

# VEO16 Public Manifest (16:64 & 16:128)

## VEO 3.10

### Important Upgrade Notice

- If your current VEO version is **3.2.5 or lower**, you must upgrade to **version 3.5.5** before you install a later version.
- If your current VEO version is **3.5.5 and above**, you can safely upgrade to 3.10. Use the "Prefs -> System Update" option to start the installation of the **veo16\_update\_3.10.X.img** update file.
- **IMPORTANT** - VEO units using version 3.10.X cannot be downgraded to a version below 3.8.1.
- When upgrading to 3.8.2 and above for the first time, the time zone preference will be lost and needs to be set again.
  - In the **Prefs** tab, go to the **System** section.
  - Select **System Date/Time** and press **OK**.
  - Choose the correct time zone.

## 2016-03-15 VEO16 Release 3.10.8

### Improvements

Remote Access activation & Password (Prefs/Network) works now for both UTLink (or VNC) and FTP connections.

Time Based (Encoding Setup) has been implemented with 4 levels (Low / Mid / High / Max).

AQR (acquisition rate) now displayed on the right corner instead of FPS.

Keep Meas. Bar (Prefs/Display) = YES by default on all new instrument (only apply in PLAY mode).

Addition of a new bank of Sonatest probes and wedges to the software database.

Fix 935 Create Scan distance over 1000 mm removes weld overlay.

Fix 809 Weld overlay drawing error if horizontal right.

Fix 274 Impose file size limit | Using UTStudio 64 bit, file size is not a problem anymore.

Fix 936 (C-276) If zoomed in, views are altered when saving to a new setup from utdata.

Fix 871 (C-246) Instrument unresponsive if range path changed by wheel for a very long time.

Fix 232 Graphical dimensions in 3D view are not exported in report.

Fix 331 Error or missing measurement when moving angular cursor with mouse.

Fix 839 Element Diameter correction for Phoenix Probe.

### Known Issues

609 Screen brightness parameter missing

592 Auto FSH in DGS wizard not accurate - WA adjust the gain manually

565 3D views improvement for P&C functionalities

40 Maximizing Merged C-scan view clears the view

363 Wheel touch doesn't work while in velocity wizard - WA use arrows

322 F3 reset shortcut doesn't work when 2D quadrature encoded - WA make a manual reset

280 Measures in Part References don't consider Encoding Area offset+rotation

263 Reset all in Time-based should reset all data - WA make a manual reset

236 Sometimes split DAC vertical lines are not drawn

231 Redundant info in 3D view or wrong abbreviation used for focal distance

32 File loaded from USB key cannot be saved after removing the key

1439 AQR indicator unsuspected behavior when having 2 TOFD scans

## VEO 3.9

### Important Application Notice

- If your current VEO version is **3.2.5 or lower**, you must upgrade to **version 3.5.5** before you install a later version.
- If your current VEO version is **3.5.5 and above**, you can safely upgrade to 3.9. Use the "Prefs -> System Update" option to start the installation of the **veo1664\_update\_3.9.X.img** or **veo16128\_update\_3.9.X.img** update file.
- **IMPORTANT** - VEO units using version 3.9.X cannot be downgraded to a version below 3.8.1.
- When upgrading to 3.8.2 and above for the first time, the time zone preference will be lost and needs to be set again.
  - In the **Prefs** tab, go to the **System** section.
  - Select **System Date/Time** and press **OK**.
  - Choose the correct time zone.

## 2015-11-30 VEO 16:64 and 16:128 Release 3.9.7 - Fixed Issues and Improvements

G-499 Occasional USB detection problem

## 2015-11-04 VEO 16:64 and 16:128 Release 3.9.6 - Fixed Issues and Improvements

G-452 Fixes a failure to reboot in exceptional conditions.

## 2015-09-24 VEO 16:64 and 16:128 Release 3.9.3 - Fixed Issues and Improvements

G-389 Recent layout now available  
G-261 Amotus SDK external app launcher  
G-139 New inspection wizard - change S-Scan start angle 35°  
G-118 Set fixed aspect ratio to false on L-Scan (now wide by default)  
G-109 Change default measure in the measurement bar  
G-64 Add a new measurement from wedge (to include X offset as per D-Series)  
G-53 Update all Layouts / Templates / Examples / New Inspection Wizard  
G-43 Place gate start at 25 mm or 25% in A-scan as default value  
G-38 Crosshair mouse in views of UTDATA file  
G-36 Time-Based recording - Add duration parameter  
G-35 Missed frames should appear in record view in long scan  
Several improvements to the "auto-hide menus" feature  
G-51 Multi scan (4 PA, 2 TOFD) high PRF bug  
G-420 Crash in save dialog after refusing file overwrite  
G-380 Problem with long press dB and signal without smoothing  
G-374 Change default selected measurements in velocity wizard  
G-373 Copy & overwriting a file in media browser will break it  
G-371 Crash when changing to particular layout in large size utdata file  
G-349 Correct the position of gates at the end of Velocity wizard  
G-316 Extraction box becomes a point outside the scan area when switching layouts  
G-295 Veo.conf content clears out when /media/user has no space left  
G-291 Inspection Wizard, load Probe or Wedge remove HAZ in 3D view  
G-259 Crash when load UTDATA, and take VERY long time to open  
G-244 X Offset is out of range  
G-238 Grids don't cover all the maximized view when rulers aren't present  
G-208 File Name generation  
G-205 Dimensions not shown in 3D geometry views  
G-189 BScan in utdata: cursor hard to move in one direction  
G-184 Remove external USB after copy file freeze yocto  
G-169 Smooth scrolling is fragmented by every vertical line of the grid  
G-159 Stop & Play increases the PA-view zoom aspect ratio  
G-151 Faulty 3D view screenshots  
G-147 L-scan view is zoomed in when the calibration wizard ends  
G-138 Overlay inverted when scan view is inverted  
G-136 Veo crash after very long time Play mode and press STOP  
G-131 S-Scan starting too high when fix aspect ratio = Yes  
G-128 Cursor movement VS View Orientation.  
G-127 Example\_Conventional\_Pitch\_Catch.utcfg new probe  
G-124 Mouse click on view doesn't hide the Auto-Hide menu  
G-119 Angular box not correctly positioned in L/S scan.  
G-98 Gate Width can be set to negative values  
G-89 TCG to DAC in PA adds point at start path for certain focal laws  
G-81 Not possible to resize or move around IFT gate with mouse  
G-77 Make gate level adjustment rounded anytime  
G-76 VEO click wheel goes all around until next press  
G-74 High Voltage protection mechanism improvement  
G-72 Veo crashes when encoded scan reaches the limit of the view  
G-71 If all gate are deleted in 1 Ascan, Gate button not work to change for other Gate  
G-67 Ruler update problem  
G-50 Minor phantom echoes in PA signal  
G-46 Long press dB button shouldn't modify the gain when in Pause  
G-42 L-scan view is not centered with less than 4 beams

G-34 Reset all position doesn't clear merged c-scan views  
G-25 Long press dB key doesn't adjust gain in current gate

## Known Issues

G-363 Wheel touch doesn't work while in velocity wizard  
G-331 Error or missing measurement when moving angular cursor with mouse  
G-322 2D quadrature encoded & F3 shortcut  
G-290 Long press Gate button, bring us to other cursor than Gate if not in A-scan  
G-280 Measures in Part References don't consider Encoding Area offset+rotation  
G-274 Impose file size limit  
G-263 Reset all in Time-based should reset all (:  
G-260 Critically Low Battery message hidden by the About window  
G-236 Split DAC vertical lines are not always drawn  
G-231 Redundant info in 3D view and wrong abbreviation used for focal distance  
G-194 Probe & Wedge views are not displayed after saving screenshot with Plan view  
G-57 Recent files stored on USB are grey after reboot  
G-40 Maximizing Merged C-scan view clears the view  
G-32 File loaded from USB key cannot be saved after removing the key  
C-276 If zoomed in, views are altered when saving to a new setup from utdata  
C-248 Change the default value for Elmt Diameter of a mono circular probe  
C-246 Veo becomes unresponsive when range path is increased constantly using rotation action on touch wheel

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## VEO 3.8

### 2015-08-04 VEO 16:64 and 16:128 Release 3.8.3

#### Internal versions

|                 |                   |               |
|-----------------|-------------------|---------------|
| <b>Software</b> | OS (Yocto)        | 9233f6b1b934  |
|                 | Application (eg3) | 1a7adfc20474  |
| <b>BIOS</b>     |                   | 4.13 and 4.15 |
| <b>Firmware</b> | VHDL 16:64        | 2.7.0         |
|                 | VHDL 16:128       | 2.7.0         |
|                 | PIC               | 1.13          |
| <b>Hardware</b> | CB                | Rev. C and D  |
|                 | BF                | Rev. C and D  |
|                 | ME                | Rev. C and D  |

## Important Application Notice

- If your current VEO version is **3.2.5 or lower**, you must upgrade to **version 3.5.5** before you install a later version.
- If your current VEO version is **3.5.5 and above**, you can safely upgrade to **3.8.3**. Use the "Prefs -> System Update" option to start the installation of the **veo1664\_update\_3.8.3.img** or **veo16128\_update\_3.8.3.img** update file.
- **IMPORTANT** - VEO units using version 3.8.3 cannot be downgraded to a version below 3.8.1.
- When upgrading to 3.8.2 and above for the first time, the time zone preference will be lost and needs to be set again.
  - In the **Prefs** tab, go to the **System** section.
  - Select **System Date/Time** and press **OK**.
  - Choose the correct time zone.

## Fixed Issues

- GIII-270

## Known Issues

- Same as 3.8.2

## 2015-01-21 VEO 16:64 and 16:128 Release 3.8.2

### Internal versions

|          |                   |               |
|----------|-------------------|---------------|
| Software | OS (Yocto)        | 49877b324e9c  |
|          | Application (eg3) | 1d9a0ae7457a  |
| BIOS     |                   | 4.13 and 4.15 |
| Firmware | VHDL 16:64        | 2.7.0         |
|          | VHDL 16:128       | 2.7.0         |
|          | PIC               | 1.11          |
| Hardware | CB                | Rev. C and D  |
|          | BF                | Rev. C and D  |
|          | ME                | Rev. C and D  |

## Important Application Notice

- If your current VEO version is **3.2.5 or lower**, you must upgrade to **version 3.5.5** before you install a later version.
- If your current VEO version is **3.5.5 and above**, you can safely upgrade to 3.8.2. Use the "Prefs -> System Update" option to start the installation of the **veo1664\_update\_3.8.2.img** or **veo16128\_update\_3.8.2.img** update file.
- **IMPORTANT** - VEO units using version 3.8.2 cannot be downgraded to a version below 3.8.1.
- When upgrading to 3.8.2 for the first time, the time zone preference will be lost and needs to be set again.
  - In the **Prefs** tab, go to the **System** section.
  - Select **System Date/Time** and press **OK**.
  - Choose the correct time zone.

## Fixed Issues

- #7183 In conventional UT mode, the frame rate is now correctly adjusted based on the PRF. Also, the user-selected maximum framerate is now limited on VEO to prevent an undesirable error.
- #7187 Performance improvements.
- #7056 The "Integration Tools" software option was renamed to "CSV Export" to better reflect what it does.
- #7107 Fixed possible crash when encoding around the end of the scan distance.
- #7148 Fixed the regression that made the phased array general sensitivity 14 dB lower in software version 3.8.1.
- #6729, #6982, #7068 Fixed several UI problems when using "Auto-Hide Menus" setting. Also, the "Menu" button is now available when editing a value in a spinbox.

## Known Issues

- #7202 When using the Sensitivity Wizard, pressing the Maximize button will cause the device to crash. The Maximize button is not useful in this context, so the workaround is to avoid pressing it.
- #7204 When working with heavy multi-scan, multi-frequency configurations, there is a very low probability that the FPGA will hang, turning the scan views to black and forcing a reboot.

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## 2014-11-26 VEO 16:64 and 16:128 Release 3.8.1

### Internal versions

|                 |                   |               |
|-----------------|-------------------|---------------|
| <b>Software</b> | OS (Yocto)        | 16d4f9628583  |
|                 | Application (eg3) | 9cd1dd105b60  |
| <b>BIOS</b>     |                   | 4.13 and 4.15 |
| <b>Firmware</b> | VHDL 16:64        | 2.7.0         |
|                 | VHDL 16:128       | 2.7.0         |
|                 | PIC               | 1.11          |
| <b>Hardware</b> | CB                | Rev. C and D  |
|                 | BF                | Rev. C and D  |
|                 | ME                | Rev. C and D  |

## Important Application Notice

- If your current VEO version is **3.2.5 or lower**, you must upgrade to **version 3.5.5** before you install a later version.
- If your current VEO version is **3.5.5 and above**, you can safely upgrade to 3.8.1. Use the "Prefs -> System Update" option to start the installation of the **veo1664\_update\_3.8.1.img** or **veo16128\_update\_3.8.1.img** update file.
- **IMPORTANT** - VEO units using version 3.8.1 cannot be downgraded to a version below 3.8.1.

## New features

- Support the new generation of Service Centers calibration equipment
- Provide full compatibility and example configurations for new WheelProbe features
- GPIO connector: Implemented ability to configure Outputs behavior (PRF-synchronized signals available)
- Encoder: Create new "Trigger at PRF" parameter for single encoder mono-element scans.
  - New encoding mode where elements pulse at the PRF speed instead of pulsing at each encoder resolution step.
  - The envelope of all pulses between 2 encoder grid steps is recorded.
  - It requires specific settings to enable this feature: only one UT mono channel (no multi-scan), no averaging selected and full UT signal rectification applied.
  - Be aware that this mode consumes more battery power.
- Encoder: "Previous Index" button added when using Manual index encoding
- Config: Added warning if the encoder precision is too sensitive for fast encoding speeds.
- Config: Added warning if multiple PA probes are configured on the same connector pins.
- View: Weld overlay now has a different color than view grids.
- View: Added ability to save envelope as a Reference A-Scan.
- S-Scan/L-Scan: Add view option for Stretching aspect ratio to take all available space.
- UI: Show buffer size warning when buffer almost full
- UI: Gate and Extractor key pad function now reselect previous gate/extractor, fixes #6466

## Fixed issues

- Fix performance issues after recording multiple files in the same session, fixes #6650
- Veo: Optimization of some scan filters.
- utprobe/utwedge/utcfg: Make various adjustments to example files #3713 #6993 #7002
- utprobe files: Do not save connector id in probe definition, #3147
- Wedge: Change step of X-Offset to 0.1mm, #3615
- Part: Allow changing weld parameters in Live and Analysis, fixes #5730
- Scan: Default smoothing value now "High", #6958
- Scan: Contouring default value now 2%, don't reset when toggling on/off, #5354 #6128
- IFT: fix negative IFT in RF, and handling of Top and End views when IFT not triggered. #6629
- TOFD: Straightening parameter was not restored properly on file load, #4501
- Prefs: Deprecate A-Scan Range, #5157
- Manual Index Encoder: don't allow calibration if encoder set to Manual.
- Manual Index Encoder: hide "Invert Dir" parameter when index encoder is Manual, fixes #3994
- A-Scan: Ruler LW Pos parameter did not refresh the indicator immediately, fixes #6282
- S-Scan/L-Scan: avoid Circular ruler overlapping the scan when view is small
- S-Scan/L-Scan: Improve zoom restore, fixes #5923
- S-Scan/L-Scan: fix zoom issues when switching layout or when changing parameters, #6791 #6877
- S-Scan/L-Scan: Extractor sometimes disappeared at specific zoom factor
- New Inspection Wizard: Default to LW in TOFD, #6573
- Velocity wizard: avoid "Gate 2 Range" error, fixes #4167

- Sensitivity Wizard: sometimes had no effect on first focal law, fixes #6317 #6595
- Sensitivity wizard: Default Amplitude Tolerance now 5% FSH, #6786
- DGS: Sub-level curve ERS doesn't work well, fixes #6471
- DGS: Reorder step items so that Test Block velocity is in same step as Probe Eff. Diameter
- DGS: Increase Near Field Length parameter precision
- Veo: Fix an issue where doing simultaneous PA & UT scans could result in bad UT acquisition.
- UI: Show "please wait" dialog when changing voltage
- UI: Only show "Stream Direction" on pipe part
- UI: Show English help files when language is Hungarian
- UI: Update French, Russian and Chinese translations
- UI: Update Spanish Quick start guide
- Various stability and performance fixes

## Known Issues

- #7148 When using phased array mode, the general sensitivity is 14 dB lower than it was with earlier software versions.

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### 2014-09-19 VEO 3.5.11 (for VEO 16:64 and 16:128) VEO Pack 3.5.11

- EG3 Software: **3.5.11** (f3ef198be2)
- Pic Firmware: 1.11
- Vhdl Firmware 16:64: 190.3
- Vhdl Firmware 16:128: 1.4.2
- Bios: 4.13 and 4.15
- OS Image : 3.5.11 (77c322522)

#### Important Application Notice:

- If your current veo version is **3.2.5 or lower**, *you must upgrade to **version 3.5.5** before applying this patch update.*
- Afterwards, from veo 3.5.5+, use the "Prefs System Update" option to start the installation of the "veo\*\*\*\_update\_3.5.11.img" update file.
- The device can only be upgraded, not downgraded.

#### Featuring:

- This is a patch release to fix major issues found with veo 3.5.10.

#### Fixed:

- Pressing "Reset Scan Pos" button should not lose already encoded data, fixes #6238
- Pitch and Catch: Probe Center Spacing (PCS) sometimes was reduced in half, fixes #6464
- UI: Disable tooltips in menu, fixes #6582
- UI: Prevent crash when pressing SAVE while editing a parameter, fixes #6575
- Velocity wizard: fix gate drawing locked in S-Scan/L-Scan, fixes #3717
- Encoder wizard: Ignore Reset position inside wizard, fixes #6609
- Media Browser: ensure last selected file is visible, fixes #4143
- Performance issues when accessing save dialog multiple times.

#### Known issues:

1. Pitch & Catch with L-Scan cannot use elements higher than 16 (this limitation does not apply to P&C S-Scan)

### 2014-03-21 VEO 3.5.10 (for VEO 16:64 and 16:128) VEO Pack 3.5.10

- EG3 Software: **3.5.10** (SHA1 08795a6b)
- Pic Firmware: 1.11
- Vhdl Firmware 16:64: 190.3
- Vhdl Firmware 16:128: 1.4.2
- Bios: 4.13 and 4.15
- OS Image : 3.5.10 (SHA1 e16e863c1395)

#### Important Application Notice:

- If your current veo version is **3.2.5 or lower**, *you must upgrade to **version 3.5.5** before applying this patch update.*
- Afterwards, from veo 3.5.5+, use the "Prefs System Update" option to start the installation of the "veo\*\*\*\_update\_3.5.10.img" update file.

- The device can only be upgraded, not downgraded.

#### Featuring:

- UI: Pressing MENU key now collapses or expands menu items.
- Mono-Element Scan: Improve gain linearity at high gain levels
- TCG: Improve "Add TCG at Gate" behavior in Manual TCG wizard, allow adjusting signal inside tolerance.
- View: Rulers now have a smaller granularity.
- Media Browser: show file list in Save Dialog
- Added "Integrators Package" software enabled option (export CSV)

#### Fixed:

- Allow 6 probes setup, since it was allowed in 3.2.5, fixes #6095
- DAC/DGS: drawing loops back to zero when points too high (with Ref Correct) #6074
- View: A-Scan: Improve Grid alignment, fixes #6081
- View: Thickness B-Scan (B-LOG): fix when using ref gate #5955, and with Imperial system
- View: TOFD/B-Scan: Cursors were misplaced when using scrolling mode in live mode #6198
- View: Reset S-Scan and L-Scan zoom when switching layout. #5923
- View: Improve S-Scan/L-Scan performance when zoomed in at high factors. #5641
- View: C-Scan: improve behavior when using with IFT. #6171
- View: live TOFD cursors did not scroll properly
- UI: Temperature "too high" message was displayed when temperature was too low, fixes #5846
- UI: Show clearer error message when recording device is too full for record, fixes #6051
- VNC: remember VNC server status across sessions, fixes #6101

#### Known issues:

1. Pitch & Catch with L-Scan cannot use elements higher than 16 (this limitation does not apply to P&C S-Scan)

#### Manifest Erratum:

- Version 3.5.5 should have mentioned the following change item:
  - Scan: Digital filters were adjusted to provide better results.

#### 2014-01-15 VEO 3.5.7 (for VEO 16:64 and 16:128) VEO Pack 3.5.7

- EG3 Software: **3.5.7** (SHA1 19c93322)
- Pic Firmware: 1.11
- Vhdl Firmware 16:64: 189.12
- Vhdl Firmware 16:128: 1.3.6
- Bios: 4.13 and 4.15
- Compatible with Hardware Rev C01 and D01
- OS Image : 3.5.7 (SHA1 fdb34550b69)

#### Important Application Notice:

- This is a hotfix release to fix important issues with veo 3.5.5 and veo 3.5.6.
- If your current veo version is 3.2.5 or lower, *you must upgrade to **version 3.5.5** before applying this patch update.*
- Afterwards, from veo 3.5.5+, use the "Prefs System Update" option to start the installation of the "veo\*\*\*\_update\_3.5.7.img" update file.
- The device can only be upgraded, not downgraded.

#### Featuring:

- Show "Saving..." message during save operations are too long. #5653

#### Fixed:

- Scan: An important regression in version 3.5.6 caused the Phased-Array gain to be attenuated, this fix restores the normal gain levels.
- Wizards: Reset zoom when entering wizards.
- Encoder calibration wizard: Could not calibrate encoders when language was not English, fix #5794.
- Thickness B-Scan (B-LOG): Depth/Amplitude mode were inverted
- Thickness B-Scan (B-LOG): The reference gate was not considered, fix #5850.
- Media Browser: various usability fixes, #5525 #5822.
- Additional stability fixes

**Known issues:**

1. Pitch & Catch with L-Scan cannot use elements higher than 16 (this limitation does not apply to P&C S-Scan)

**2013-12-20 VEO 3.5.6 (for VEO 16:64 and 16:128)  
VEO Pack 3.5.6**

- EG3 Software: **3.5.6** (SHA1 3fd25b1)
- Pic Firmware: 1.11
- Vhdl Firmware 16:64: 189.12
- Vhdl Firmware 16:128: 1.3.6
- Bios: 4.13 and 4.15
- Compatible with Hardware Rev C01 and D01
- OS Image : 3.5.6 (SHA1 c30a6148084)

**Important Application Notice:**

- This is a hotfix release to fix important issues with veo 3.5.5.
- If your current veo version is 3.2.5 or lower, *you must upgrade to version 3.5.5 before applying this patch update.*
- From veo 3.5.5, use the "Prefs System Update" option to start the installation of the "veo\*\*\*\_update\_3.5.6.img" update file.
- The device can only be upgraded, not downgraded.

**Featuring:**

- Includes all major changes from veo 3.5.5.
- Added warning: "Constantly using voltage > 200V may cause premature probe wear, especially for high freq. probes."
- Wedge Delay wizard: added an A-Scan gate in the first wizard step #2786.

**Fixed:**

- General: fix random system hang occurring when changing live gain with an active TCG #5805.
- General: repair some example utprobe and utwedge files.
- S-Scan and L-Scan fixes:
  - Using "Horizontal Right" view orientation resulted in view being mirrored vertically #5674.
  - Activating Part Overlay did not work when zoomed in.
  - Zooming with mouse wheel sometimes did not refresh cursor positions.
  - Loading UTDATA files with unusual encoder positions sometimes resulted in empty views #5795.
- Merged Top View: Sometimes did not refresh when moving box.
- 3d view: refresh when toggling part visibility.
- DGS: fix curve creation when using start path > 0 mm #5725.
- Media Browser: improve performance of file copy #5801.

**Known issues:**

1. Pitch & Catch with L-Scan cannot use elements higher than 16 (this limitation does not apply to P&C S-Scan)

**2013-11-28 VEO 3.5.5 (for VEO 16:64 and 16:128)  
VEO Pack 3.5.5**

- EG3 Software: **3.5.5** (SHA1 40db966ab6)
- Pic Firmware: 1.11
- Vhdl Firmware 16:64: 189.12
- Vhdl Firmware 16:128: 1.3.6
- Bios: 4.13 and 4.15
- Compatible with Hardware Rev C01 and D01
- OS Image : 3.5.5 (SHA1 22425e4e57)

**Important Application Notice:**

- This release is a major update. Almost all conventional scan features developed for the Prisma device have been backported to the veo in this update.
- Future updates will be achievable directly from the veo Prefs menu. This is the last update to use the "Veo Disk Imager" method.
- The device can only be upgraded, not downgraded.
- The « Windows Samba Share » over the Ethernet connection has been replaced by a FTP server.

**Featuring:**

- Introduction of Zoom function into S-Scan, L-Scan
- New Welcome screen on boot and file load



- New Inspection Wizard to help setup of new configurations from scratch
- Inspection: Hide Voltage Mono in PA setup, and vice-versa
- View Layouts
  - New view layouts configurations, including layouts with 3d views
  - Views resizable with mouse
  - 2D C-Scan are rendered during acquisition (Live Merged C-Scan), #3609
  - Show if Top/End/C views are in depth or amplitude mode in layout image
- Part: New types of Welds (U-weld, J-weld)
- Part: Curved parts support in UT and TOFD:
  - New type of part added : "Inside Pipe (ID)" and "Outside Pipe (OD)"
  - Defect positioning on 3D curved part
  - Curve Part Measurement (Depth and Surface Distance considering curvature)
- Part: Part menu now before Probe menu.
- Part: Added Graphite/Epoxy to material list, #3661
- Probe: Spike mode support, a new parameter has been added in Mono probe menu: "Pulse Type"
- Probe: Allow changing Probe->Pulse Width in Play mode, #4902
- Probe/Wedge: New ".utprobe" and ".utwedge" extension for Probe and Wedge files.
- Wedge: simplified usage in Conventional/TOFD, only need to enter X-Offset and Refracted angle to have a functional wedge.
- Scan: Renamed Delay to Zero
- Scan: Added Contouring mode (as per MasterScan, SiteScan and D-Series)
- Scan: Addition of reject mode: Suppressive and Linear (as per MasterScan, SiteScan and D-Series)
- Scan: Show actual velocity value in Wave Mode list
- Scan: Smoothing now configurable to None, Low, Medium or High (previously only high was available)
- Scan: Re-ordered some parameters, especially Acquisition Freq from Inspection, now configurable per Scan
- Scan: Auto-Gain feature simplified. Simply hold dB button to set gain in current gate to the reference amplitude, usually 80%, or use the "Scan->Auto FSH%" button.
- Wizards: DGS enhancement
  - Halve the lowest allowed ERS (equivalent reflector size), and use a more fine-grained DGS resolution, #4489
  - Enhance curve drawing; continue calculating points in the entire listening window.
  - Add "material attenuation" to DGS wizard
  - Add "Split DGS" enhancements
  - Add a "DGS Options" section into Scan to ease control without entering wizard
  - Add "Curve Ref Correct" into "DGS Options" section to allow/disallow curve displacement when changing gain
- Wizards: DAC enhancement
  - Add "Split DAC" enhancements
  - Add a "DAC Options" section into Scan to ease control without entering wizard
  - Add "Curve Ref Correct" into "DAC Options" section to allow/disallow curve displacement when changing gain (Dynamic DAC)
  - Allow gain adjustment during and after DAC wizard
- Wizards: allow access in STOP mode when config is valid
- Wizards: when setup is mono only, hide wizards that don't apply
- Wizards: Add gain at final step of Velocity and Zero wizard, #3020
- Wizards: Correction of TCG during calibration (allow to change gain)
- Wizards: help panel can be hidden with F1 to have more view space while calibrating
- 3d view: Redesigned 3D views
  - Bottom-right view shows different visual contexts depending on the selected tab
  - Clearer representation of probe and part
  - Many new sizing measures displayed directly in 3D view
  - Phased Array: Graphical representation of RX delay in 3D views
  - UT: Curve part Rendering
  - HAZ: Heat-Affected Zone
  - Add stream direction.
- View: Time-based ruler, #4592
- View: New grid type: Dots (Graticules)
- View: Reference A-Scan
  - Save Reference A-Scan (A-Log) into configuration file (.UTCFCG)
  - Export Reference A-Scan (A-Log) into CSV file
- View: UT, B-Log Live (Live thickness logging with part profile)
- View: 2D C-Scan are rendered during acquisition (Live Merged C-Scan)
- View: Dual Polarity Gate/Box: added as view option when scan is not rectified, controls how C-Scans, Top and End views are extracted (positive, negative or RF spectrum).
- View: Addition of fixed depth palette, can be extended out of min/max range.
- View: The B-Scan now supports 2 rendering modes (fit or scroll)
- View: Can be resized with mouse.
- Prefs: "Auto-hide menus" option to enable a maximal view area in PLAY
- Prefs: Software updates is now achieved from the application (with a single button push)
- Network: Acquisition files shared through FTP server.
- Report: Add Amplitude Tolerance for Sensitivity and TCG calibrations
- Config Summary: Added Part velocity, X-Offset
- Config Summary: Show errors and tips at top of window instead of bottom.
- Media browser: Improved media browser workflow (saving and loading files is now much easier)
- Media browser: Clearer display of all available drives.
- Media browser: Remember last Drive, Sorting and Filter.

- UI: Show full-length value when value is too large to fit
- UI: Display FPS (Frame per Second) and PRF (Pulse Repetition Frequency) in top right corner of user interface
- UI: User Interface green when using a conventional scan
- UI: PDF viewer: remember page if re-opening same document
- UI: Add Hungarian translation.
- UI: Add Italian translation.
- Defect Table (UTStudio only)
- Various performance optimizations.
- Scan: Digital filters were adjusted to provide better results.

#### Fixed:

- General: Fix issue where veo froze for 20 seconds.
- General: Correct slow saving on external USB Memory (or incomplete file)
- Probe: #3393 Save Probe with no wedge, don't ask to save integrated wedge.
- Scan: #4937 TOFD: increase precision of Lateral Wave params to 3 units after point
- Scan: #2209 Mono Acq. Freq 200MHz, NoFilter, NoRectif, Averaging 4 and more, Corrupt data
- Scan: #4589 Change analog filter strings
- Scan: #4692 #5115 IFT gate initial position not properly loaded.
- Encoder: Encoded B-Scan: fixed missed frame when moving too fast for the view
- Encoder: Reset All Pos: Sometimes left a frame behind, needed to reset twice #3304
- Encoder: #4002 #4004 Default values not used when loading a file with encoders, then loading a new file without encoders.
- Geometry: #4108 PCS value was sometimes not loaded properly
- Wizards: DGS curve shape sometimes distorted when changing ERS
- Wizards: #5372 DGS: "Gate 1 ^ ERS" measure didn't appear when no peak detected in gate
- Wizards: Wrong units in DGS attenuation factor (should be dB/mm, not dB/m).
- Wizards: Fix instability when DGS sub-curve was in ERS mode
- Wizards: Split DAC/DGS: Consider hw gain limits when adding splits
- Wizards: #4160 DAC: Calibration should not be affected by part thickness changes
- Wizards: #3488 TCG constant dB, converting to DAC should result in a curved slope
- Wizards: TCG indicator status is not saved in the file
- Wizards: TCG: Consider hw gain limits when adding TCG points
- Wizards: #2248 TCG aligned on IFT was not triggered when the interface was not saturated enough or when IFT gate was high.
- 3D view: Refresh legend and measures when changing Unit System.
- View: #2778 #4061 Grids did not immediately appear/disappear in A-Scan analysis
- View: B-log: adjust view to consider IFT
- View: #4606 Draw grids under A-Scan signal
- View: Angular cursor label should not fall outside view, fixes #5072
- View: Angular Cursor: remember FL/Angle when changing scan angles, fixes #1190
- View: #4705 Top and Merged Top views only considered positive spectrum in RF mode.
- View: "No data" color (missed frame) used in more views.
- View: Don't refresh merged views twice for each change.
- Report: #4904 Correct filename in report.
- Report: #4904 Save screen capture when saving report.
- Report: #2566 Add info for freehand cursor.
- Report: #4689 Could not generate a report using only "3D View Info".
- Network: VNC: validate passwords length, between 1 and 8 chars, fixes #5198
- Media browser: #4595 loading files should select last device automatically instead of always selecting Internal.
- Media browser: Allow access to media browser in Analysis mode (was greyed out)
- UI: #4247 Show English help files when no translation is available
- UI: #3984 Measurement List: Better sorting order.
- UI: #3971 Measurement List: TOFD measures did not work in anymore.
- UI: #3719 Don't lose frozen frame in A-Scan when saving a screenshot in Pause mode.
- Various performance improvements (especially A-Scan rendering).

#### Known issues:

1. Pitch & Catch with L-Scan cannot use elements higher than 16 (this limitation does not apply to P&C S-Scan)
2. New ".utprobe" and ".utwedge" extension for Probe and Wedge files (existing probe and wedge files not converted to new extension). Refer to application note (How to import previous probes and wedges to be recognized by VEO 3.5.5 and Higher)

#### 2012-10-29 VEO 3.2.5 Release 3 (for VEO 16:64 and 16:128) VEO Pack 3.2.5 Release 3

- EG3 Software: 3.2.5R3
- Pic Firmware: 1.9
- Vhdl Firmware 1664: 189
- Vhdl Firmware 16128: 1.3.0
- Bios: 4.13 and 4.15

- Compatible with Hardware Rev C01 and D01
- OS Image : 3.2.5R3
- Compatible with "Hardware Test Tool HTT003v1"

**Important Application Notice:**

- For standard compliancy purpose in conventional UT and TOFD, the "wedge delay" is manually controlled with the parameter "scan/acquisition area/delay". A "start path" at 0 start within the wedge.

**Featuring (for documentation refer to "VEO See Whats New in 3\_2\_5.pdf"):**

- Support of new 16:128 hardware (2 different binary packages)
- 130 Volts is available in PA (16:128 only)
- Layouts at 5 & 6 scans are available (16:128 only)
- Sensitivity/ACG calibration by section
- Create a TCG curve with a "constant dB" generation mode (Theoretical dB/mm or dB/inch)
- Edit the TCG curve generated by the "constant dB" function
- TCG on RF signal capability
- Convert the TCG to DAC and DAC to TCG (in TCG/DAC/DGS calibration wizard)
- New B-Log view (in Phased Array analysis mode)
  - Extract Data from gates to render a B-Scan from selected a beam
  - Render minimum, average, and maximum part thickness extracted from multiple beams of an L-Scan
  - Amplitude and Depth view using flank or peak as reference.
  - Limitation: Only support probes at 0 degree. Average, Minimum and Maximum thickness is extracted from a single scan axis C-SCAN (not a merged C-Scan)
- TOFD enhancement
  - Edit the PCS directly with the new "Geometry menu" for paired probe
  - Calibrate your TOFD scan with 1 parameter "Ruler LW Position"
  - Added feature: Lateral Wave Removal
- B-Log view displaying minimal thickness at a given array position
- Measurement overlay enhancement for readability
- When adding new probe/scan, ability to copy existing probe/scan
- Screen brightness Adjustment in "Prefs" menu
- Ruler considering skip cursor (bound to weld overlay feature)
- Add X-Series probes to probe database
- HAZ in the 3D view (View option)
- Remove delay induced by wedge geometry in TOFD (to behave like Conventional)
- Combined "Top ruler", "Bottom ruler", "Left ruler" and "Right ruler" in a single "Rulers" option
- Combined "Horizontal Grid" and "Vertical Grid" in a single "Grids" option
- Velocity wizard shows gate measures in the Measurement Bar
- Sonatest Internal Feature
  - Splitter programmer
  - Compatible with " Hardware Test Tool HTT003v1"
  - Automatic detection of "Hardware Test Tool" (previous and new hardware)

**Fixed:**

| <u>Release 3</u>  |
|---|
| 1. Make sure that gate measures don't get drawn outside view                                      |
| 1. (#3390)- Draw measures of current cursor over all others                                       |
| 1. "Remove DAC point" button in DAC wizard did not work after selecting a gate                    |
| 1. TOFD: LW Removal parameters could get stuck when switching between files of different version. |
| 1. Fixes software freeze when switching layouts in a specific sequence.                           |
| 1. (#2805) - Fix logos in report  |
| 1. (#3495) - Date format MM-DD-YY was not applied correctly                                       |
| 1. Callhome support: don't terminate VPN connection on main app close.                            |
| 1. Support 6-bytes board Ids (BF with serial id <100)   |
| 1. Internal test calibration test tool: Linearity and noise test update.                          |
| 1. Fix a software freeze happening randomly when grids were displayed.                            |

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|---|
| 1. TrueDepth measure was not updated immediately when Thickness changed   |
| 1. (#3669) - 3D view: correct the drawing of Pitch&Catch mono.  |
| 1. Russian language update.   |
| 1. Portuguese language update.  |
| 1. Internal test calibration test tool: Linearity and noise test update.<br>#                                   |
| <u>Release 2</u>  |
| 1. Fix the TCG curves sometimes does not load with older files  |
| 1. Correct the B-Log measurements are incorrect when using an IFT gate and/or a start path different than zero. |
| 1. The X-Series probe are correctly installed in the build.   |
| 1. Support of proper attenuators used by hardware test bench  |
| 1. Add new 37 degree wedge to the wedge database  |
| 1. Adjust default parameter of 3D view  |
| 1. Complete French and partial Portuguese translation<br>#  |
| <u>Release 1</u>  |
| 1. (#3448) - File preview slow when previewing large utdata files   |
| 1. (#3435) - Wizard Velocity, cannot be done twice.   |
| 1. (#3407) - MultipleScan + Wizard Element Activation = Crash   |
| 1. (#3367) - Fix Unexpected missed frames   |
| 1. (#3311) - 3D view: size of part is proportional to scan area   |
| 1. (#3273) - Allow to configure a scan with an "Scan Start Pos" 500 and a "Scan Distance" of -500               |
| 1. (#3185) - Change angular resolution give error.  |
| 1. (#2972) - TOFD BW Ruler calibration enhanced   |
| 1. (#2524) - 3D views part in the Report are not well displayed   |
| 1. (#2209) - Mono Acq. Freq 200MHz, NoFilter, NoRectif, Averaging 4 and more enhanced signal                    |
| 1. (#2063) - TCG Wizard - Envelope in S-scan doesn't need to be displayed with auto TCG                         |
| 1. (#1933) - 3D Views tag's Title are not updated when we change Display Mode in Properties                     |
| 1. (#3425) - TCG step 4, multi-beam not applied   |
| 1. (#3424) - Wedge Delay, Step 4, the ruler of bottom window shall be blue (not green)                          |
| 1. (#3392) - Clear calibration, cancel and say "NO" do not cancel correctly.                                    |
| 1. (#3384) - Wizard Wedge Delay, No Reference Depth in A-scan   |
| 1. (#3368) - Unexpected beam exit point outside wedge error while using a 64 elements probe.                    |
| 1. (#3243) - Wizard Velocity, Step Scan Setting, S-scan had change for S-scan 0deg at 1 beam                    |
| 1. (#3241) - Wizard Velocity, Gate stay at 0mm with range 0mm   |
| 1. (#3226) - Rename "Rectangular Box" & "Square Box" to "Extraction Box"  |
| 1. (#3182) - With a calibrate scan, if change Scan--> Delay, calibration need break.                            |
| 1. (#3181) - Velocity wizard, Reflector 2, In Menu gate name = 2, A-scan gate name = 1                          |

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| 1. (#3069) - Load Wedge instead of Probe in tab Probe Segfault   |
| 1. (#3049) - Mono, Config issue when changing Dual Crystal to Mono Crystal.                                      |
| 1. (#3045) - CSV in amplitude, bad header  |
| 1. (#3039) - Velocity Wizard, Gain should reset when resetting calibration                                       |
| 1. (#2956) - Setup PA to Setup TOFD, TOFD signal stay rectify.   |
| 1. (#2955) - Encoder, If Index Step < 1 mm, Veo Freeze   |
| 1. (#2843) - Add ability to remove an option (ex:TOFD) that was added by re-entering activation code             |
| 1. (#2788) - Velocity Wizard - Two gates required at the validation step   |
| 1. (#2720) - Vertical Grid for A-scan in Horizontal Views doesn't get all views with grid                        |
| 1. (#2686) - Wizard DAC, Nb Sub-levels not keep if return in DAC wizard  |
| 1. (#2511) - Crash at shutdown after save .utdata encoded  |
| 1. (#2377) - Calibration breaker not work correctly  |
| 1. (#2165) - .PNG files can be previewed on the veo  |
| 1. (#2146) - Scenario crash when play an .utdata from a removed External USB key.                                |
| 1. (#2024) - Wizards should exit when the user wants to keep his old calibration                                 |
| 1. (#1036) - Operational State modification after Recording, at the end of recording                             |
| 1. (#2537) - TOFD envelope, there are some data corrupting A-scan's signal                                       |
| 1. (#2761) - Mono voltage error  |
| 1. (#551) - Automatic filtering rules enhanced   |
| 1. (#3334) - Enhance velocity calibration on radius.   |
| 1. (#3041) - Correct open UTDATA when in Play mode on UTCFG  |
| 1. (#2958) - Fix some measures not refreshed when changing unit system.  |
| 1. (#2691) - Possibility to disable "Gate Follow Peak" if IFT are activated in wizard                            |
| 1. (#3266) - Wizard Velocity, Gate level value wrong   |
| 1. (#2792) - TOFD LW Pos cursor shall be black when high contrast is selected                                    |
| 1. (#2678) - Wedge type = None, Hide Identifiers and Setting categorize menu                                     |
| 1. (#3247) - Wizard Velocity, Mono RF, negative peak detection enhancement                                       |
| 1. (#3233) - TOFD Option lost  |
| 1. (#188) - Display "First Element" only if "Probe Qty" = 2 or above   |
| 1. (#3239) - Issue with 4 Phased Array scan and 2 probes   |
| 1. (#3229) - Fix inconsistency in TCG wizard, gain vs not in wizard TCG  |
| 1. (#2709) - Veo freeze when idle too long   |
| 1. (#1906) - Assert in time base filename generation after long time   |
| 1. (#3154) - Enhance error message labels for understandability  |
| 1. (#1624) - The measurement for each cursor are customized on a cursor type bases                               |
| 1. (#3050) - S-Scan, Stop angle cannot have less than 70deg in specific scenario                                 |
| 1. (#2842) - Add Cartesian Cursor in Merged views init pos. at the top left corner of the views. (specific file) |

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|---|
| 1. (#2957) - Palette color scaling is not correct in C-scan Depth mode in Imperial.     |
| 1. (#2783) - Missing Ampl. Low and Ampl. High parameters in View tab for TOFD type scan |
| 1. (#3066) F2 key did not work anymore in some contexts                                 |
| 1. (#3140) add software gain in report  |
| 1. Merged views: Data drawn outside view when encoder start pos != 0mm                  |
| 1. Increase maximum zoom level in encoded views   |
| 1. Disable double Resolution when ActivatedElement == 1                                 |
| 1. Pressing STOP was slow when analysing large files with Merged views displayed        |
| 1. Wedge Reference Pos was not centered when using a PA probe without a wedge           |
| 1. Element Act Wizard: fix some crashes in multi-probe setups                           |
| 1. Probe TX/RX showed weird value when no appropriate probe was available               |
| 1. "Saving..." message was not always shown   |

#### Known issues:

1. Zoom button not supported yet in A-Scan, S-Scan and L-Scan
2. Pitch & Catch with L-Scan cannot use elements higher than 16 (this limitation does not apply to P&C S-Scan)
3. Recommended to create all scans before starting calibrations

#### 2012-01-16 VEO 3.2.1 Release 1 VEO Pack 3.2.1 Release 1

- EG3 Software: 3.2.1R1
- Pic Firmware: 1.8 or 3.2.1R1
- Vhdl Firmware: 187
- Bios: 4.13
- Compatible with Hardware Rev C01 and D01
- OS Image : 3.2.0R1

#### Featuring (for documentation refer to "VEO See Whats New in 3\_2\_1.pdf"):

- Add Merged C-Scan view (only available in analysis) with 2D Encoded files for Conventional A-Scan:
  - Merged C-Scan view (No Zoom only in scan axis)
  - Amplitude C-Scan will be drawn using peak as reference.
  - Time of Flight (Depth) C-Scan are drawn using peak or flank as reference (user selectable).
  - Options are available in view tab (when C-Scan view is selected), data can be filtered using reference gate (optional) and data gate. (G1/, G1^,...)
  - Limitation: Only support probes at 0 degree
- Hardware test improvements (Horizontal limits, summary of hardware report)
- Add Export To CSV for Merged C-Scan, C-Scan and Top views (Ampl. and Depth)
- Enhance translation (German, Spanish, Dutch)
- Enable PRF to trigger pin in I/O connector (refer to "Service Bulletin 14")

#### Fixed:

1. (#2783) -Fix parameters "Palette Ampl. Low/High" not shown in TOFD view
2. (#2753) - Velocity wizard parameters were not correctly restored.
3. (#2983) - Fixed incorrect ruler in merged views.
4. (#3002) - F3 button: Focus Enc NextIndex button if it exists, otherwise focus ResetPos.
5. (#2957) - Fix depth palette values were not converted to inches in c-scan palette ruler,
6. (#2931) - Fix wedge refracted angle and cut angle now use the part velocity
7. (#2847) - Fix software lock up when showing weld overlay when encoding area is rotated 90 degrees
8. (#2796) - Fix TCG at Acq. Freq of 200MHz
9. (#2844) - Fix Smoothing DSP at Acq. Freq of 200MHz
10. Fix software lockup when loading Utdata after Utcfg under certain circumstances
11. Always show dB Ref measurement for gates, even when there's no DAC/DGS/TCG curve
12. Depth measurement correction millimeters/inches in CSV files
13. Correct the software gain behavior when loading a utcfg file after a utdata
14. Correct 3D drawing of a probe inset

15. Encoder Stop now aligned to the last valid encoder position, considering distance and step.
16. Fix issue where the wedge menu items would not reload.

#### Known issues:

1. PA voltage is limited to 100V
2. Zoom button not supported yet in A-Scan, S-Scan and L-Scan
3. Pitch & Catch with L-Scan cannot use elements higher than 16 (this limitation does not apply to P&C S-Scan)
4. Recommended to create all scans before starting calibrations

#### Known issues that shall be solved on next release :

1. (#2209) - Conventional UT at Acq. Freq 200MHz, NoFilter, NoRectif, Averaging 4 and more, leads to corrupt signal (spike at 3usec) (UNDER TESTS)
2. (#3038) - Conventional UT, with merged C-scan cartesian extractor measure are incorrect with angular wedges setups

#### 2011-10-12 VEO 3.2.0 Release 1

#### VEO Pack VEO 3.2.0 Release 1

- EG3 Software: 3.2.0 R1
- Pic Firmware: 1.8 or 3.2.0 R1
- Vhdl Firmware: 186
- Bios: 4.13
- Compatible with Hardware Rev C01 and D01
- OS Image : 3.2.0 R1

#### Featuring (for documentation refer to "VEO See Whats New in 3\_2\_0.pdf"):

- Updated translation of:
  - English
  - French
  - Russian
  - Chinese
  - Spanish
- Add a C-Scan view (available in acquisition and in analysis):
  - C-Scans are allowed with L-Scan type primary scan
  - C-Scans are created using datasets defined by gates
  - New options are available in view tab (when C-Scan view is selected), data can be filtered using reference gate (optional) and data gate. (G1/, G1^,...)
- Add Merged Top and Merged C-Scan view (only available in analysis) with 2D Encoded files
  - Merged TOP view (No Zoom)
  - Merged C-Scan view (No Zoom)
  - Amplitude Top View / C-Scan will be drawn using peak as reference.
  - Time of Flight (Depth) C-Scan are drawn using peak or flank as reference (user selectable).
- Enhanced menu structure (for harmonization with future products and better user efficiency)
  - Menu are simplified and user customizable with collapsible Menus
  - Probe tab is simplified, optional features are in "advanced settings"
  - Add and remove probe/wedge is now achieved within probe tab (user can select the probe to delete).
  - Add and remove scan is now achieved within scan tab (user can select the scan to delete).
  - Add a "Measures" tab to select measures and measure references. This modification follows use case scenario of most users.
  - View and Cursor tab are split from other tab because their behavior is different (their content is dynamic)
  - Many other refinements
- Palettes:
  - Changing layouts does not affect palettes and cursor positions anymore
  - VEO all palettes can be changed independently or as a group: depth palette, amplitude palette
  - Inverted palettes created
  - New color palettes: Cubic Law and Fire&Ice
- Gates:
  - Gate trigger indicators are drawn for each gate (flank or peak).
  - Display gate position in S-scan or L-scan (onto extractor)
  - Draw extractors on beam center
  - Enable gate alarms to trigger pin in I/O connector, I Output GPIO 2 (pin 3) in sync with alarm LED on front membrane).
  - "Gate Alarm" in Cursor tab (when gate is selected) can determine the behavior of front panel Alarm Led for each gate
- Added an option to "Sensitivity wizard" (ACG): it is now possible to proceed by section (ex: 35 to 55 deg then 56 to 75)
- TOFD becomes a reselling optional feature. All units already delivered keep it when upgrading. Enable in Preferences/Add Options...
- Add Freehand cursor info in reports

#### Fixed:

1. (#2569) - Skip measure or "True Depth Measurement" are wrong in inches

2. (#2572) - Creating report with setup Dual Crystal may crash device
3. (#302) - Gates were moved when modifying sub-sampling
4. (#2511) - Device lock during power off sequence

**Known issues:**

1. PA voltage is limited to 100V
2. Zoom button not supported yet in A-Scan, S-Scan and L-Scan
3. Pitch & Catch with L-Scan cannot use elements higher than 16 (this limitation does not apply to P&C S-Scan)
4. Recommended to create all scans before starting calibrations
5. (#2796) -TCG do not work when Acq. Freq = 200MHz
6. (#2209) - Conventional UT at Acq. Freq 200MHz, NoFilter, NoRectif, Averaging 4 and more, leads to corrupt signal
7. In the current version, when the Weld is set to none it is possible to see the skip. In all other weld type it will cause regression (freeze or not show the weld overlay).

**2011-06-22 VEO 3.1.40 Release 1**

**VEO Pack 3.1.40 Release 1**

- EG3 Software: 3.1.40R1
- Pic Firmware: 1.8 or 3.1.40R1
- Vhdl Firmware: 185
- Bios: 4.13
- Compatible with Hardware Rev C01 and D01
- OS Image : 3.1.40R1

**Featuring (for documentation refer to "VEO See Whats New in 3\_1\_40.pptx"):**

- VEO shares its USB memory keys on Ethernet
- DC (Dual Crystal) Probe support, probe database updated with all relevant Sonatest DC probes
- New Auto Gain Wizard
- Increase the multi-scan capability, 4 scans, 6 probes
- Filename auto generation (Increment, Date & Time, Encoding)
- Soft Gain available in analysis: global to all views
- True Depth measures in Select Measurements (considers part thickness)
- Mono Active Edge Enabled (not enabled on rev C Mono-element board)
- AWS: A-B-C-D measures available (previously iRating), Reference Amplitude now adjustable
- Add dB REF measures (Peak amplitude related to the reference amplitude or the reference DAC/DGS)
- Hi-Resolution image in report
- Grid in S/L/A/TOP-View for engineering calculation
- IFT gate can be enabled in post analysis
- Analysis mode - Should start in "live" mode automatically
- Update french translation
- When booting device, remember last selected file.
- Show free disk space in Media Browser

**Fixed:**

1. Fixed: (#2405) Gate position lost from VEO to UtStudio
2. Fixed: (#2344) When using a probe at 270 deg rotation with a view/view orientation=Horizontal right, the Horizontal ruler and red dot rendering is incorrect.
3. Fixed: (#2386) Encoder with a resolution of more than 25 ticks/mm have an error greater than 0.5%.
4. Fixed: (#2333 and #2434) - When using IFT, measures on "Frame Extractor" and "Cartesian Cursor" is mistaken (max error: delay between shortest and longest IFT).

**Known issues:**

1. PA voltage is limited to 100V on rev C
2. Zoom button not supported yet in A-Scan, S-Scan and L-Scan
3. Pitch & Catch with L-Scan cannot use elements higher than 16 (this limitation does not apply to P&C S-Scan)
4. (#2209) - Conventional UT at Acq. Freq 200MHz, NoFilter, NoRectif, Averaging 4 and more, leads to corrupt signal(spike at 3usec)
5. Recommended to create all scans before starting calibrations
6. (#2569) Skip measure or "True Depth Measurement" a are mistaken in inches (requesting customers will be provided on a remote support call with 3.1.41 Beta1)
7. (#2572): Creating report with setup Dual Crystal may crash device

**2011-03-2 3.1.35 Release 1**

**Pack 3.1.35 Release 1**



- EG3 Software: 3.1.35R1 dev5483
- Pic Firmware: 1.8 or 3.1.35R1 dev5483
- Vhdl Firmware: 180
- Bios: 4.13
- Compatible with Hardware Rev C01 and D01
- OS Image : 3.1.35R1

#### Featuring:

- Add cursor delta measurement to report
- Beam intersection and PCS references added to report
- Thinner weld overlay
- Complete French translation

#### Fixed:

- Ruler Zero is now always aligned with interface when using IFT
- T5 probe have been corrected from probe DB
- A-Scan + IFT: measures are fixed when "IFT Culling" is not active
- IFT: "IFT culling" switching ON and OFF, gate position updated adequately
- All measurements now referenced to IFT Interface, thus "G1-I1" measures were obsoleted
- DAC specific measurements were missing
- Fix occasional crash when loading a predefined layout with extracted a A-scan from TOFD
- Fix occasional crash when pressing "Next Reflector" in TCG auto (box not covering all angles)
- Make Cartesian Extractor only appear in Analysis mode
- Fix misleading operation when saving UTCFG from UTDATA
- Fix TCG, gain was not applied properly if Start Path was changed after calibrated
- Fix incorrect behaviour when 2 sequential "Apply TCG at Reflector" of TCG wizard
- Fix occasional crash when changing View:Path Mode for Depth Mode in Conventional Setup
- Fix Sub-Sampling "Auto", did not scale on long path
- Fix occasional crash when canceling "Element Activation Wizard"
- Fix occasional crash when changing L-Scan "Double Resolution" parameter
- General review of parameters disabling calibrations

#### Known issues:

1. PA voltage is limited to 100V on rev C and D hardware
2. Zoom button not supported yet in A-Scan, S-Scan and L-Scan
3. Pitch & Catch with L-Scan cannot use elements higher than 16 (this limitation does not apply to P&C S-Scan)
4. The h1 - h2 Dist and h1 - h2 Dist measures does not work when they are loaded from an older UTCFG (workaround: reselect the measure in measurement list and save config)
5. Recommended to create all scans before starting calibrations
6. (#2405) - Gate position lost from VEO to UtStudio
7. (#2209) - Conventional UT at Acq. Freq 200MHz, NoFilter, NoRectif, Averaging 4 and more, leads to corrupt signal (spike at 3usec)
8. (#2344) - When using a probe at 270 deg rotation with a view/view orientation=Horizontal right, the Horizontal ruler and red dot rendering is incorrect.
9. (#2386) Encoder with a resolution of more than 25 ticks/mm have an error greater than 0.5%.
10. (#2387) Differential encoder calibration wizard of index axis have a error of 50%
11. (#2333 and #2434) - When using IFT, measures on "Frame Extractor" and "Cartesian Cursor" is mistaken (UTStudio and VEO). The only workaround is to gather measurements from gate in A-scan.

#### 2011-01-21 3.1.33 Release 1

##### Pack 3.1.33 Release 1

- EG3 Software: 3.1.33R1 dev5349
- Pic Firmware: 1.8 or 3.1.33R1 dev5349
- Vhdl Firmware: 180
- Bios: 4.13
- Compatible with Hardware Rev C01
- OS Image : 3.1.33R1

#### Featuring:

- Add Amplitude and Depth measurements in Top and End views with Cartesian Cursor
- "Color Map Compression"
  - with mouse in color palette ruler
  - with "Palette Depth" or "Palette Amplitude" boundaries in view menu
- Add G1/ - l/ measurement
- Faster B-Scan when Top (C-Scan) or End view are displayed

- Support of 2D encoders (2nd axis with software clicker (F3 button) or encoder)
- In Analysis mode, cursors are linked as per "Sonatest Application group" requirements. Add a new type of extractor "Frame Extractor"
  - When opening a UTDATA, a new cursor that is linked in all views appears, to simplify analysis.
- Depth Rulers in A-Scan (as a view option, in view tab)
- 0.1 dB Resolution Gain
  - Increases control and precision on signal amplitude
  - Increases performance and precision of TCG/DAC/DGS and Sensitivity Wizards
- Measure reference, user selectable
  - Measure Referenced to Part Datum or Wedge
  - Change the computation and representation of Ruler and Measures (gates, measurement bar)
- Automated TCG available for Phased Array
  - Fast and easy calibration of all beams
- TCG/DAC/DGS independent to acquisition path
  - Ability to change the acquisition path for the duration of the wizard
  - Ability to change path once calibration has been performed
- TCG wizard now considers IFT (easy to calibrate with wheel probe)
- Report: Cursor reporting layout reviewed
- 3D Views integrated to report
- Customer custom logo in report (Inspection : Report options)
- IFT gate can be moved in Analysis mode
- Save UTCFG from an existing UTDATA
- Save UTDATA once layout, cursors and gate have been modified
- Multiple Interface Triggering measurements improvements
- Multiple Interface Triggering fixes when using wizards
- Added TOFD Straightening feature
- Add new tips to the configuration summary, and make the summary window available as a View in UTStudio
- F2 now highlights the View menu instead of the Cursor menu
- Add special colors for No-data, No-trigger and Filtered-data in palette files

#### Fixed:

- Crash on wizard completion
- Rulers in inches now separated in 1/8<sup>th</sup> instead of 1/10<sup>th</sup> Make the battery status indicator vertical to reflect the physical position of batteries
- Fix DAC and DGS curved drawing that were sometimes acting hectic near the start path
- Fix default cursor links between views in TOFD and Mono-element layouts
- Avoid visual "stuttering" in Top and End views
- In L-scan setup, with NbActiveElmt equal 1. When we enter in Element Activation Wizard, some time, the first and second element not draw properly.

#### Known issues:

- PA voltage is limited to 100V on rev C hardware
- Zoom button not supported yet in A-Scan, S-Scan and L-Scan
- Pitch & Catch with L-Scan cannot use elements higher than 16 (this limitation does not apply to P&C S-Scan)
- The h1 - h2 Dist and h1 - h2 Dist does not work when they are loaded from an older UTCFG (workaround: reselect the measure in measurement list and save config)
- Pitch and Catch, Cable issue, FLC, other cable???

#### 2010-16-12 3.1.31 Release 4

##### Pack 3.1.31 Release4

- EG3 Software: 3.1.31R4 or r5126 (emb-3.1.31R4)
- Pic Firmware: 1.7.3 or r4715 (emb-3.1.31R2)
- Vhdl Firmware: 175
- Bios: 4.13
- Compatible with Hardware Rev C01
- FSVS: r190

##### Pack 3.1.31 Release3

- EG3 Software: 3.1.31R3 or r4859 (emb-3.1.31R3)
- Pic Firmware: 1.7.3 or r4715 (emb-3.1.31R2)
- Vhdl Firmware: 175
- Bios: 4.13
- Compatible with Hardware Rev C01
- FSVS: r162

##### Pack 3.1.31 Release2

- EG3 Software: 3.1.31R2 or r4715 (emb-3.1.31R2)
- Pic Firmware: 1.7.3 or r4715 (emb-3.1.31R2)
- Vhdl Firmware: 175
- Bios: 4.13
- Compatible with Hardware Rev C01
- FSVS: r162

#### **Pack 3.1.31 Release1**

- EG3 Software: 3.1.31R2 or r4702 (emb-3.1.31R2)
- Pic Firmware: 1.7.3 or r4702 (emb-3.1.31R2)
- Vhdl Firmware: 175
- Bios: 4.13
- Compatible with Hardware Rev C01
- FSVS: r162

#### **Pack 3.1.31 Release**

- EG3 Software: 3.1.31R1 or r4702 (stable)
- Pic Firmware: 1.7.3 or r4702 (stable)
- Vhdl Firmware: 175
- Bios: 4.13
- Compatible with Hardware Rev C01
- FSVS: r162

#### **Featuring:**

- see new features highlights in : "What is new in 3.1.31.doc"
- 4 PA Scans capability
- New palettes (same as RapidScan)
- Support differential encoders
- Angular ruler added to view options
- Increased scan speed and voltage for L-Scan encoded setup (+/- 8x faster) (>20 cm/s with wheel probe, 15mm path, 100V, 20KHz PRF)
- IFT: Interface Gate added and Gate minus interface measurement added
- DGS/AVG Wizard (Conventional UT)
- Velocity and Zero Wizard has been updated to calibrate "probe zero"
- TX and RX Hardware tests as per EN12668 included to release(picoscope and hardware tools integration for service/prod)
- On-line help, Quick Start Guide and User Guide integration to embedded application (F1 button)
- Added Layout with two 2 scans with 2 cross section boxes for each scan
- Exterior Color Palette in Pref:Background (documentation and outdoors usage)
- Link Cursor/Layout format/Workspace file
- About: System Info Screen (temperatures, fan, versions, serial ids for maintenance as a reference)
- Angular ruler
- Added Element Check Wizard to disable individual probe elements
- Preference: Remote support button (through network connection)
- Translation: French (partial, on-line help not completed)
- Translation: German (partial, on-line help not completed)
- New "cross section box" for Wedge Delay and Sensitivity wizards (getting ready for calibration by section)
- All cursors movable with mouse
- New DGS wizard (AVG)
- Near Field Display
- Software Gain in Analysis mode
- Veo detects changes in configuration and prompts before loading another file.
- Allow 4 Phased Array Scans

•When Mono and Phased array are combined, maximum 3 scans

•Mono (conventional only), maximum 3 scans

•Phased array only, maximum 4 scans

- Skip cursor (part thickness) in A-Scan
- Changing material updates velocity
- AWS Indication Rating (iRating) now calculated properly
- Can manually enable "VGA Output" in "Pref:Activate VGA Port"

#### **Fixed:**

- 3.1.31R4: Gate measurement, dB not show properly when load Example configuration.
- 3.1.31R4: Load all Preference properly.
- 3.1.31R4: Fix crash when create folder during save configuration, data...

- 3.1.31R4: Fix crash when try load previous session and calibration restore correctly.
- 3.1.31R4: Fix saving configuration issue when Language are French or Russian
- 3.1.31R4: Fix assert when try change number of active element in L-scan setup.
- 3.1.31R3: Ref Gain not saved or restored properly in UTDATA file in analysis
- 3.1.31R3: TCG/DAC curves not showing up in analysis
- 3.1.31R3: Wheel firmware update is now included to update
- 3.1.31R2 cannot calibrate TCG if the config never had TCG before
- Preferences and Unit System are now saved through reboot
- The battery widget gets updated better
- Wizard data is saved in UTCFG file
- Fix several crash using mediabrowser (filters)
- TCG wizard behavior improved for low PRF setup
- Add report date to report
- Add focal distance to scan summary
- Time based UTDATA can be analyzed (if file have been acquired with 3.1.31 and higher)
- TCG/DAC curves cannot be displayed within wizard if the setup never had curve calibrated previously.

#### Known issues:

- PA voltage is limited to 100V on rev C hardware
- Zoom button not supported yet (A-Scan, for S-Scan and L-Scan)
- Pitch & Catch with L-Scan cannot use elements higher than 16 (this limitation does not apply to P&C S-Scan)
- In analysis mode, the hyperbolic cursors does not return measurement in the "measurement bar" (H^%, H^\*)
- The h1 - h2 Dist and h1 - h2 Dist does not work when they are loaded from the UTCFG (workaround: reselect the measure in measurement list and save config)
- Do all wizard: velocity, WD, ACG, TCG, get to probe activation wiz ,... Pop up answer no, CRASH
- Once an element have been eliminated for "element activation wizard" the device becomes unstable
- In L-scan setup, with NbActiveElmt equal 1. When we enter in Element Activation Wizard, some time, the first and second element not draw properly.

#### 2010-08-09 Milestone Release 3.1.22 (Fix for wheel problem)

##### Pack 3.1.22

- EG3 Software: 3.1.2 or r4247
- Pic Firmware: 1.7 or r4288
- Vhdl Firmware: 165 or vhd:r772
- Bios: 4.13
- Hardware Rev C01
- FSVS: r91

#### Featuring:

- None
- (post poned 3.1.3) Show IFT gate
- (post poned 3.1.3) "Preference: Support Console", "Call Home" button for support (vnc connection)
- (post poned 3.1.4) Zoom button

#### Fixed:

- Clickwheel that does not initialize properly on boot up

#### 2010-08-09 Milestone Release 3.1.21 (Addition of production tools)

##### Pack 3.1.21

- EG3 Software: 3.1.2 or r4247
- Pic Firmware: 1.5 or r3833
- Vhdl Firmware: 165 or vhd:r772
- Bios: 4.13
- Hardware Rev C01
- FSVS: r91

#### Featuring:

- Add Production tools (Prog EEPROM)
- (post poned 3.1.3) Show IFT gate
- (post poned 3.1.3) "Preference: Support Console", "Call Home" button for support (vnc connection)
- (post poned 3.1.4) Zoom button

**Fixed:**

- Range path can be modified after Wedge Delay and Sensitivity wizard

**Known issues:**

- Wedge Delay Wizard : Press "Reset Calibration" can create then press calibrate causes crashes
- Crash: Media browser crash under unknown sequences
- OK and down arrow button stick (not mechanical), (workaround: press another key)
- Curved Wedge, not supported
- TCG calibration may need to be applied twice if initial amplitude is too low
- Calibration created with veo 3.1.1 and previous must be reviewed before usage
- Time based recording utdata cannot be analysed
- USB keys that don't have partitions (no partition number) are not recognized by the veo
- Voltage locked to 100 V until pre-prod refurbish process is completed
- Live zooming is schedule for 3.2.x releases. (the button is unused at this time)
- Time based recording in not supported in current release (only encoded)

**2010-07-16 Milestone Release 3.1.2 (First Customer Release)****Pack 3.1.2**

- EG3 Software: 3.1.2 or r4141
- Pic Firmware: 1.5 or r3833
- Vhdl Firmware: 165 or vhd:r772
- Bios: 4.13
- Hardware Rev C01
- FSVS: r91

**Featuring:**

- Fix Release 3.1.1 crash issues
- All Calibration Wizards reviewed (all types, all blocks, all probes, all scan types)
- New "frame cursor" in analysis in B/Top/End Views
- View option to show color palettes for any view
- Production image support VNC Connection (default password: veo ) (devices and remote must be on the same LAN)
- Wedge delay Wizard is now back-propagating modifications in focal law calculator (no more stairs effect)
- Add "Preference:Support Console" to copy Error Log button to external key for support (tarball)
- Add Encoder Calibration Wizard
- Separate "binary" included to image: 4 PA scan configuration (for BSI standards)
- "Wedge Reference" displayed in surface distance ruler
- "Encoder Tag" displayed in "Scan Axis" ruler
- User defined color palettes (palette.xml) now read from "local\db\palette" (see FAQ Veo 3\_1\_2.dox)
- Support of TOFD 200MHz clock
- Option management and Serial number management (will require password at first reboot)
- Mono Element Wedge now specified with refracted angle (instead of cut angle)
- Add Example\_Element\_Check.utcfg to support probe elements verification (not a wizard)
- Add generic Conventional probes database
- TCG integrate « adaptive gain » correction
- DHCP and IP address management now available (for VNC capability only)
- (post poned 3.1.3) Show IFT gate
- (post poned 3.1.3) "Preference: Support Console", "Call Home" button for support (vnc connection)
- (post poned 3.1.4) Zoom button

**Fixed:**

- Fix: TCG Wizard crash when any scan menu parameters are modified prior to performing a TCG
- Conventional scans use 32 dB and 36 dB for 30 dB attenuator hysteresis (exactly like D-Series)
- Cartesian Cursor identifier displayed in all views (END-B-A-View)
- Fix "Layout selector" window freeze.
- Fix Reconnect VNC failure
- Fix VHDL and Software, it supported with limitation (1-8 TX, 47-64 RX). (validation still under way)
- Position of "Box" in Wedge Delay has limitation to avoid improper user manipulation
- All Layouts reviewed
- Example files and databases are read only (updated through system update)
- MediaBrowser support read only file now
- Flush TCG Curve if TCG becomes invalid

- Fix: Load setup while looking at a report (remember the crash in the auditorium)
- Sensitivity Wizard enhancement when re-re-re-apply calibration (still some work to do)
- Fix: TOFD Crash when changing "range path" in PLAY
- Remove Harfang probes replaced by Sonatest
- Increased text size in Popup windows.
- No more popup window that can be out of screen or in background (previously needed to reboot or to plug a keyboard)
- The Red error messages have better visibility
- Check free space when recording data

#### Known issues:

- No system crash known under specific sequence
- Crash: Media browser crash under unknown sequence
- OK and down arrow button stick (not mechanical), (workaround: press another key)
- Curved Wedge, not supported
- TCG calibration may need to be applied twice if initial amplitude is too low
- Calibration created with veo 3.1.1 and previous must be reviewed before usage
- Time based recording utdata cannot be analysed
- USB key that do not have partitions (no partition number) are not recognized by the veo

#### 2010-05-16 Milestone Release 3.1.1 (Launch to distributor)

##### Pack 3.1.1

- EG3 Software: 3.1.1 or r3833
- Pic Firmware: 1.5 or r3833
- Vhdl Firmware: 158 or vhd:r740
- Bios: 4.13
- Hardware Rev C01

#### Featuring:

- Fix 50 Mhz VHDL instability
- Cursor and ruler measurements reference to wedge reference
- 3D Second leg weld drawing
- Weld Overlay available in acquisition over the scan
- Add Menu parameters in Geometry for translation of "Encoding Area Origin" from "Part Datum"
- Top and End view in TOF (depth as a view option)
- Hyperbolic Cursor now available
- Scan from a probe at 270deg is displayed in reverse (as a view option)
- Ultra Basic Analysis sync with Ultra Basic UtStudio (link with this version)
- IFT on HCL and VHDL only (for internal demo purpose only)
- Configuration management: Board Identification
- Signal Averaging now available
- Probe DB (with unofficial short Olympus probe DB)
- Analysis Mode now available
- Probe Menu/Wedge Database now available (load and save)
- Calibrations (Velocity, Sensitivity, Wedge delay, TCG, DAC supported, see limitation below)

#### Known issues:

- Crash : view report, open a new config by pressing LOAD... CRASH
- Crash : Geometry with encoding area rotated (90deg example), press PLAY, CRASH
- Crash: Recording big file are known to create.... CRASH
- Crash: Media browser crash under unknown sequence
- Crash: In TOFD, Crash when changing the "start path" after modifying the "BW offset"
- Crash: Combination of TOP/END view and recording big file are known to create.... CRASH
- OK and down arrow stick (mechanically)(when this situation occurs the dialog box are sent to back of the application...), need to reboot the unit or to plug a mouse)
- UtStudio has no measure bar
- Wedge Delay Calibration, only work on IIW block
- Sensitivity Calibration, only work on IIW block

#### 2010-02-15 Milestone Release 3.1.0 (Demo to some distributors)

##### Pack 3.1.0

- EG3: r2642
- PicFirmware: in r2642
- Vhdl: vhdl:r609

**Featuring:**

- DAC on A-scan
- GUI : PDF report creation (hardcoded)
- GUI : PDF report viewer
- GUI : Item Specific Menu
- Views: Top View (scrolling or not)
- Views: 2D probe disposition in beam viewer (top view of a multi probes setup)
- Gates/Alarm: LED Signal on casing
- Calibration: TOFD Range
- Menu : Short and Long Menu
- Menu : Lock configuration (to avoid user incorrect entry)
- Calibrations (ACG on SDH, TCG on SDH and Notch)

**Known issues:**

- Not applicable