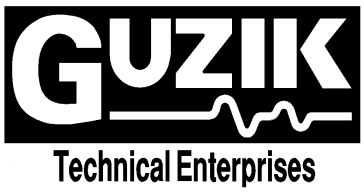

WITE32™

Release Notes

Version 3.00

11/05/2002

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CHAPTER 1

HARDWARE SUPPORTED IN WITE32

Version 3.00 is the initial release for the new 3.XX line of WITE32. This software line is able to operate with the latest generation of the Guzik Test Systems as well as with some of the previous models. Obsolete hardware configurations are no longer supported in the WITE32 software.

1.1 RWA-2000 Family

The WITE32 software Version 3.00 supports the new RWA-2000 family of Guzik Read-Write Analyzers including:

- RWA-2004 test system with up to 4 Gbit/sec maximum data rate (Guzik P/N S90-600654)
- RWA-2003 test system with up to 3 Gbit/sec maximum data rate (Guzik P/N S90-600653)
- RWA-2002 test system with up to 2 Gbit/sec maximum data rate (Guzik P/N S90-600650)

Note: The data rates specified above are the maximum values, which can be achieved with RWA parametric channel. Maximum data rate of Analog Front-End or commercial PRML channel is limited by the microchip used, and therefore could be different from the maximum data rate of the RWA parametric channel.

1.2 Analog Front-End

The WITE32 software Version 3.00 supports the Universal Preamplifier 8 (UP8). This new board (Guzik P/N S23-318840) is a successor of the UP7 preamplifier family. Universal Preamplifier 8 is able to operate up to 1.8 GHz. The board combines all functions of UP7, Universal Interface for the new Guzik MR5 head amplifier, and Universal Interface for commercial head amplifiers.

The new Guzik MR Head Amplifier Revision 5 (MR5) with bandwidth up to 1.3 GHz is supported. This board is a successor of the Guzik MR Head Amplifier Revision 4 (MR4).

1.3 Programmable Filters for RWA 2000 Family

The WITE32 software version 3.00 supports new programmable filters for RWA 2000 family. These filters are designed as Butterworth or Bessel fifth-order low pass filters. The cut-off frequency of these filters can be changed within one octave. The filters for the following octaves are currently in production:

- 1000-2000 MHz. (Guzik P/N S23-319170)
- 500-1000 MHz (Guzik P/N S23-319180)
- 250-500 MHz (Guzik P/N S23-319190)
- 125-250 MHz (Guzik P/N S23-319200)

Up to four filters can be installed simultaneously on the Main Filter Matrix (MFM) inside Read-Write Analyzer thus covering the whole RWA 2000 family frequency range.

1.4 Guzik PCI Host Adapter 2002

The PCI Host Adapter 2002 (Guzik P/N S23-318180) is the PC board, which provides the control signal and data exchange between PC and RWA, Spinstand, and Z-Height Adjustment Tool. The board replaces the previous revision of Guzik PCI Host Adapter (P/N S60-700730-XX) and is compatible with the Guzik Read-Write Analyzers 2550, 2585, and 2000 families.

The PCI Host Adapter 2002 has the following advantages comparing to the previous revision of the PCI Host Adapter:

- The new board can operate in the personal computers, which have 1GHz or faster processor installed.
- The PCI read operation speed is increased.

1.5 Head Loading Mechanism HLM-3F

The WITE32 software Version 3.00 supports the new Head Loading Mechanism HLM-3F for S1701B Guzik Spinstands.

1.6 PingPong Cartridge Design for Head Loading Mechanism HLM-3F

The WITE32 software Version 3.00 supports a new PingPong cartridge created for the Head Loading Mechanism HLM-3F.

The PingPong cartridges have a special design, which allows the head mounted on the top cartridge to be connected to the bottom amplifier, and the head mounted on the bottom cartridge to be connected to the top amplifier.

1.7 Tester Configurations Supported

The following hardware configurations are tested and approved to work with the WITE32 software Version 3.00:

- RWA-2004 + UP8 + Guzik S1701B spinstand + PCI Host Adapter
- RWA-2003 + UP8 + Guzik S1701B spinstand + PCI Host Adapter
- RWA-2002 + UP8 + Guzik S1701B spinstand + PCI Host Adapter
- RWA-2585S + UP8 + Guzik S1701B spinstand + PCI Host Adapter

Guzik Technical Enterprises will extend the list of the supported testers in the WITE32 Version 3.01. Some other models of Read-Write Analyzers, Guzik Spinstands, and Analog Front-End boards will be included. The complete list of compatible hardware will be announced in the WITE32 Release Notes Version 3.01.

1.8 Hardware No Longer Supported

Starting from the Version 3.00, Guzik Technical Enterprises completely discontinues the support of the following components in the WITE32 software:

- RWA-1601/1632 family of Read-Write Analyzers
- UP6 family of Analog Front-End boards
- SSI 4937A PRML chip adapter (Guzik P/N 27-304100)
- Venom PRML chip adapter (Guzik P/N 27-304980)
- Programmable 8101 filters for RWA 2550 (Guzik P/N 27-304290)
- ISA host adapter (Guzik P/N 27-301270)
- TMS host adapter (Guzik P/N 27-305290)

Note: If your existing test system configuration includes some of the hardware components listed above, you should use WITE32 Version 2.XX, or consider a hardware upgrade.

CHAPTER 2

WITE32 USER INTERFACE MODIFICATION

2.1 1701 Alignment Menu Dialog Box

The *1701 Alignment Menu* dialog box of the Spinstand Alignment Program (WDCP) is modified (the *Configure* | *Device* | *Run Alignment Program* menu items, the *Align Spinstand…* button).

1. The Off-Center alignment and the Auto alignment are no longer supported in the WITE32 software. The corresponding control items are removed from the *1701 Alignment Menu* dialog box.

2. The new *Disk Type* frame is added to the *1701 Alignment Menu* dialog box. This read-only information frame displays the selected disk type, as well as the minimum and maximum radiuses (see Figure 1).

   - The *Type* field shows the selected disk type
   - The *Minimum Radius* field shows the minimum radius for the current disk type selection.
   - The *Maximum Radius* field shows the maximum radius for the current disk type selection.

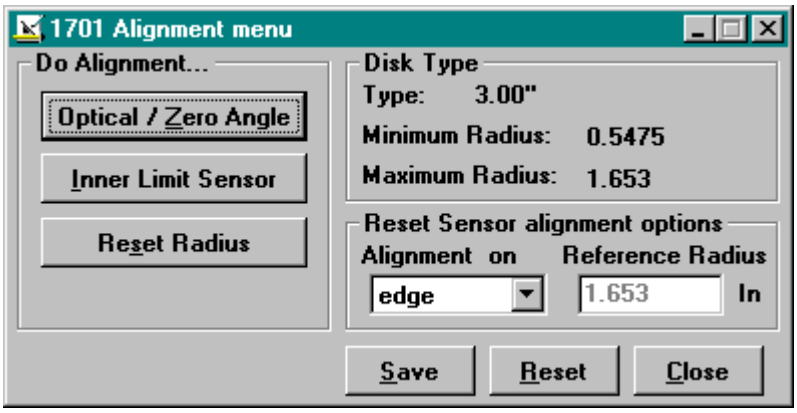

Figure 1: *1701 Alignment Menu* Dialog Box

2.2 Universal Preamp Configure Dialog Box

The *Universal Preamp Configure* dialog box (*Configure* | *Preamp…*) is modified.

1. The individual fields for preamplifier name, chip type, and interface type are replaced with a single list of all recognized Analog Front End boards. This list contains Fab number and board name for each board detected.

2. The following obsolete control items are removed from the *Universal Preamp Configure* dialog box:

   - The *Keep Power On* check box
   - The *Individual HA Power Control* check box

3. The *Adjust Write Data Timing Asymmetry* text box is renamed. Now, this is the *Adjustment (%)* text box.

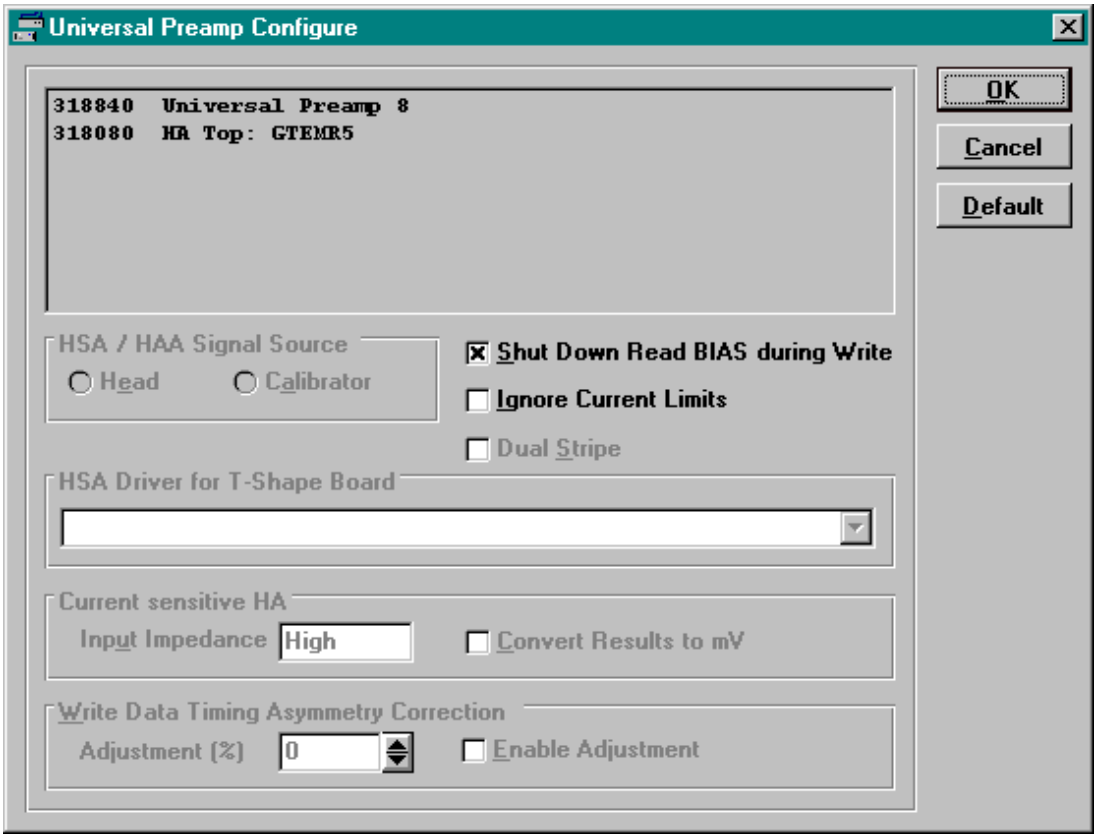

Figure 2: *Universal Preamp Configure* Dialog Box

2.3 System Control Dialog Box

The *Currents* frame of the *System* dialog box (*Control* | *System*) now includes the *Read* text box for editing the read bias in the *Current Bias Mode* (mA) and the *Read* text box for editing the read bias in the *Voltage Bias Mode* (mV). If the head amplifier supports both of these modes, you can select the bias mode in the *Head Amplifier Parameters* dialog box (*Control* | *Head Amp*).

Note: You can edit the read bias value only for the mode, which is currently selected in the *Head Amplifier Parameters* dialog box. Another *Read* text box remains disabled until you change the bias mode.

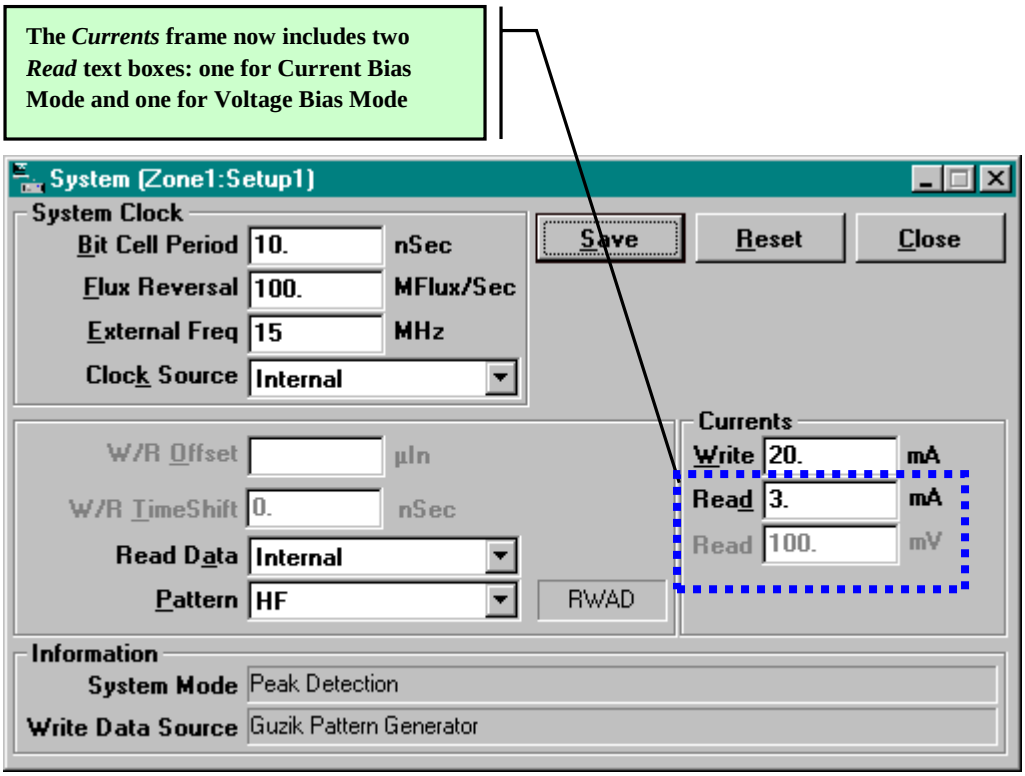

Figure 3: *System* Dialog Box

2.4 Gate and Track Format Dialog Box

The following new items are added to the *Gate and Track Format* dialog box (*Control* | *Gate and Track Format*):

- The *Always Full Size* check box in the *Read Gate* frame allows you to set the Read Gate to the maximum size available for the currently selected track format and Write Gate setting.
- The *Always Full Size* check box in the *Write Gate* frame allows you to set the Write Gate to the maximum size available for the currently selected track format.

  Select the *Always Full Size* check boxes, and the WITE32 automatically reprograms the gates to the maximal lengths when the system configuration is changed. For example, if you change the number of sectors, the system frequency, or the current pattern, the maximal gate length will be also adjusted.

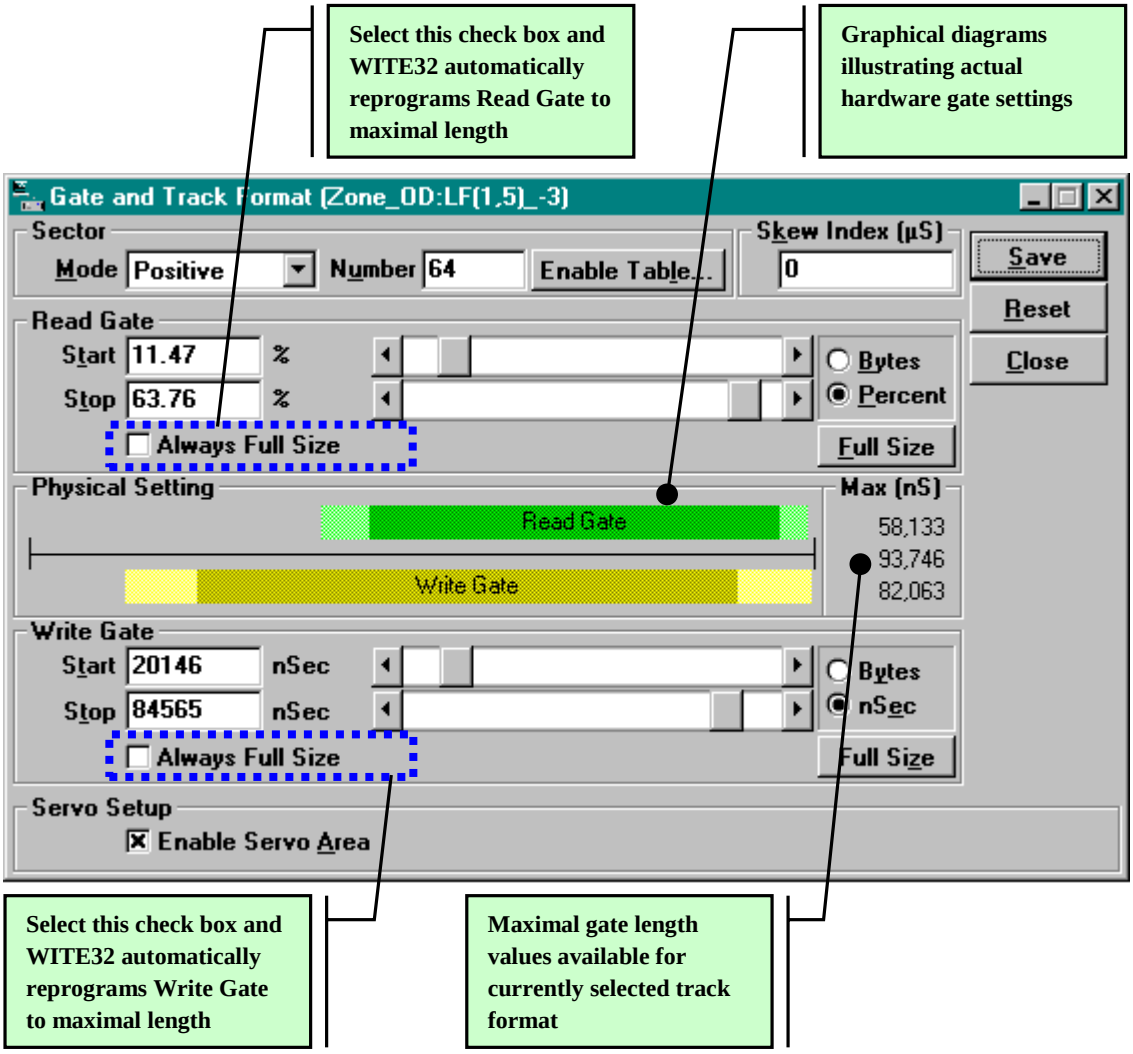

Figure 4: *Gate and Track Format* Dialog Box

- *The Physical Setting* frame displays the graphical diagrams illustrating the actual hardware gate settings and includes the following elements:

  The black line in the middle shows the total track length (in non-sector mode), or sector length (in sector modes).

  The top *Read Gate* indicator shows the maximal read gate length and the position available (light green color), and the current read gate setting (dark green color) relative to the track/sector length.

  The bottom *Write Gate* indicator shows the maximal write gate length and the position available (light yellow color), and the current write gate setting (dark yellow color) relative to the track/sector length.

  The scroll bars in the *Read Gate* and *Write Gate* frames adjust the gate lengths. The new gate lengths are set relative to the maximal gate lengths and displayed in the *Physical Setting* frame as the dark green and dark yellow color bars.

  Note: The scroll bars in the *Read Gate* and *Write Gate* frames become disabled, if you select the *Always Full Size* check boxes.

- *The Max (ns)* frame displays the maximal gate length values, in nanoseconds, available for the currently selected track format:

  The upper number is the maximum read gate length.

  The middle number is the track/sector length.

  The lower number is the maximal write gate length.

2.5 Filter Dialog Box

The *Filter* dialog box (*Control* | *Filter*) allows you to select a default filter. The default filter applies to the WITE32 tests, which do not have their own filter control options.

Note: The filter selection is different for different zones/setups.

The following hardware features affect the options available in this dialog box:

- The filters installed in the slots on the Main Filter Matrix (MFM) board in the Analog Box
- The ability of the test system to perform the digital measurements (for the RWA 2585 family only)

Note: The filter parameters specified in a test configuration dialog box usually override the filter selection defined in the *Filter* dialog box. Check the test descriptions to understand how the filter selection is done for each particular test. Please see *Standard Test Descriptions Engineer's Reference*, *747 Test Descriptions Engineer's Reference*, *PRML Test Descriptions Engineer's Reference*, and *GMA Test Descriptions Engineer's Reference.*

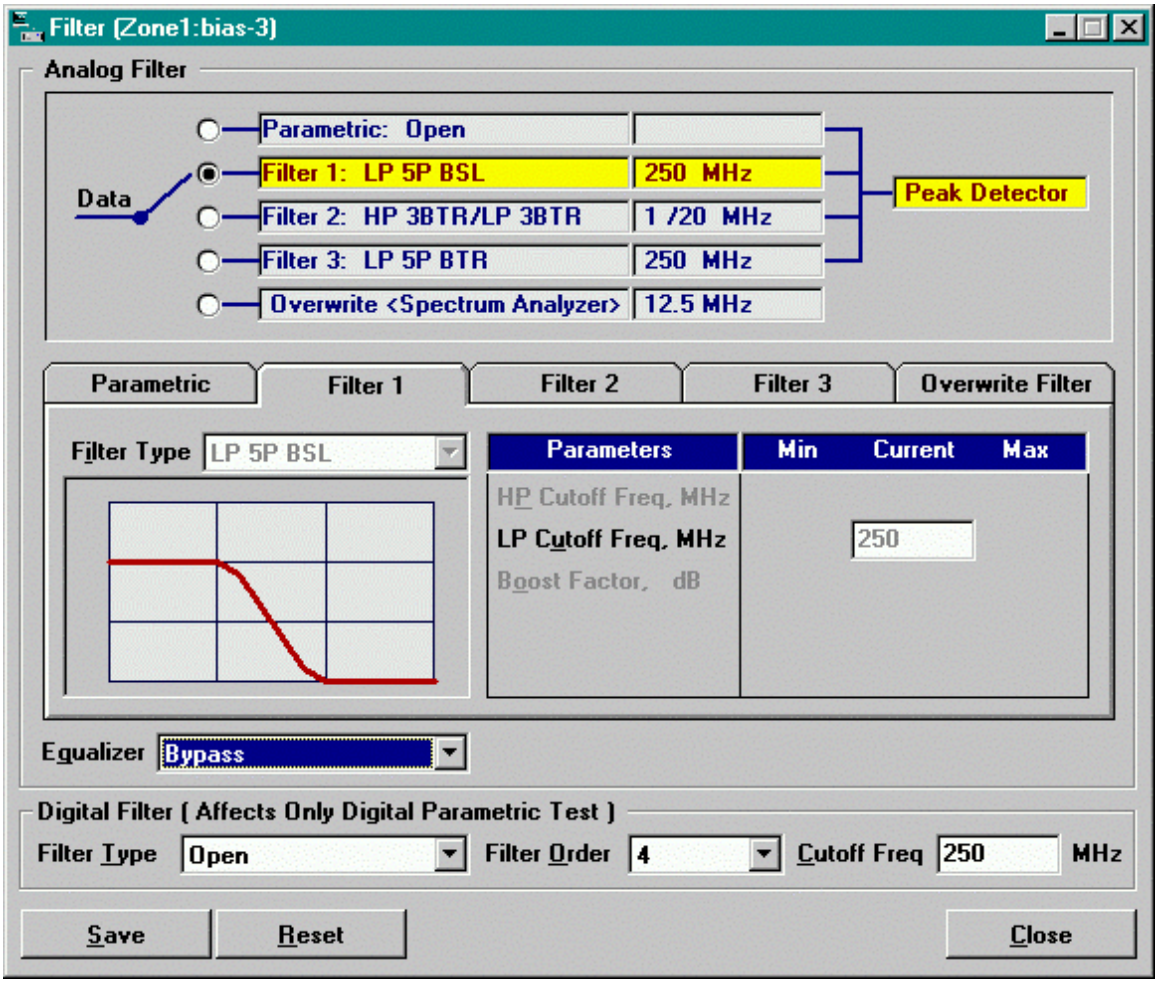

Figure 5: *Filter* Dialog Box

2.5.1 Analog Filter Frame

The *Analog Filter* frame reflects the current filter configuration and provides you with control over the filters installed on the Main Filter Matrix board in the Analog Box. The frame contains the following items:

- The *Filter Slot Selector* switches the analog data multiplexer to one of the filters installed on the Main Filter Matrix (MFM) or to the spectrum analyzer. The text fields display brief information on the filters available in the system (slot, filter type, cutoff frequency). Yellow background highlights the currently selected filter slot. The WITE32 will use the filter installed in this slot as the default one.

  To select a new system filter, click the radio button corresponding to the text box displaying the filter, which you want to use as a default one for the specified zone/setup.

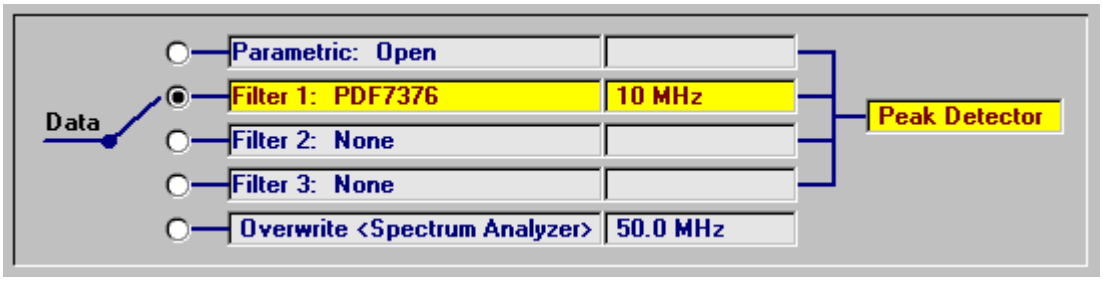

Figure 6: *Filter Slot Selector* Frame

- The *Filter* tabs contain more detailed information about the filters installed on the MFM and provide some additional options for the filter control. Each tab corresponds to one designated filter slot. When you choose a slot by the *Filter Slot Selector*, the corresponding *Filter* tab is selected automatically.

  On each *Filter* tab you can select a new filter type in the *Filter Type* drop-down list (for the *Edit* mode only), and edit the value in the *Current* text field for the *Boost Factor*, *HP Cutoff Frequency*, or *LP Cutoff Frequency* parameters of a programmable filter.

  Note: You can change the cutoff frequencies and the boost factor only for programmable filters or the PDF 7376 programmable differentiator filter.

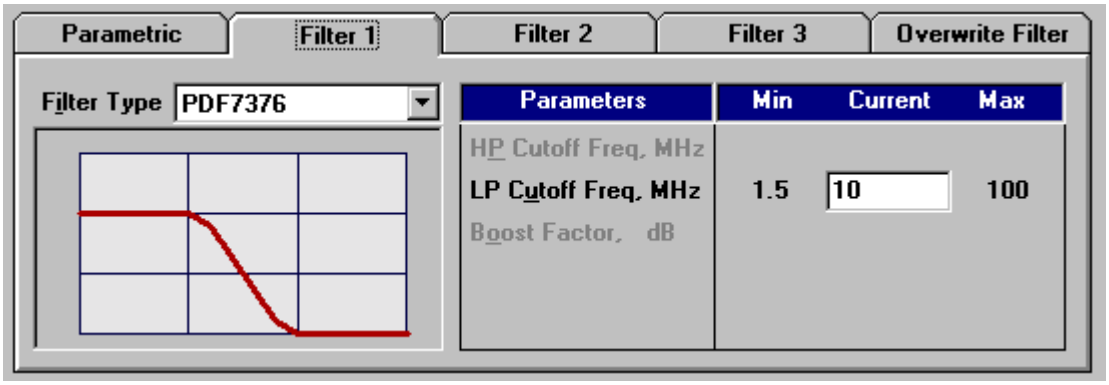

Figure 7: *Filter* Tab

- The *Overwrite Filter* tab allows you to specify up to eight different overwrite frequencies for the Spectrum Analyzer. You can select one frequency as a default parameter of the Spectrum Analyzer in the *Frequency* combo box (see Figure 8).

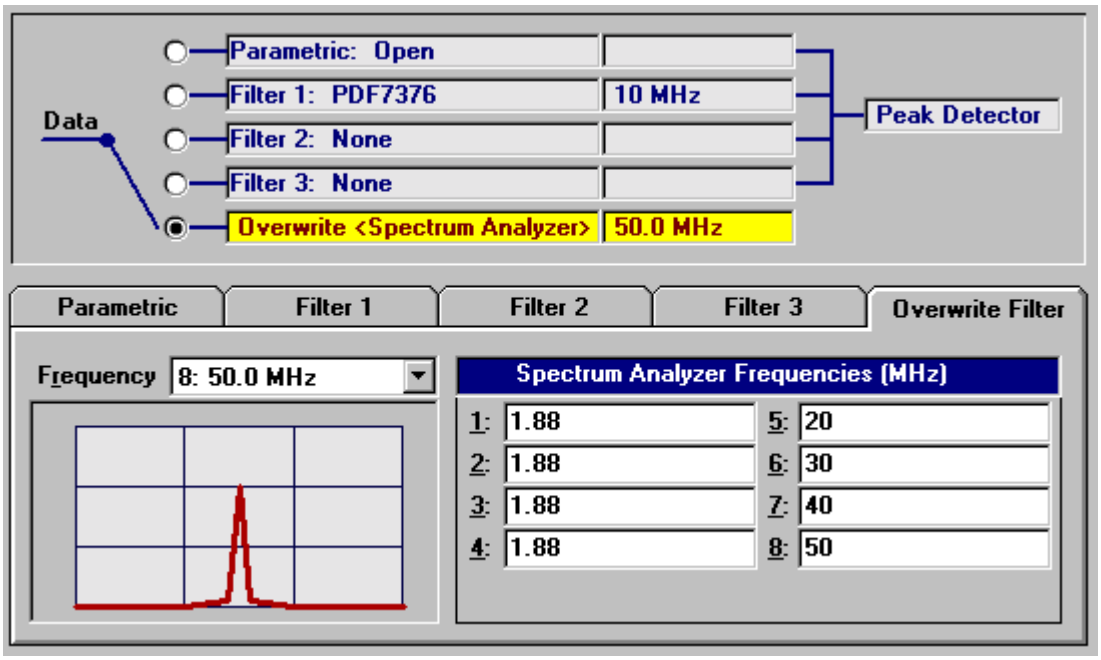

Figure 8: *Overwrite Filter* Tab

- The drop-down list in the *Equalizer* text field (see Figure 5) allows you to determine whether to bypass the equalizer hardware in the Analog Box or use it. This field is disabled, if the equalizer is not installed in the system.

2.5.2 Digital Filter Frame

The *Digital Filter* frame allows you to specify the parameters of a digital filter. This option is available, if the Guzik digital channel is installed in the system (RWA-2585 family). Only the Digital Parametric test utilizes the digital filter.

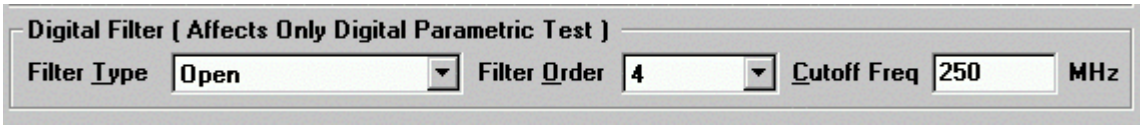

Figure 9: *Digital Filter* Frame

There are the following items in the *Digital Filter* frame:

- The drop-down list in the *Filter Type* text field allows you to make a digital filter type selection. The following digital filter types are now available:

  1. The *Open* filter has a flat frequency response and can be used when the maximum bandwidth is required.

  2. The *LP Butterworth* filter is a low-pass filter with maximum flatness of the frequency response in the passband.

  3. The *LP Bessel* filter is a low-pass filter with minimum phase distortions in the passband.

- The options from the drop-down list in the *Filter Order* text field specify the order of the filter. Filter order is the number of poles of the filter. The frequency response of N-th order low pass filter decreases by 20*N dB per decade above the cutoff frequency. The higher the order of the filter, the sharper the frequency response. The WITE32 software supports the filters of 3rd, 4th, 5th and 6th orders.

  Note: When you select the *Open* filter, WITE32 will ignore the parameter specified in the *Filter Order* text field.

- The parameter typed in the *Cutoff Freq* text field specifies the cutoff frequency of the filter. This frequency is measured on -3dB level and has the valid range from 60 MHz to 400MHz for the RWA 2585 family.

  Note: When you select the *Open* filter, WITE32 will ignore the parameter specified in the *Cutoff Freq* text field.

2.5.3 Control Buttons

The *Close* button closes the dialog box. If the *Save* button hasn't been pressed after any changes in the dialog box, the program prompts to save the parameters, or abandon the changes.

The *Save* button saves parameters to database.

The *Reset* button restores the parameters from the database.

2.5.4 Different Filter Setups Warning

Every time when you open the *Filter* dialog box, the system automatically compares the current filter configuration in the hardware with the corresponding parameters in the product database. If there are any differences between them, the warning message (see Figure 10) appears on a computer display.

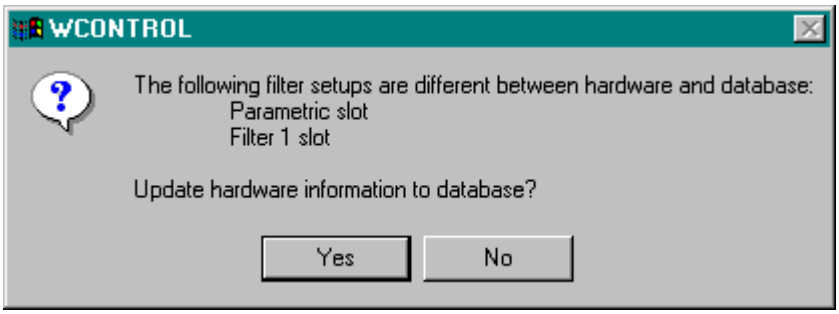

Figure 10: Different Filter Setups Warning

There are two buttons in this warning message dialog box:

- Press the *Yes* button to update the hardware information stored in the product database.
- Press the *No* button to keep your database not updated.

2.6 Gain Control Dialog Box

The *Gain* dialog box (*Control* |*Gain*) is redesigned in the WITE32 Version 3.00.

The *Gain* dialog box allows you to control the *Main* gain and the *Overwrite* gain and the *Analog Front End* gain. To change the gain, select the *Control* | *Gain* menu item from the main menu of the *Engineering Dashboard* dialog box. The *Gain* dialog box appears:

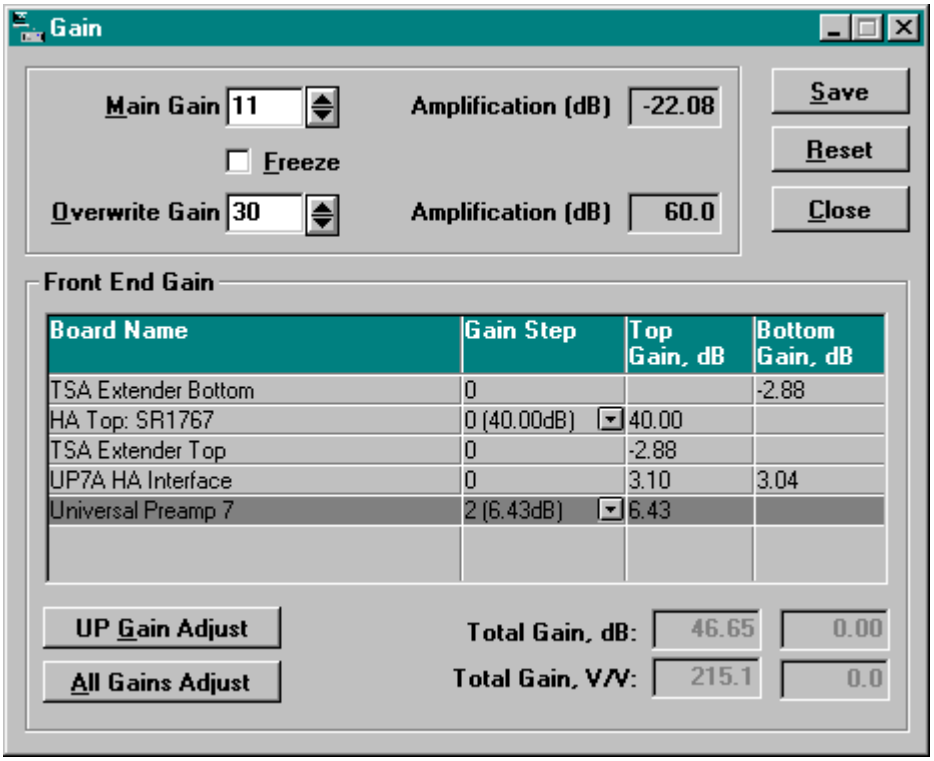

Figure 11: *Gain* Dialog Box

- The *Main Gain* text box sets the level of the MFM board gain. Each gain step is equivalent to -1 dB for RWA2002/2003/2004 or –2 dB for RWA2550/2585. Use the increment/decrement arrows at the right of the box to increase or decrease the value in the box. The read-only *Amplification (dB)* text box shows the actual amplification of the Main Filter Matrix (MFM) in dB.

- The *Overwrite Gain* text box sets the level of the Spectrum Analyzer gain. Each gain step is equivalent to +2dB. Use the increment/decrement arrows at the right of the box to increase or decrease the value in the box. The read-only *Amplification (dB)* text box shows the actual amplification of Spectrum Analyzer in dB.

- The *Freeze* check box enables or disables the gain adjustment during TAA measurements. Select the *Freeze* check box, to disable the real-time gain adjustment and keep the gain level frozen as specified in the *Main Gain* and *Overwrite Gain* text boxes.

- The *Front End Gain* table contains a complete list of the Analog Front End boards. The information about the board name, a current gain step and the amplification in dB is shown in the table. There is a combo box with a list of gain values in the *Gain Step* column for all boards, which have two or more gain steps. The board amplification can be changed using this combo box. The *Total Gain, dB* read-only text box and the *Total Gain, V/V* read-only text box show the total amplification for the top and bottom channels of the Front End in dB and V/V.

- The *UP Gain Adjust* button adjusts the Universal Preamplifier (UP) amplification to get the nominal level of the output read signal. The nominal level is about 0dBm differential at the output of the Universal Preamplifier.

- The *All Gain Adjust* button adjusts the Universal Preamplifier amplification, the HA/HSA/HAA, MFM amplification to get nominal output signal.

- The *Save* button saves parameters to database.

- The *Reset* button restores the parameters from the database.

- The *Close* button closes the dialog box. If the *Save* button hasn't been pressed after any changes in the dialog box, the program prompts to save the parameters, or abandon the changes.

The *Main* and *Overwrite Gain* values are not saved to the product database. The *Front End Gains* are not saved to the database either, except for the Universal Preamplifier and HA/HSA/HAA gains. The HA/HSA/HDA gain is saved in the current Setup for the current Zone.

2.7 Scope Point Dialog Box

Various signals can be multiplexed to the RWA Scope Point 1 for the RWA-2550/2585 family and the RWA-2002 family. See the table below:

RWA 2550/2585 Family	*RWA 2000 Family*
None (no signal)	None (no signal)
Raw Read Data	PD Measurement Gate
Margin Error	SpAn Measurement Gate
Super/Extra Pulse Error	PD Discharge
Asymmetry/Noise	
Read Data	
Read Clock	

Various signals can be multiplexed to the RWA Scope Point 2 for the RWA-2550/2585 family and the RWA-2002 family. See the table below:

RWA 2550/2585 Family	*RWA 2002 Family*
None (no signal)	None (no signal)
Read Data	PD Measurement Gate
Read Clock	SpAn Measurement Gate
Super/Extra Pulse Error	PD Discharge
Asymmetry/Noise	
Margin Error	
Raw Read Data	

Note: In the tables: PD stands for Peak Detector, SpAn stands for Spectrum Analyzer.

Note: Your can find the detailed description of the signals listed in the tables in the manual provided with your Read-Write Analyzer.

Various signals can be multiplexed to the RWA Scope Point 3 for the RWA-2550/2585 family, or the scope points 3 and 4 for the RWA-2002 family. See the table below:

RWA 2550/2585 Family	*RWA 2002 Family*
None (no signal)	None (no signal)
Read Gate	Read Gate
Write Gate Head 0	Write Gate Head 0
Address Mark	Address Mark
Sector	Sector
4 MHz Clock	4 Mhz Clock
Write Enable	Write Enable
Index	Index
Read Op	Read Op
VCO Stop	VCO Stop
ENAMDET	ENAMDET
Lock To Data	Lock To Data
Read Gate Head 0	Read Gate Head 0
Read Gate Head 1	Read Gate Head 1
Write Gate Head 1	Write Gate Head 1
Drive Index	Drive Index
Drive Sector	Drive Sector
Clamp	Clamp
Servo Gate	Servo Gate
OPEN	OPEN
INSYNC	INSYNC
Write Gate Heads 0 & 1	Write Gate Heads 0 & 1
Software Sync. Point	Software Sync Point
Servo Zone	Servo Zone
Encoder Pulse	Encoder Pulse
Encoder Hard Sector	Encoder Hard Sector
Encoder Servo Sector	SYNC point
	Encoder Servo Sector

The state of the *Enable* checkbox in the *Scope Point* dialog box can be now saved to a product database. The enabled scope points may affect measurement accuracy. The following dialog box appears while starting WITE32, if the *Enable* check box was selected and the *Save* button was pressed ones during the last WITE32 session:

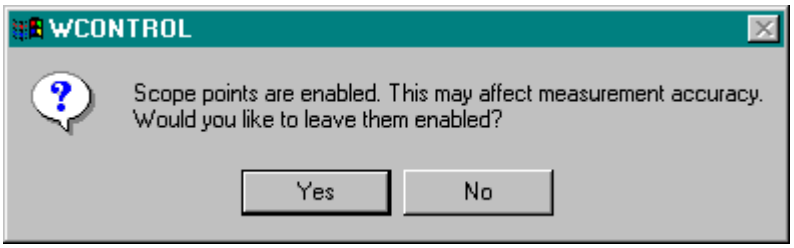

Figure 12: Scope Point Enabled Warning

Pressing the *Yes* button leads to no changes, and the dialog box shown above appears every WITE32 start until the *No* button is pressed, or the *Enable* check box is cleared in the *Scope Point* dialog box.

Pressing the *No* button disables scope points and saves the disabled status to the database.

2.8 Peak Detection Channel Dialog Box

The following obsolete control items are removed from the *Peak Detection Channel* dialog box (*Control | Peak Detection Channel*):

- The *BSA Window* text box
- The *Read Threshold* text box
- The *Extra Threshold* text box

2.9 Peak Detection Calibration

The Peak Detection Calibration procedure is now performed automatically on the system startup and at the beginning of each test, which requires such calibration.

The Peak Detection Calibration menu item is removed from the WITE32 *Calibration* menu. The Peak Detection Calibration test is not accessible from the production sequence either.

2.10 TAA Calibration

The *Internal Calibration* frame is moved from the *Measurement Options* dialog box (*Configure* | *Measurement Options*). Now this frame is located in the *TAA Calib* dialog box (*Calibration* | *TAA*).

Internal TAA calibration is performed automatically (if possible) when device is starting, or may be explicitly requested from the *TAA Calib* dialog box by pressing the *Calibrate* button in the *Internal Calibration* frame. You can also select or clear the *Use Internal Calibration* check box, to switch between internal and external calibration factors without actual recalibration.

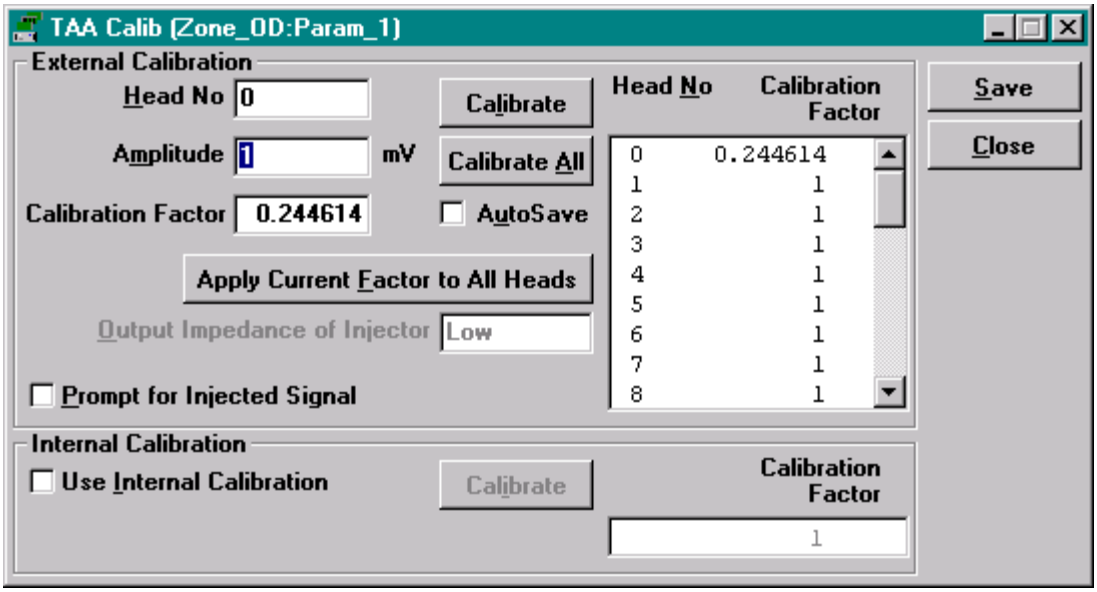

Figure 13: *TAA Calib* Dialog Box

2.11 Obsolete Options Removed from Calibration Menu

The following obsolete calibration options are removed from the *Calibration* drop down list on the main menu of the *Engineering Dashboard* dialog box:

- Bitshift calibration
- Precomp calibration
- Current calibration
- AutoEqu calibration

These calibrations are not accessible from the production sequence either.

2.12 Other Obsolete Controls and Tests Removed

1. The obsolete *Servo Head* selection frame is removed from the *System* dialog box (*Configure* | *System*).

2. The obsolete *Zone Type* selection frame is removed from the *Zone* dialog box (*Configure* | *Zone*).

3. The obsolete *Unit* selection control and the read-only *Maximum Unit* text box in the *Maximum Limit* frame are removed from the *Device* dialog box (*Configure* | *Device*).

4. The Bitshift analysis is no longer available in WITE32. The Bitshift Window test and the Bitshift Window Read-Only test are removed from the Composite tests group. The *Bitshift* option is also removed from the Saturation and Track Profile tests.

2.13 WITE32 Engineering Dashboard Modification

The following minor changes have been made in the *Engineering Dashboard* dialog box of the WITE32 Version 3.00:

1. The *Zone Setup* combo box is renamed to *Setup*.

2. The *Auto Loading* check box is renamed to *Auto Load*.

3. The *MFlux* edit box is renamed to *MFlux/S*.

2.14 Modification of Sampled Memory Access Dialog Box

The *Print* button and the *Dump Data* button in the *Sampled Memory Access* dialog box (*Control* | *Sampled Memory Access*) are replaced with the *Print* item and the *Dump Data* item in the *File* menu.

CHAPTER 3

FEATURES INTRODUCED IN WITE32

3.1 Modification of Servo Position Error Signal Acquisition and Analysis Test

The Servo Position Error Signal Acquisition and Analysis test (PES Analysis test) now supports a new method of Instantaneous Runout (IRO) calculation: *PES Acquisition from Data* (see Section 3.1.1).

The two methods of the IRO calculation are available in the WITE32 Version 3.00:

- Apply the *PES Acquisition from Servo* method to qualify the Servo written on the track. This method can be used only on spinstands with Guzik Servo 2 (Spinstand S1701B)
- Apply the *PES Acquisition from Data* method to qualify the head positioning and runouts in the Servo and/or Non-Servo modes. This method can be used on all Guzik spinstand models.

A new test results are also added to the output of the Result Processor (see Section 3.1.3).

Note: The Servo Position Error Signal Acquisition and Analysis test was originally introduced in the WITE32 Version 2.70 and described in the corresponding Release Notes.

3.1.1 PES Acquisition from Data Algorithm

In the case of *PES Acquisition from Data*, the system calculates IRO based on the amplitude of bursts written in odd and even sectors (see Figure 14).

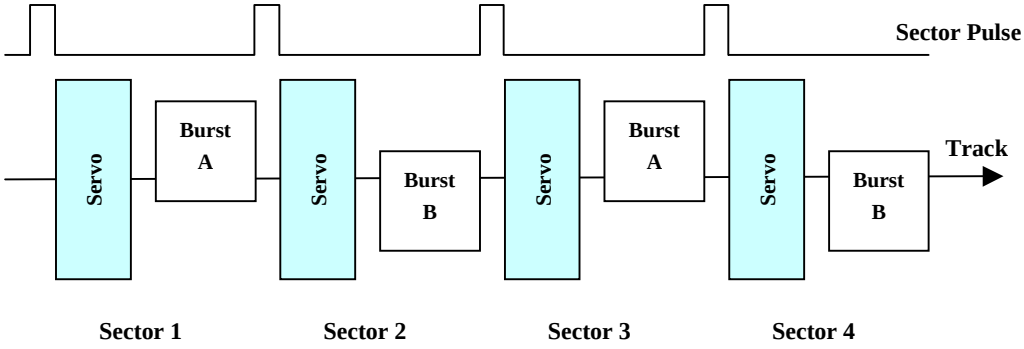

Figure 14: Track Format for *PES Acquisition from Data*

The new method uses the following algorithm:

1. The system writes two tracks (see Figure 15): one in odd sectors with the offset –RW/2 from the read element position and another one in even sectors with the offset +RW/2 from the read element position (where RW is the Reader Width).

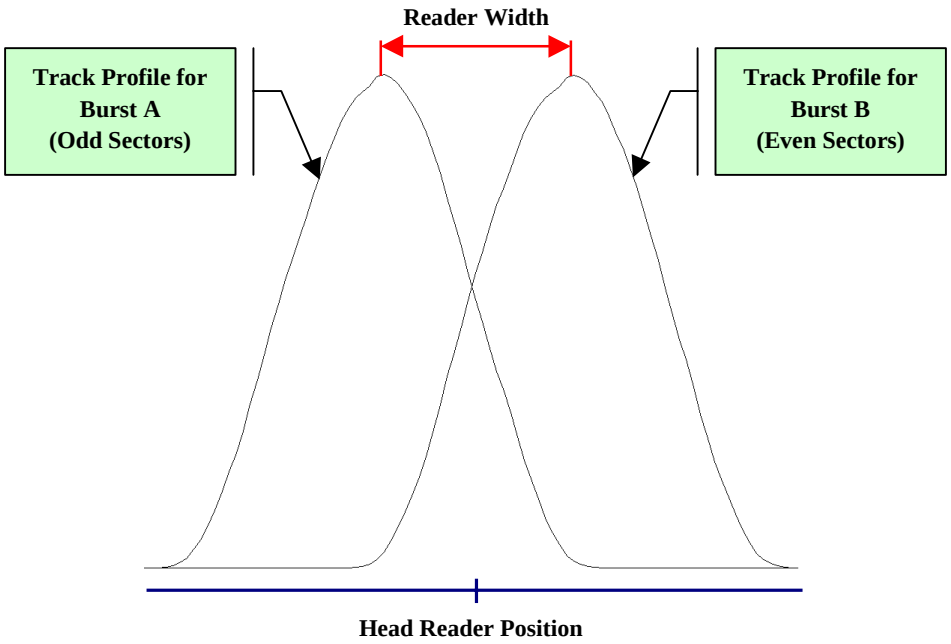

Figure 15: Signal Profile for PES Acquisition from Data

2. The system positions the read element of the head over the track center (where the amplitudes of the bursts A and B are approximately equal) and measures read signal amplitude in all sectors during the specified number of revolutions.

3. The IRO in the sector ***s*** on the revolution ***r*** is calculated as:

$$IRO_r^s = \frac{Amplitude_r^s - Amplitude_r^{s+1}}{Amplitude_r^s + Amplitude_r^{s+1}} * k$$

Where $Amplitude_r^s$ is the amplitude in the sector ***s*** on the revolution ***r***.

The IRO in the last sector ***S*** on the revolution ***r*** is calculated as:

$$IRO_r^S = \frac{Amplitude_r^S - Amplitude_{r+1}^1}{Amplitude_r^S + Amplitude_{r+1}^1} * k$$

Where $Amplitude_{r+1}^1$ is the amplitude in the first sector on the next revolution ***r+1***.

The coefficient ***k*** converts the result to $\mu Inch$.

3.1.2 PES Analysis Test Configuration Dialog Box

To assign the *PES Analysis* test to one of the *Configurable test buttons (Soft buttons)* on the *Engineering Dashboard* dialog box, position the mouse pointer over the *Configurable Test Button* where you want to assign the test and right-click the mouse. The list of all available tests appears. Select the *PES Analysis* test in the list and the button becomes labeled "PES Analysis".

To configure the *PES Analysis* test, press the *S (Setup)* button to the left of the *Configurable test button (Soft button)* labeled "PES Analysis".

The *PES Analysis* dialog box appears (see Figure 16):

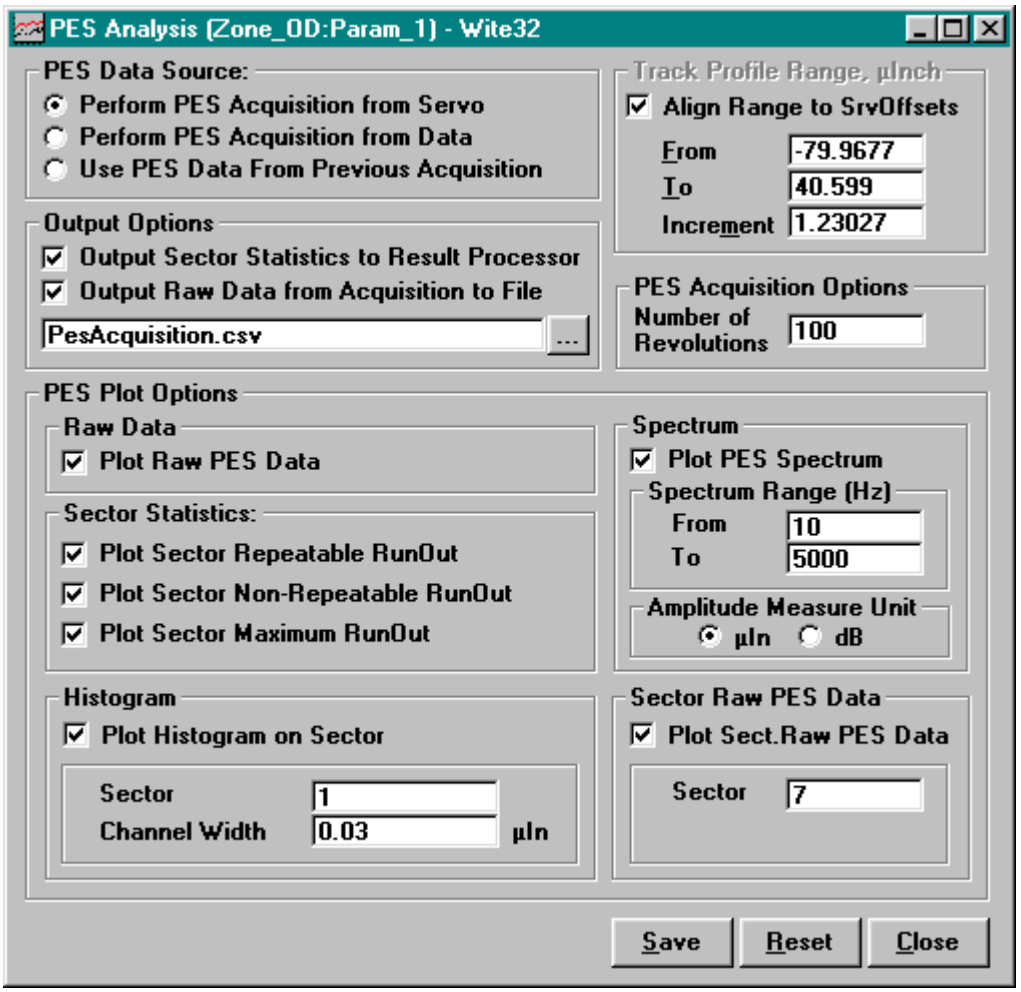

Figure 16: *PES Analysis* Dialog Box

There are the following new items in the *PES Analysis* dialog box (see Figure 16):

- The *Perform PES Acquisition from Data* radio button in the *PES Data Source* frame enables the *PES Acquisition from Data* algorithm.

- The *Track Profile Range, µInch* frame becomes enabled only when you select the *Perform PES Acquisition from Data* radio button in the *PES Data Source* frame. The controls in the frame configure the track profile parameters. The WITE32 software will use these parameters during the test to define the track width and the R/W offset:

The *Align Range to SrvOffsets* check box	Select this box to enable adjustment to the calibrated Servo offsets for the values specified in the From, To and Increment text boxes.
The *From* text box	Specify the initial point of the range in this box (micro inches).
The *To* text box	Specify the end point of the range in this box (micro inches).
The *Increment* text box	Specify the increment offset points of the range in this box (micro inches).

3.1.3 Test Results Area of Result Processor for PES Analysis Test

There are new fields in the Test Results Area of the PES Analysis test:

Name of Field	*Comments*
AvgNRRO	Average Non-Repeatable Run Out (µInches).
AvgSectorMaxRO	Average Sector Max Run Out (µInches).
MaxSectorMaxRO	Maximum Sector Max Run Out (µInches).
MaxSectorRRO	Maximum Sector Repeatable Run Out (µInches).
MinIRO	Sector Minimum Instantaneous Run Out
MaxIRO	Sector Maximum Instantaneous Run Out

The following results have been already defined in the Release Notes for the WITE32 Version 2.70, but are important for the new result definitions:

- Sector Maximum Runout (SectorMaxRO) is a maximum deviation of the IRO values calculated for ***R*** revolutions in the specified sector ***s***.

  SectorMaxRO is calculated as:

  $$SectorMaxRO_s = \max(IRO^s_{r=1..R}) - \min(IRO^s_{r=1..R})$$

- Sector Repeatable Runout (SectorRRO) is the average of the IRO values calculated for ***R*** revolutions in the specified sector ***s***.

  SectorRRO is calculated as:

  $$SectorRRO_s = \frac{\sum_{r=1}^{R} IRO^s_r}{R}$$

- Sector Non-Repeatable Runout (SectorNRRO) is a standard deviation of the IRO values calculated for ***R*** revolutions in the specified sector ***s***.

  SectorNRRO is calculated as:

  $$SectorNRRO_s = \sqrt{\frac{\sum_{r=1}^{R} (IRO^s_r - SectorRRO)^2}{R-1}}$$

The following list defines the new results of the PES Analysis test:

- Minimum Instantaneous Runout (MinIRO) is the minimum value of IRO during the entire PES acquisition.

  MinIRO is calculated as:

  $$MinIRO = \min(IRO^s_r)$$

- Maximum Instantaneous Runout (MaxIRO) is the maximum value of IRO during the entire PES acquisition.

  MaxIRO is calculated as:

  $$MaxIRO = \max(IRO_r^s)$$

- Maximum Sector Repeatable Runout (MaxSectorRRO) is the maximum of the SectorRRO values calculated for all sectors along the track.

  MaxSectorRRO is calculated as:

  $$MaxSectorRRO = \max(SectorRRO_s)$$

- Maximum Sector Maximum Runout (MaxSectorMaxRO) is the maximum of the SectorMaxRO values calculated for all sectors along the track.

  MaxSectorMaxRO is calculated as:

  $$MaxSectorMaxRO = \max(SectorMaxRO_s)$$

- Average Non-Repeatable Runout (AvgNRRO) is the average of the SectorNRRO values calculated for all ***S*** sectors along the track.

  AvgNRRO is calculated as:

  $$AvgNRRO = \frac{\sum_{s=1}^{S} SectorNRRO_s}{S}$$

- Average Sector Maximum Runout (AvgSectorMaxRO) is the average of the SectorMaxRO values calculated for all ***S*** sectors along the track.

  AvgSectorMaxRO is calculated as:

  $$AvgSectorMaxRO = \frac{\sum_{s=1}^{S} SectorMaxRO_s}{S}$$

3.2 Scale Correction Test Modifications

The Scale Correction test modifications made in the WITE32 software Version 3.00 improve the test performance:

- In the WITE32 software Version 3.00, the Scale Correction can be done on a user-specified track. This is different from Version 2.70, where the correction parameters are measured only in the reset position of the spinstand. To specify the track, use the new *Track* text box added to the *ScaleCorrection* dialog box (see Figure 17).

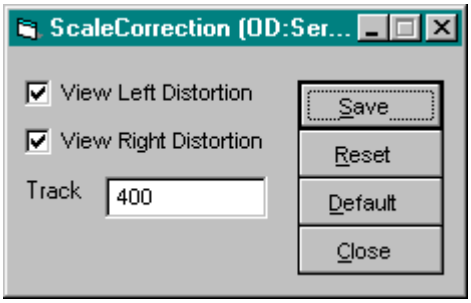

Figure 17: *ScaleCorrection* Dialog box

- The modified Scale Correction test algorithm for the Spinstands S1701B applies an additional run-time scale correction after the test calculates the scale parameters on a user-specified track. The additional correction will be done during the head movement from one track to another. This dynamical algorithm increases the accuracy of the scale correction.

3.3 Grading System Modifications

The result names are sorted in ascending alphabetical order in the *Grading System – Limits* dialog box.

Note: These names are the result descriptions, not the internal result names as in previous WITE32 versions.

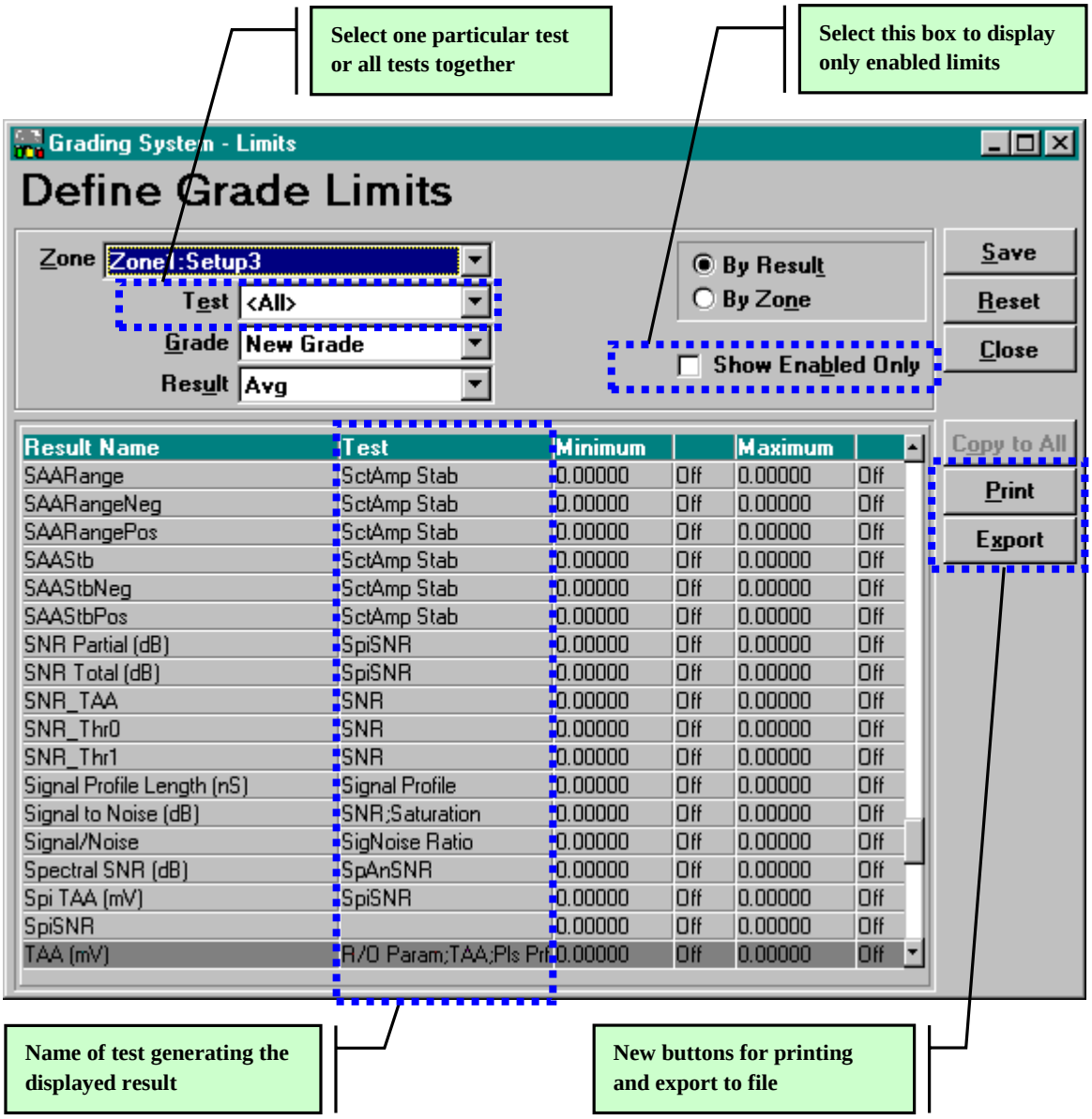

Figure 18: *Grading System – Limits* Dialog Box

The following new control items are added to the *Grading System – Limits* dialog box (see Figure 18):

- Use the *Test* list box to specify test results for displaying. You can choose the results from all tests installed in the system, or from one selected test.
- The *Test* column in the table of limits shows the name of the test generating the displayed result.
- Select the *Show Enabled Only* check box to display in the table only the limits, which were enabled.
- Press the *Print* button to print the grading limits table on the default printer.
- Press the *Export* button to export the content of the grading limits table to a file. The exported data have the comma delimited ASCII format same as in a regular WITE32 ASCII result files.

3.4 Balancing Test Modifications

The following new cap types have been added in the *Balancing* test:

Cap Type	*Cap Name*	*Media Size*
M	M [balancing cap: 3.5]	ID 0.9853”/25mm, OD 3.739”/95mm
N	N [balancing cap: 2.5]	ID 0.7874”/20mm, OD 2.559”/65mm
O	O [balancing cap: 1.8]	ID 0.472” /12mm, OD 1.889”/48mm

Note: For additional information please refer to the *Chuck and Balancing Cap with Six Balancing Screws. Installation, Calibration, and Balancing Guide* (Guzik P/N 02-107165-02), and the *Chuck and Balancing Cap with Three Balancing Screws. Installation, Calibration, and Balancing Guide* (Guzik P/N 02-107166-01).

3.5 PopTransition Result in Popcorn Test

The new result named *PopTransition* is added to the text result output of the popcorn test.

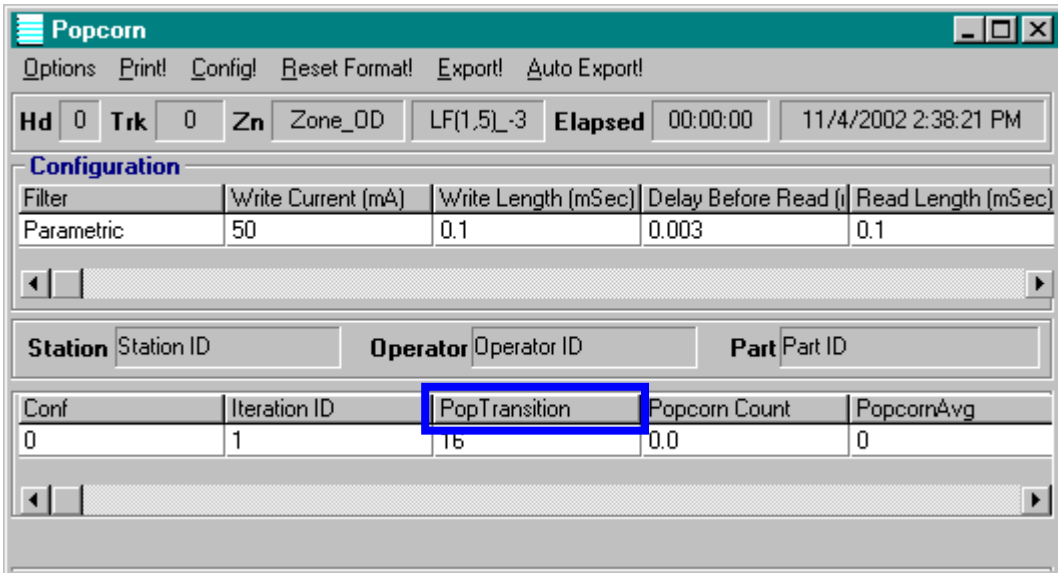

Figure 19: *Popcorn* Test Result Output

This result is a total number of write-to-read transitions performed during the test. The result was added since the actual and the estimated values of the *Transitions per Iteration* parameter shown in the *Popcorn* test configuration dialog box can differ.

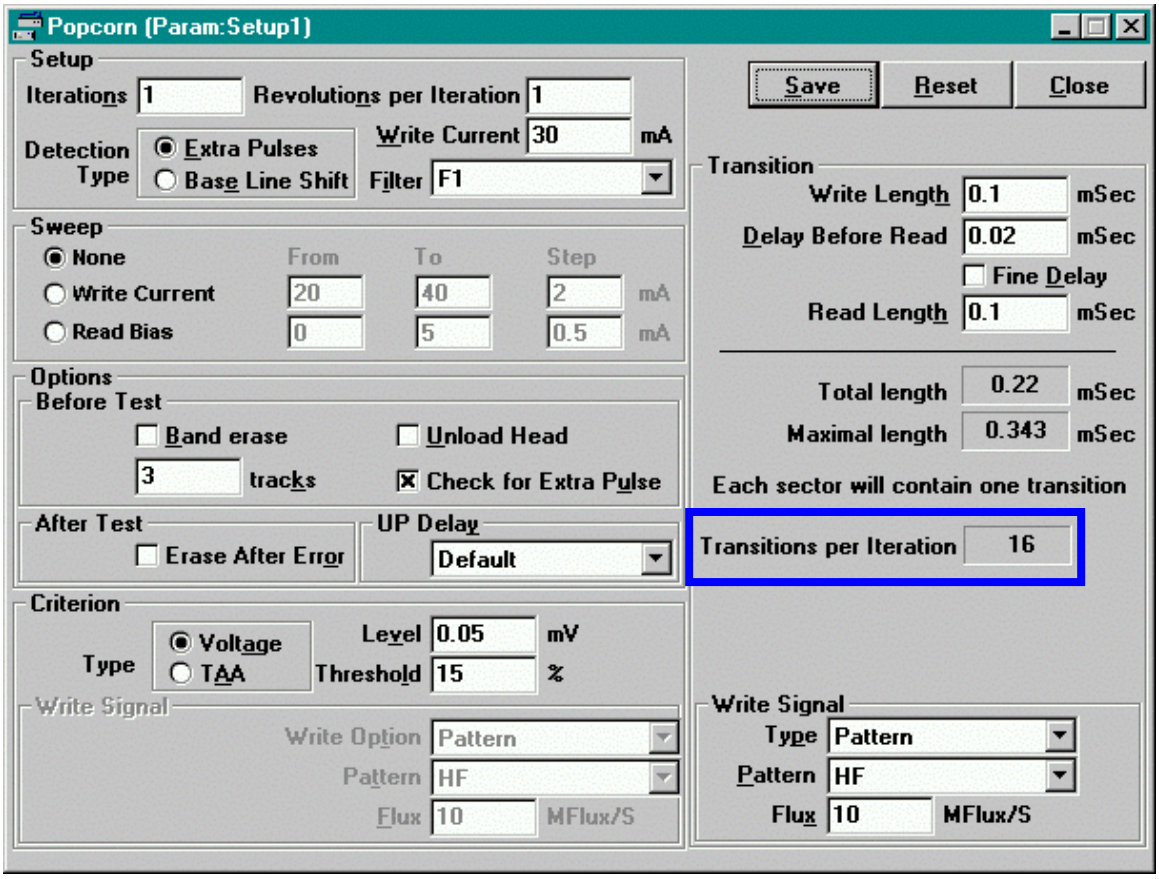

Figure 20: *Popcorn* Dialog Box

3.6 SNR_TAA Result in Signal to Noise Test

The new *SNR_TAA* column is added to the result output dialog box of the Signal to Noise (SNR) test. This column displays the TAA value of the written signal, which is used for the SNR calculation.

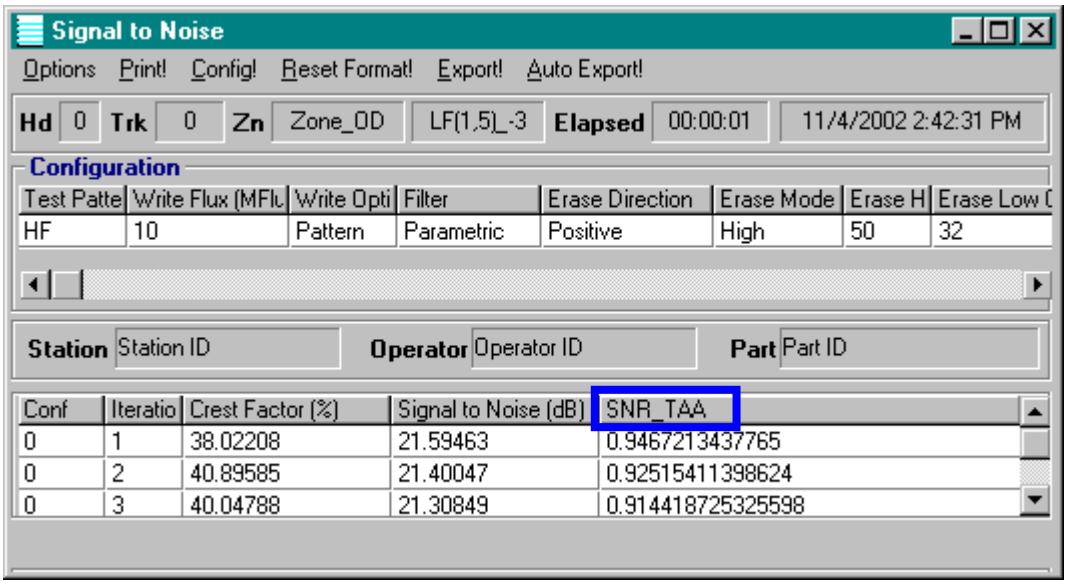

Figure 21: *Signal to Noise* Test Result Output

3.7 Spinstand and Servo Modifications

3.7.1 Set Optimal Servo Range Operation

The new *Set Optimal Servo Range* operation is implemented in WITE32. The purpose of this operation is the Servo Range correction for testing the heads with the Read-Write offset value significantly changing in production from head to head, and also to optimize Servo Range for the tests, which have multiple write locations.

In the previous versions of WITE32, the *Optimize Servo Range* checkbox in the *Servo Calibration* dialog box, when enabled, allowed recalculating the *From* and *To* servo range parameters in the *Write Servo Configure* dialogue box. However, the range was fixed and equal to ±1.75*(Write Width) around the center of the track, and covered only single write location (zero offset). Such algorithm does not provide required servo range for the Triple Track and 747 tests, which have multiple write locations.

The new *Set Optimal Servo Range* operation allows you to configure the ranges of write and read locations for testing.

Figure 22 shows the *Operation [OptSrvRng]* dialog box for configuring the *Set Optimal Servo Range* operation.

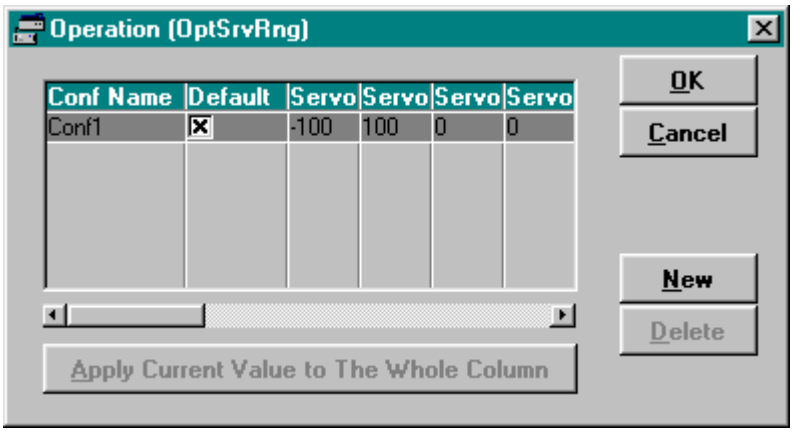

Figure 22: *Operation [OptSrvRng]* Dialog Box

There are four configuration parameters of the *Set Optimal Servo Range* operation:

- *ServoRange_WriteFrom*
- *ServoRange_WriteTo*
- *ServoRange_ReadFrom*
- *ServoRange_ReadTo*

The *ServoRange_WriteFrom* and the *ServoRange_WriteTo* parameters define the range of write locations for the tests in µInch. For example, if the 747 Test is configured with the Adjacent Track Offset range from 0 to 50 *µInches*, then you should set *ServoRange_WriteFrom* to 0 *µInch*, and the *ServoRange_WriteTo* to 50 µInch.

The *ServoRange_ReadFrom* and the *ServoRange_ReadTo* parameters define the range of read locations for the tests in µInch. For example, if the Track Profile Test is configured with the Track Profile range from -40 to +30 *µInches*, then you should set *ServoRange_ReadFrom* to -40 *µInch*, and the *ServoRange_WriteTo* to +30 µInch.

The default values and the range of valid settings for the parameters are listed in the table below.

Parameter	*Default Value*	*Minimum Value*	*Maximum Value*
ServoRange_WriteFrom	*0 µInches*	*–500 µInches*	*0 µInches*
ServoRange_WriteTo	*0 µInches*	*0 µInches*	*500 µInches*
ServoRange_ReadFrom	*–100 µInches*	*–500 µInches*	*0 µInches*
ServoRange_ReadTo	*100 µInches*	*0 µInches*	*500 µInches*

The *Set Optimal Servo Range* operation calculates the *From* and *To* servo range boundaries using the four configuration parameters and applies them to the spinstand:

- *From = min (System W/R Offset + ServoRange_ReadFrom, ServoRange_WriteFrom)*
- *To = max (System W/R Offset + ServoRange_ReadTo, ServoRange_WriteTo)*

The new servo margins are aligned to the servo step size.

Note: The *Set Optimal Servo Range* operation itself does not extend or squeeze the range of existing servo information written on a disk, so you have to perform the *Servo Erase* operation and the *Write Servo* operation to use the new settings.

The following operations must be inserted at the beginning of the production sequence if you want to use the *Set Optimal Servo Range* operation:

- The *Servo Calibration* operation. Make sure that the *Program WR Offset* check box in the Servo Calibration dialog box is selected, the *Calibrate Main Servo* check box is cleared, and the *Optimize Servo Range* check box is cleared.
- The *Set Optimal Servo Range* operation
- The *Servo Erase* operation
- The *Write Servo* operation

3.7.2 Servo Calibration

1. The new *Erase Track Before Calibration* checkbox is added to the *Servo Calibration* dialog box. This checkbox is enabled by default, so the current track will be erased before the calibration procedure. In order to prevent running the servo calibration on a track with previously written data, we recommend keeping this option enabled (the check box selected), unless you insert the *Servo Calibration* operation in a product sequence right after the *Band Erase* operation.

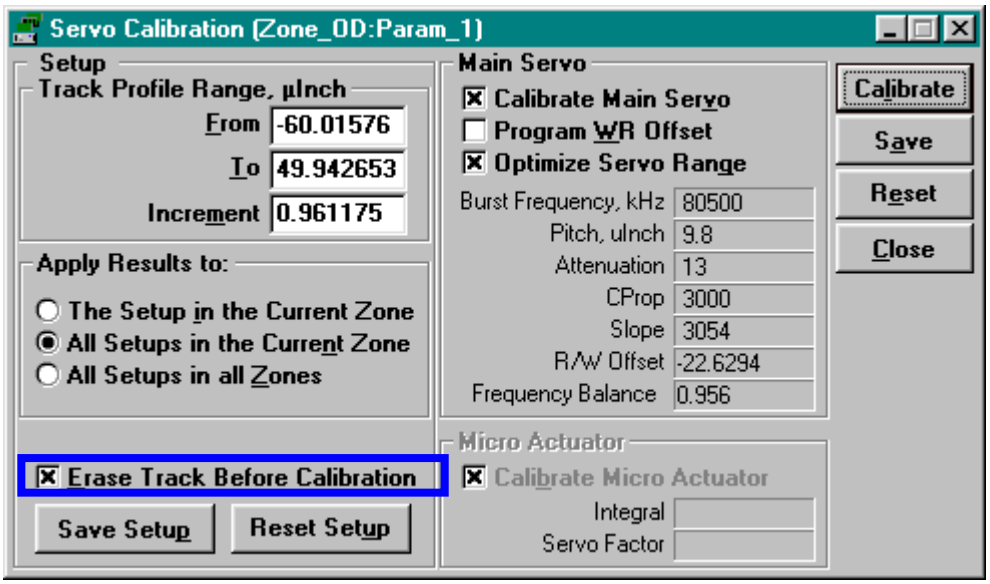

Figure 23: *Servo Calibration* Dialog Box

2. A new warning message appears in the case, when you perform the *Servo Calibration* operation and the measured Servo Frequency Balance value is out of 0.5–2.0 range. The message says "Servo Frequency Balance X is out of bound (must be within 0.5–2.0 range). Check TAA resolution of the head." This message is a warning-only message and the Servo will work after that. However, it is recommended to check parametric characteristics of the head to verify SNR, TAA, and TAA Resolution.

3.7.3 Spindle Rotation Direction Warning

If the direction of the spindle rotation, specified in the Spinstand Parameters dialog box of the Spinstand Alignment Program (WDCP), does not correspond to the direction of the rotation, specified in the Product Parameters dialog box, the error message “Direction of rotation specified in setup Spinstand Parameters doesn't correspond to direction of rotation specified in setup Product Parameters” appears after you press the Start Device button.

3.7.4 Spinstand Alignment Program Update

The new 2.76” disk option is added to the *Type* list in the *Disk Type* frame of the *Product Parameters* dialog box in the Spinstand Alignment Program (WDCP).

3.7.5 Additional Wait Time for Spinstand Settling

An *Additional Wait Time* for spinstand settling is now applied to all spinstand movement operations, including the *Fast Offset* movements. In the previous WITE32 versions only the *Regular Offset* operations were affected by this parameter.

To set the value of the *Additional Wait Time* for spinstand settling:

1. Select *Configure* | *Device* menu item from the *Engineering Dashboard* dialog box of WITE32, to open the *Device Configure* dialog box. Press the *Run Alignment Program* button in this box. The *Spinstand Alignment* dialog box (WDCP) appears.

2. Select the *File* | *Factory settings mode* item on the menu bar of the *Spinstand Alignment* dialog box (WDCP) to switch to the *Factory Settings* mode. The *Set Access Level Password* dialog box appears. You should type the special password, provided by the Guzik Technical Enterprises, in the *Set Access Level Password* dialog box to enter the mode.

   In the *Factory Settings* mode, some additional items appear in the *Parameters* drop-down menu of the *Spinstand Alignment* dialog box.

3. Select the *Parameters* | *Spinstand Parameters* menu item in the *Spinstand Alignment* dialog box (WDCP). The *Spinstand Parameters* dialog box appears. Press the *Set Closed Loop Parameters* button in this box to open the *Closed Loop Parameters* dialog box, where you can change the value of the *Additional Wait Time* for spinstand settling.

3.8 MR Impedance Calibration

The *Use External Calibration* check box is added to the *MR-Impedance* configuration dialog box (*Calibration* | *MR-Impedance*). Select this check box and the MR Impedance test will use the calibration coefficients from the calibration file. Otherwise, the WITE32 will perform MR Impedance test without using the calibration coefficients.

3.9 WDK Update

If you are currently using the custom modules created with WDK32, you must have the WDK32 Version 3.00 to recompile your modules.

3.10 Pattern File Modifications

The patterns with short preambles are designed for the WITE32 Version 3.00 to increase the maximal available number of sectors. The pattern files reside in the default product directory (DEFAULT) and will not be copied to the product directory automatically on a WITE32 installation. To take advantage of the new shorter preambles, you need to create a new product, or to copy the proper pattern file from the default product directory to the existing product directory, or to recompile the pattern files. For more information see the *WITE32 Pattern User's Guide*.

3.10.1 Reduced Preamble Length in Existing Parametric Patterns

The preambles of the standard parametric patterns defined in the ***Param.ep2*** file are reduced from 20us to 10us. These patterns are recommended for the 2550 and 2585 families of the Guzik Read-Write Analyzers.

The following patterns are modified:

- FF
- HF
- LF
- RF
- IS

3.10.2 Parametric Patterns without Preambles

The ***ParamX.ep2*** pattern file is added to the WITE32 pattern collection. The patterns in this file are the regular parametric patterns, like in the ***Param.ep2*** file, but without preambles. These patterns are recommended for the new 2000 family of the Guzik Read-Write Analyzers.

The ***ParamX.ep2*** file includes the following patterns:

- FFX
- HFX
- LFX
- RFX
- ISX

3.10.3 Modified PRML Pattern Preambles

The preambles of M16 PRML patterns defined in the ***Ms25.ep2*** file are reduced from 20us to 10us. The following patterns are modified:

- PCTRD
- P0D
- P1D

3.11 Head Amplifier Features

1. The head amplifier drivers for WITE32 Version 3.00 have a new format. The drivers created for the previous WITE32 versions are not compatible with Version 3.00. The drivers for Version 3.00 cannot run in the WITE32 software Version 2.7x and earlier.

2. The following head amplifiers are initially supported in WITE32 Version 3.00:
   - GTEMR5
   - SR1776
   - SR1796
   - COBRA3_M61889_42 (M61889 Rev. 4.2)
3. The following changes are made in the *Head Amplifier Parameters* dialog box:
   - The *Installed* drop-down list box is added. Use this list box to switch between the top head amplifier and the bottom head amplifier.
   - Starting from the WITE32 Version 3.00, you can change the software driver for the currently installed head amplifier, only when the device is stopped.
   - The tab labels are now located on the top of the tabs.

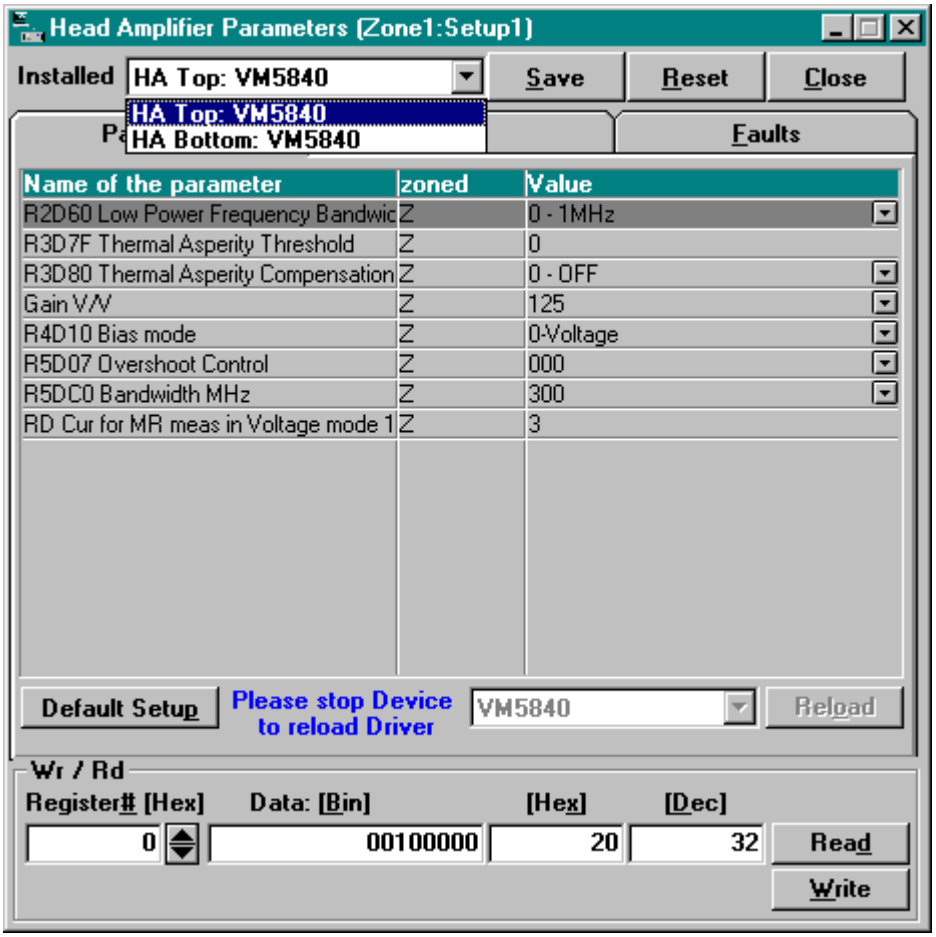

Figure 24: *Head Amplifier Parameters* Dialog Box

3.12 Test Execution with HLM-2F in ZOutside Zone

A new procedure is implemented in the WITE32 Version 3.00. This procedure moves the head amplifier boards of the Head Loading Mechanism HLM-2F (or HLM-3F) to the HGA cartridges when the spinstand is not started (the *ZOutside* zone). This movement connects the head amplifiers to the heads and therefore makes possible the TAA Calibration, MR Impedance, WR Impedance, or Popcorn test execution before running the device in a Production sequence in the *ZOutside* zone.

3.13 Miscellaneous

1. When the beginning of the write gate is changed, the beginning of the user data pattern is also delayed. In previous WITE32 versions, the preamble always starts at the beginning of index/sector, followed by the user data pattern in the timing defined in the pattern file. Starting from WITE32 Version 3.00, the beginning of the preamble always starts at the beginning of the write gate, followed by the user data pattern. In previous WITE32 versions, if the beginning of the write gate is started later than the preamble length of the current pattern, no preamble will be written on a track. Now the signal written on media is always the same: the preamble followed by the user data pattern. This allows running PRML measurements with any write gate settings.

2. The "Skip Failed Heads" runtime grading option is changed. In the previous versions, when a head fails runtime grading and this option is enabled, all tests in that setup are still executed. Only the tests in the following setups are skipped. Now, the algorithm is modified. For example, if there are T1, T2, T3 and T4 tests in a setup, and T1 fails runtime grading, the T2 test if still executed for the failed head, but T3 and T4 will be skipped. After that, the tests in the following setups are skipped.

3. Supported number of sectors was increased. The table below lists the sector modes and the supported number of sectors in WITE32 Version 3.00 comparing to WITE32 Version 2.70:

	WITE32 Version 2.70	***WITE32 Version 3.00***
Positive Sector Mode (with Guzik Spinstand)	1, 2, 4, 8, 16, 32, 64, 128	1, 2, 4, 8, 16, 32, 64, 128, and 256
Soft Sector Mode	1..254	1..1024

Note: You must have the assembly revision P or higher of the RWA Control Board (P/N 306180) to set 256 positive sectors or 255 and more soft sectors. Otherwise the same limitations as in the WITE32 Version 2.70 are applied. Run EEPROM Viewer utility to check the revision of RWA Control board.

4. The *Production* test. Message "Test: <Name> in production test sequence is not installed. Do you want to remove it?" gives you two choices – "Yes" and "No". The default choice is changed to "No". It used to be "Yes" in the previous releases of WITE32.

5. The new *System Current* result is added to the Configuration Area of the result output dialog box of the MR-Impedance test.

6. The *Product Configuration* dialog box (*File* | *Product Configuration*) is a read only dialog box now. To modify spinstand parameters or PRML chip driver settings you have to restart WITE32.

7. The head selection in the *System Configure* dialog box (*Configure* | *System*) can be now changed only when the device is stopped.

CHAPTER 4

WRITER IMPEDANCE MEASUREMENT TEST

The *WR-Impedance* is a new test introduced in WITE32 Version 3.00. The test is a part of the *MR tests* test module.

Note: At the moment this document has been prepared, only Guzik MR5 head amplifiers (GTEMR5) support this test.

4.1 Writer Impedance Measurement Algorithm

The test performs the following sequence of actions:

1. Selects the write current for the impedance measurement:
   - The write current specified in the text box located in the *Parameters* frame, when the *Custom CURRENT* check box in the *Parameters* frame is selected.
   - The system write current, when the *Custom CURRENT* check box in the *Parameters* frame is cleared.
2. Executes the DC erase operation
3. Measures DC voltage on the write head, while the *DC Erase* operation is running.
4. Calculates WR Impedance as a ratio between the measured on a write head voltage and the write current value.

4.2 Writer Impedance Measurement Test Configuration

To configure the Writer Impedance Measurement test, select the *Tests* | *MR Tests* | *WR-Impedance* item from the main menu of the *WITE32 Engineering Dashboard* dialog box.

The *WR-Impedance* configuration dialog box appears:

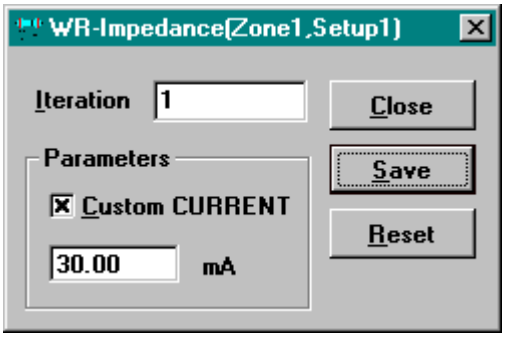

Figure 25: *WR-Impedance* Dialog Box

There are the following items in the *WR-Impedance* dialog box:

- The *Iteration* text field specifies the number of times the test will be performed.
- The *Parameters* frame contains the *Custom CURRENT* check box and the *mA* text box.

  Select the *Custom CURRENT* check box and type a write current value (in mA) in the text box here, and the test will use this custom write current for the measurement. Otherwise, the test uses the system write current.
- The *Close* button closes the dialog box. If the *Save* button has not been pressed after any changes in the dialog box, the program prompts to save the parameters, or ignore the changes.
- The *Save* button saves parameters to database.
- The *Reset* button restores the parameters from the database.

4.3 Configuration Area of Result Processor for Writer Impedance Test

This is the Configuration Area definition for the TAA test:

Name of Field	*Comments*
UseCustomWCurrent	Displays 1 when the custom write current was used Displays 0 when the system write current was used
CustomWCurrent	The custom write current value
SystemWCurrent	The system write current value
Cnt	The number of iterations

4.4 Test Results Area of Result Processor for Writer Impedance Test

This is the Test Results Area definition for the TAA test:

Name of Field	*Comments*
Conf	Configuration number (Not used, always equal to 0)
Iteration ID	Iteration ID
WR-Impedance	Measured WR-Impedance value in Ohm

4.5 Output Dialog Box of Writer Impedance Measurement Test

Figure 26 represents an example of the Write Impedance Measurement Test output.

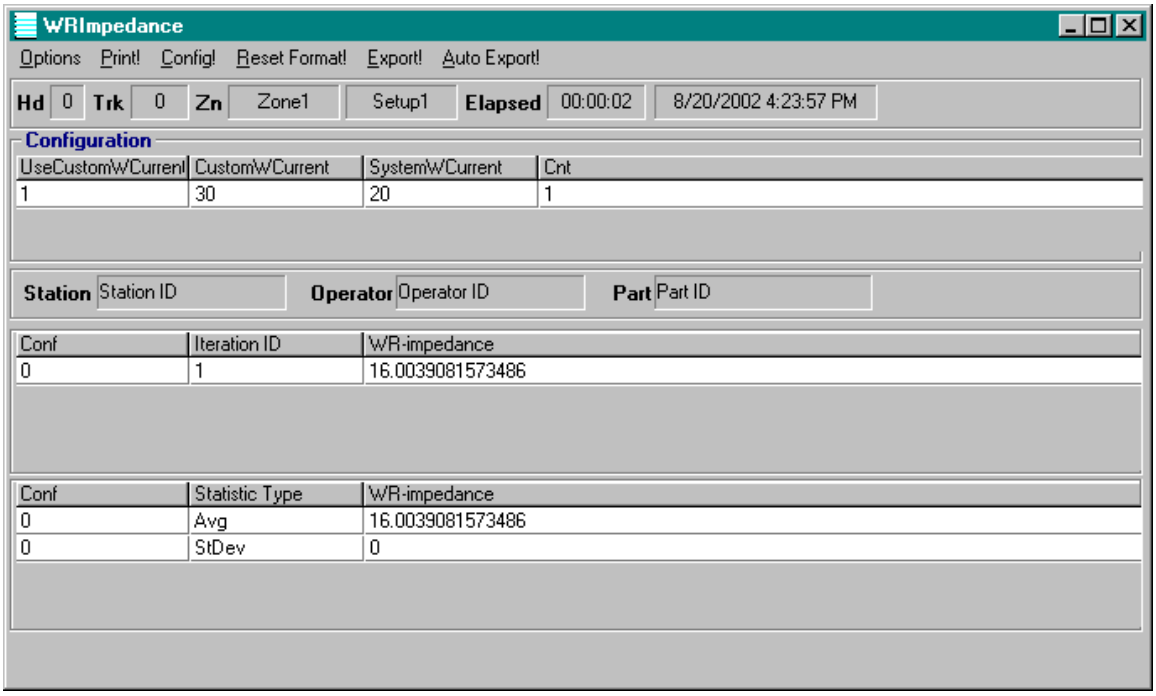

Figure 26: *WRImpedance* Test Result Output

CHAPTER 5

FIXED BUGS

The following bugs were discovered in WITE32 Version 2.70 or earlier, and fixed in WITE32 Version 3.00. The description below explains the bug behavior as it appeared in WITE32 Version 2.70.

5.1 User Interface

1. The zone editing does not work for the *W/R Offset* text box in the *System* dialog box (*Control* | *System…*).

2. The zone editing is impossible in the *Measured by* frame of the *Alt Spectral Elimination* configuration dialog box (Alternative Spectral Elimination test), when only the Overwrite filter is available.

3. When the *Track Profile* test is running, the progress bar in the *Engineering Dashboard* dialog box behaves incorrectly (i.e. reaches the 100% level too early).

   Note: To make the progress bar visible in the *Engineering Dashboard* dialog box, you must select the *Comparator ErrRate* check box in the *Track Profile* configuration dialog box (Track Profile test) and select the *Configure* | *Test Status Bar* menu item from the main menu of the *Engineering Dashboard*.

4. In *Production Configurations List* dialog box (*Configure* | *Production…*), the "Subscript out of range" error message is displayed, if the user creates and then immediately deletes a new configuration.

5. The WITE32 software does not save any changes made in the *WITE Result Processor Configuration* dialog box (*Configure* | *Configure Result Processor…*), when this dialog box is open and you press the *Restart* button in the *Engineering Dashboard* dialog box.

5.2 Test Modules

1. In the multi-zone configuration, the WCalc module saves the result names, which are zone-independent parameters, as zone-dependent. The different sets of parameters are displayed, due to the bug, in the different zone-setups, although the system uses only one set for all zone-setups. The WITE32 Version 2.70 (and earlier) selects this set depending on the zone order how the names were saved.

2. You may receive wrong test results, when one of the NLTS tests is started immediately after the Servo Write operation (preamble for current pattern gets corrupted).

3. The TAA results of the Saturation test may have negative values.

4. The results of the system background noise level correction are incorrect for the tests, which use the Spectrum Analyzer.

   Note: This does not influence the results received for reasonable SNR values (< 40 dB).

5. The intermittent message "Cannot select the pattern" with a random pattern name appears during the Write/Read Offset test.

6. The error message “PES Analysis (WSpinstd) Itest::Run() has performed illegal action. Error 0: (Source:).” appears on display, when the *Use PES Data From Previous Acquisition* radio button is selected in the *PES Analysis* configuration dialog box (PES Analysis test) and a plot is not selected.

5.3 Spinstand and Servo

1. Pressing the *Abort* button does not interrupt the Servo Erase operation.

2. The Servo does not work properly on the boundaries of a servo range (i.e. the actual servo range is smaller than specified in the *Write Servo* configuration dialog box).

3. The system does not return to the automatic spinstand skew angle mode on the WITE32 start, if the *Manual* radio button in the *Skew Angle* frame of the *Device Configure* dialog box (*Configure | Device…*) was selected during the previous WITE32 session. In this case, the manual skew angle mode remains active until you reset the spinstand.

4. Resetting the spinstand restores an earlier selected type in the *Disk Type* combo box of the *Product Parameters* dialog box of the WDCP (the *Set Product Parameters* button in the *Spinstand Alignment* dialog box), when the *Save to File* button is pressed after the disk type has been changed.

5. You will see an earlier selected disk type in the *Disk Type* combo box, only if you close the *Product Parameters* dialog box of the WDCP (the *Set Product Parameters* button in the *Spinstand Alignment* dialog box) and then open it again.

6. Change the disk type in the *Disk Type* combo box of the *Product Parameters* dialog box (the *Set Product Parameters* button in the *Spinstand Alignment* dialog box of the Spinstand Alignment Program WDCP). Press *Save to File* button. Reset Spinstand (press the small red button, and then the green button on the S1701B front panel). Close the *Product Parameters* dialog box, and then open this dialog box again. You will see the initial disk type in the *Disk Type* combo.

7. Open the *1701 Alignment Menu* dialog box (or the *Alignment Menu* dialog box) by pressing the *Align Spinstand* button in the *Spinstand Alignment* dialog box of the Spinstand Alignment Program WDCP. Open the *Product Parameters* dialog box by pressing the *Set Product Parameters* button in the *Spinstand Alignment* dialog box. Change the disk type in the *Disk Type* combo box of the *Product Parameters* dialog box. Press *Save to File* button. Changing the disk type will not affect the disk type settings in the *Alignment Menu* dialog box. You need to close the *Alignment Menu* dialog box and open this box again before the changes made in the *Product Parameters* dialog box will be reflected in the *Alignment Menu* dialog box.

8. In the *EEPROM Pad – [Dump]* dialog box (*Info* | *EEPROM Dump…* menu items from the *Spinstand Alignment* dialog box), clicking the *Dump* button may cause the error message “Illegal type: }” under the following conditions: the *List* item in the *View* menu is checked, the *Spinstand* folder on the browse panel is highlighted, and the *Binary* button is not pressed.

5.4 Calibration

1. The message "Unknown pattern is written on current track" may appear during the TAA calibration if the *Digital Parametric* check box in the *Measurements* frame of the *Digital Measurements* dialog box (*Control* | *Digital Measurements…*) was selected.

2. Selection of the *Calibration* | *Calibrate All* menu items will initiate the misleading error message "Device off: peak detection, TAA, and R/W current will not be calibrated", when the device is not started.

3. When you launch WITE32 or start Production, the WITE32 software uses the calibration parameters not from a custom calibration file, but from a default calibration file, even if the corresponding check box in the *Custom Calibration* column from the *Setup* frame of the *Zone Definition* dialog box (*Config* | *Zone*…) is selected.

4. The TAA calibration coefficient is retrieved from the wrong calibration file when the *Restart* button in the *Engineering Dashboard* dialog box is pressed.

5. The "Low env samples" error message is displayed during the TAA calibrating on a short read gate (for example, when a large number of sectors is selected in the *Gate and Track Format* dialog box).

6. The *Calibrate All* button in the *TAA Calib* dialog box (*Calibration* | *TAA…*) switches the Servo off.

7. Even if the *Use Internal Calibration* check box in the (*Calibration* | *TAA…*) dialog box is selected, the WITE32 uses filter amplification coefficients obtained by the external TAA calibration.

   This may lead to incorrect TAA measurements through the filters other than Parametric. The problem may appear as the sudden changes of the TAA values measured through the filter, when you reload the current zone or setup.

5.5 Miscellaneous

1. In some systems, extra sector pulses can be generated at the end of the track in non-sector and soft-sector modes.

2. In the soft-sector mode, besides the user defined read gate, an extra narrow read gate pulse is generated close to the soft sector pulse.

3. If WITE32 is located in the root directory of the drive (or the WITE32 folder is mapped as a root directory) and only DLL version of an external module is installed, opening the *Select Module* dialog box (*File* | *Select Module...*) will destroy the external module path information saved in WITE.INI file. The WITE32 software will not display the selected module on the menu and will not find this module after restarting the program.

CHAPTER 6

KNOWN PROBLEMS AND SOLUTIONS

1. The WITE32 software uses a set of common ActiveX components (OCX and DLL files) provided by the MS Windows operating system. These components are different for the different versions of the MS Windows. To avoid possible problems caused by the inconsistency of the ActiveX components, install the WITE32 software either on **MS Windows 98 Second Edition**, or **MS Windows 2000 SP1**. We recommend installing the WITE32 on a clean PC immediately after MS Windows has been installed.

   Note: A third party application installed on your computer may upgrade or downgrade the MS Windows components vital for the correct WITE32 operation. Therefore, avoid installing unnecessary software on the computer, where you run the WITE32 software.

2. The *Media Analysis* tests (the WGMA module) do not support the RWA2004, RWA2003, and RWA2002 testers (the RWA2000 family). The tests are not disabled, even when you use the WITE32 software to control the system with a tester from the RWA2000 family. The configurable *Soft(S)* buttons on the *Engineering Dashboard* dialog box remain not grayed, when the *Media Analysis* tests are assigned to the buttons.

   Note: Starting these tests on the RWA2004, RWA2003, and RWA2002 testers will cause a number of error messages. Do not run the tests on these testers.