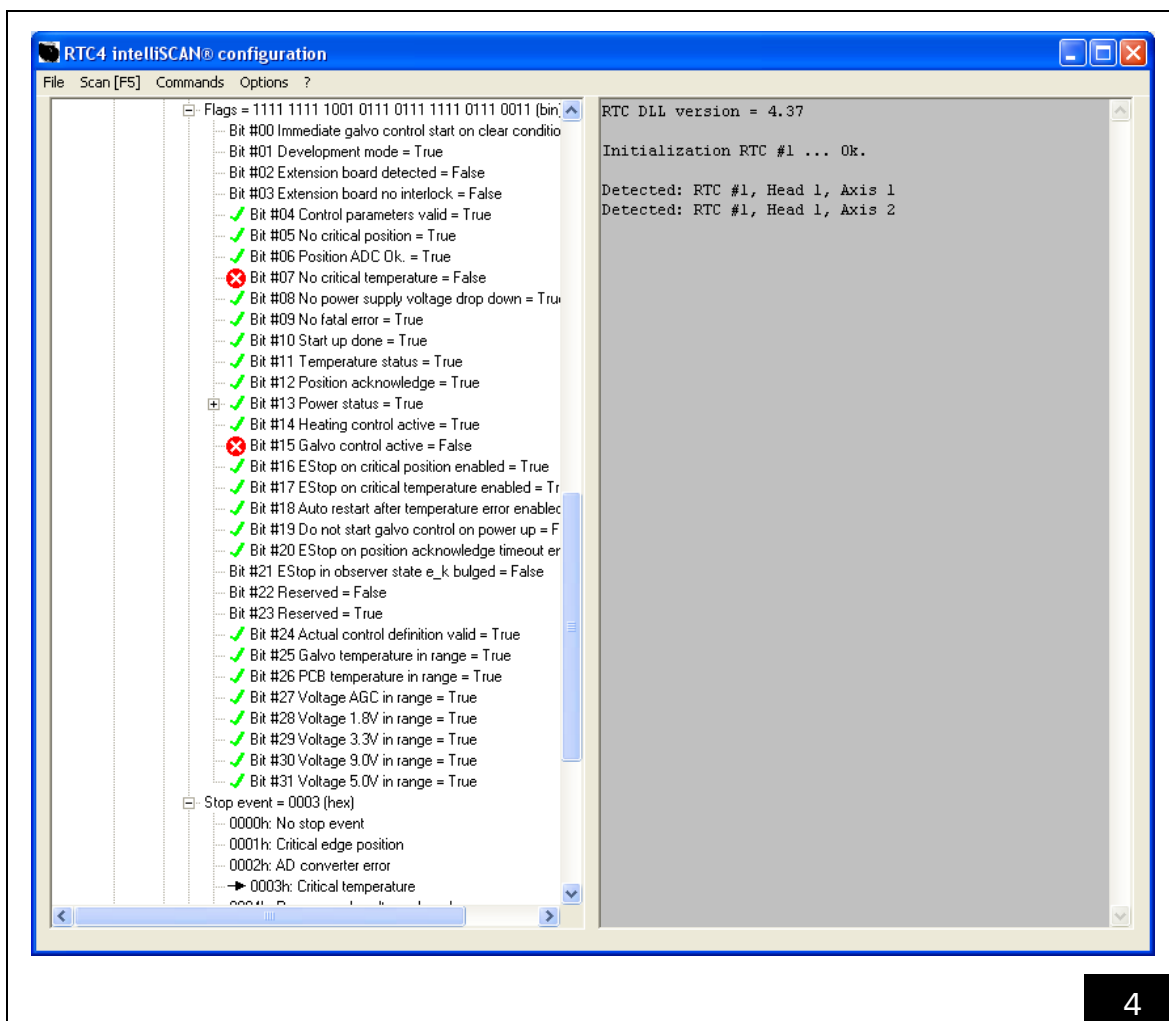
If you want to save the scan head's current operational state, select 'File\Save' in the menu bar. The certain operational status parameters and settings will be written to a text file.



If malfunctions occur during operation, the corresponding folders/subfolders expand automatically (see [figure 4](#)).

In the example below, the event, that caused the scan head to stop, is identified as “critical temperature”.

The connection state between RTC PC interface boards and connected scan head is displayed at the right half of the program window. Changes of the connection state will refresh the display.



5.2 Settings

Additional to the diagnosis function, iSCANcfg lets you perform the following scan head settings:

- Selecting the tuning
- Selecting the scaling
- Saving the settings permanently

Note

The settings described below will be performed via the menu bar. The menu bar becomes visible, once communication with the scan head is established.

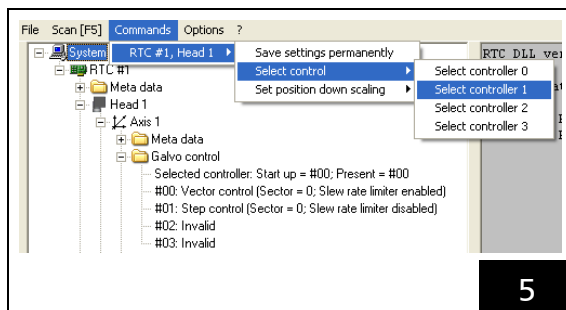
Selecting the Tuning

Note

This setting is *not* possible with an excelliSCAN scan head.

Diverse applications have differing requirements regarding the laser positioning dynamics. iDRIVE® scan systems can be equipped with multiple tunings with different dynamic performance. (For details refer to the RTC4 or RTC5 Manual.)

Select the desired tuning (within the iSCANcfg program called "controller") via the menu 'Commands \ RTC #1, Head 1 > Select control > Select controller...' (see figure 5).



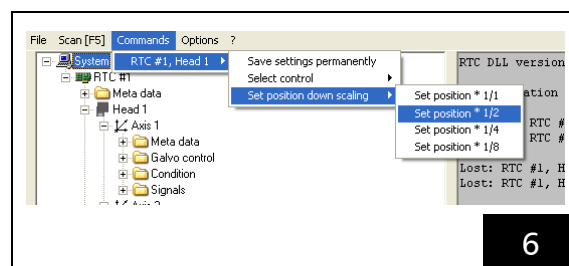
Selecting the Scaling

Note

This setting is *not* possible with an excelliSCAN scan head.

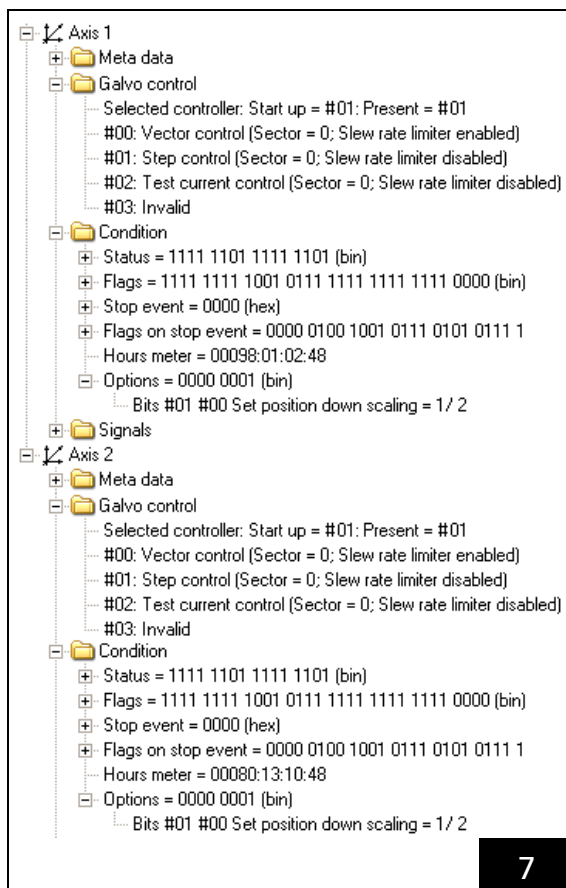
The scaling lets you (down) scale the position values received from the RTC by a specific factor (1/1, 1/2, 1/4 or 1/8). Thereby, the scan area can be confined to a smaller angular range – with a higher angular resolution. (For details refer to the RTC4 or RTC5 Manual.)

Change the scaling of the input/output signals via the menu 'Commands \ RTC #1, Head 1 > Set position down scaling > Set position * ...' (see figure 6).



The settings (see [page 9](#)) can be verified by expanding the corresponding folder (both below 'Axis 1' and 'Axis 2', see [figure 7](#)):

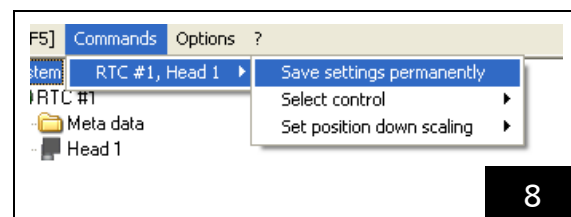
- Tuning: 'Axis...\Galvo control'
- Scaling: 'Axis...\Condition\Options'



Saving the Settings permanently

The scan head settings described above are reset to default after power cycling.

If the settings are supposed to be persistent, you can save them permanently in the flash memory via the menu 'Commands \ RTC #1, Head 1 > Save settings permanently' (see [figure 8](#)).



Notes