

# UltraVision TOUCH 3.8R30

# (PC and TOPAZ versions)

# **Technical Guidelines**



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### 1. Specimen settings

#### **1.1 Custom Overlay**

To use a Custom Overlay on a specimen:

1. From the **Specimen** menu, select the **Custom Overlay** tab.

	Specimen	Overlay	Custom Overlay	,	
📚 Specimen	Overlay	Plane Lir	ne Style P	osition & Scale	Flip & Exchange
	-	Side			

2. Tap **Overlay**.

Load Sp	ecimen	Profile	
Specimen	Overlay	Plane	Line
	-	Side	

3. Load a DXF custom overlay.

	Specir	nen Overl	ay Cust	om rlay	
Specimen	Overlay	Plane	Line Style	Position & Scale	Flip & Exchange
<b>F</b>	9 B-1182	Тор			

4. Select the view on which the 2D profile overlay should be displayed and tap **Plane**.



- 5. Select **Top**, **Side** or **End** if you want the selected view to be the TOP, the SIDE or the END of the overlay.
- 6. The **Overlay Editor** allows you to modify the color, width and style of the **Custom Overlay**. Select **Line Style**.

Overlay Editor				
Colo	r,		_	
Widt	h .			
Style	) .		_	
	Acce	pt		

7. Tap Position & Scale.

By	Referer	nce Curs	or Position		
E	3y Fram	e Within	Cursors		
	Configure				
ane	Line Style	Position & Scale	Flip & Exchange		
ор	l				

- **By Reference Cursor Position** will position the origin of the 2D profile at the intersection of the reference cursors.
- **By Frame Within Cursors** will position and size the 2D profile in the frame contained within the reference and measurement cursors.
- **Configure...** allows you to manually enter the **Scan** and **Index** positions of the origin, and the scale of the 2D Profile.
- 8. Tap Flip & Exchange



This button allows flipping the custom overlay along the selected axis and exchanging the axis on the active view.

#### **1.2 Specimen edition in Analysis**

In analysis mode, Specimen settings can be changed. Collected data is not affected. Changing the specimen settings can help modifying the overlay for analysis purposes.

#### 2 Setup creation

#### 2.1 Number of rebounds inside specimen

UltraVision now allows you to control the number of rebounds displayed in the Calculator view.

To use the tool:

1. From the Channels menu, select Configuration, and then select the Calculator tab.

	<u>)</u> )	Configu	ration	Geome	etry	Probe Geometry	Conne	ction	Bear	ms		
Channels	Currer De	nt Channel efault hannel	Config Phase Pulse	guration d Array e Echo	Probe	Hz AM	Vedge - 55SW	Calc	ulator	Load	1 Law File	Optimization

2. The Calculator Information menu opens.



When **Display Rebound** is set to **Auto**, the beam will use the minimum number of rebounds to reach the focal point, all the while staying inside the specimen.



The **Display Rebound** option also allows you to select the number of rebounds displayed in the **Calculator** view up to six rebounds.

### 3 Inspection tools

#### 3.1 AWS Information Fields

#### 3.1.1 Understanding AWS readings

The American Welding Society Structural Welding defines in Code section D1.1 a technique for classifying discontinuities in welds according to a "D rating" that is calculated based on three different parameters A, B and C.

The procedures and standards set forth in Code D1.1 Part F typically apply for the UT inspection of groove welds and HAZs between the thicknesses of 8 mm and 200 mm (5/16 in and 8 in) inclusive.

**A** is the indication level in dB (calculated using the Autoset Target set for calibration (Tools -> Options -> Amplitude menu)

System	Amplit	ude Range	0 - 100%
Amplitude	Amplit	ude Manipulation Mode	Soft-Gain
Report	Autose	et Target	80.0 %
Notification	TOFD	Autoset Target	60.0 %
Inspection	Autose	et Source	Gate 1
Screen Capture			

**B** = Reference indication level in dB (Reference Gain)

**C** = Material attenuation factor expressed in dB calculated as (2x [sound-path length in inches – 1 in.]) if using the U.S. Customary Units **or** (2x [sound-path length in mm – 25mm] x 0.08 if using the SI Units

The indication rating D is calculated as D = A - B - C

AWS information fields are found under the Statistics category.

To setup AWS information fields:

1. Tap the **Information Group** display.

Gain(ch)	12,0 dB	Gain(ref)	0,0 dB
%(G1)	-	/(G1)	_
%(G2)	-	/(G2)	-

2. Select **Define Custom**.

Define Custom

3. In the **Custom Group Editor**, tap Category to open the list.

Custo	m Group Editor	
-	-	
-	-	Delete
2		
Categor	y Settings	
Gain(cł	Settings	hannel
Gain(re	Cursors	hannel
Channe	Cylindrical Correction	
Law	Thickness	
Scan O	Statistics	
Index C	Drop Sizing	
Skew(p	Gates	nel
R angle	FFT	scal law/beam
	DAC	
	Accept	Cancel

4. Select the **Statistics Category**.

Custom Group	Editor	
	-	
-	-	Delete
-	-	
Category	Statistics	
Missed Pts Ratio	The ratio between the quantity of acquired points.	missed acquisition point and all the
Max Cons. Missed Pts	The biggest quantity of consecuti	ve missed acqusition points.
A	Discontinuity indication level in de	3
в	Reference indication level in dB	
c	Material attenuation factor in dB	
D	D rating	
	Accept	ancel

5. Select the A, B, C and D information fields.

Custom Group Editor				
A	В			
с	D			
-	-			

6. Position your reference and measurement cursors on each side of the indication signal.

UltraVision Tou	JCh						
Gain	1 4	S: 0,00 mm	Ref d	BA	-8,6 dB	В	12,0 dB
12,0 dB	2 4	] I: 0,00 mm	us TC V e	C	-1,0 dB	D	-19,6
Default.UVSetup							
Load Setup		A-Scan Default Channel:Azim 4,16	uthal R: 40,00 6,9	A-Scan 98			
Save Data	< 104,4 104,4	m	M				
	0mm	2 4	6	8 10	12 14	16	118 20

A will determine the amplitude level of the highest peak between both cursors.

**B** indicates the total gain applied on the current law (Hard Gain + Law Gain).

**C** information calculates the material attenuation using the AWS code formula.

 $\mathbf{D} = \mathbf{A} - \mathbf{B} - \mathbf{C}$ 

#### 3.2 Thickness Evaluation helper

Thickness Evaluation helper tool simplifies finding the points of minimum wall thickness on a C-Scan or on a contour box within a C-Scan.

1. From the Analysis menu, select the Thickness tab.



- Select a Position C-Scan view and click Find Min.
  The Data cursor intersection is positioned over the sample of minimum thickness.
- Draw a contour Position C-Scan view and click Find Min (C). The Data cursor intersection is positioned over the sample of minimum thickness within the contour.

#### 3.3 Noise Recording Gates

**Noise Recording Gates** is a new addition to our corrosion inspection tools. These gates can be activated in **Setup** and **Inspection** modes and can also be created offline.

**NR Crossing** adds noise recording capability to the Crossing mode gates. **NR Maximum** allows recording noise on when using **Maximum** crossing mode.

- 1. Open the **UT Settings** menu.
- 2. Enable Gate 1

	Ge	eneral Pulse Rece	r & Digiti	zer Gat	es TCG/I	DAC Alarn	ns
🮐 UT Settings	Gate	State	Start	Range	Threshold	Trigger	Sync
	Gate 1	On (True Depth)	1,24 mm	2,47 mm	25.0 %	Crossing	None

3. Tap Trigger.

Crossing					
Maximum					
NR Crossing					
NR Maximum					
Crossing (-6dB)					
nreshold	Trigger S				
25,0 %	Crossing	None			

#### 3.4 New information fields available for thickness evaluation

A new series of info-fields is available for the evaluation of C-Scan thickness information. New info-fields are available under the **Thickness** category

Info-field	Description
ThickAvg (C)	Average thickness in contour
ThickStdDev (C)	Standard Deviation thickness in contour
ThickMin	Minimum Thickness on complete data range
ThickMax	Maximum Thickness on complete data range
TMinSPos	Minimum Thickness position in Scan
TMinIPos	Minimum Thickness position in Index
TMaxSPos	Maximum Thickness position in Scan
TMaxIPos	Maximum Thickness position in Index

Some of the existing info-fields are now dynamic during acquisition mode:

- TMinSPos(C)
- TMinIPos(C)
- TMaxSPos(C)
- TMaxIPos(C)
- ThickMin
- ThickMax
- TMinSPos
- TMinIPos
- TMaxSPos
- TMaxIPos

## 4 File Management

#### 4.1 Batch Volumetric Merge

To set an Automatic BVM (Batch Volumetric Merge), you first need to create a BVM file.

For further information about creating a BVM file, refer to your UltraVision user manual, *Chapter 8.7 Setting Up Batch Volumetric Merges*, page 56.

When an Auto batch-merge is set, the software will automatically look in the folder of a file, at the opening, for an automatic volumetric merge file and execute it. It allows the user to save time and apply the same merge to all files contained in a same folder. As previously stated, the merge will only be executed at the opening of a data file.

To set an auto batch-merge,

1. From the Analysis menu, tap Batch Merge.



2. Load the VMX or BVM file created.

#### 4.2 Screen Capture Tool

The **Screen Capture Mode** allows to take screen shots of either the **Full-screen** or just the views (**Only data**).

The **Directory** field allows you to select to folder in which to save the screen shot. A USB drive can be chosen as the Directory.

1. Open the **Tools** menu.



2. Tap **Options**.

System		Language	English	
Amplitude		Unit System	Metric	
Report		Date	2017-06-29	
Notification		Time	14:21	
Inspection		Interface	Touch	
Screen Capture		Database	Import/Export	
		Default Setup	Weld	
		Wedge Definition Mode	Fixed Wedge Path	

3. Select Screen Capture.

Options					
System		Screen Capture Mode	Fullscreen		
Amplitude		Directory	Documents\Screens\		
Report		Use AutoNaming	No		
Notification		Base Name	ScreenCapture		
Inspection		Append Date	Yes		
Screen Capture		Append Time	No		
		Append Incremental	Yes		
Accent Cancel					

4. Tap Screen Capture Mode.



5. Set **Use AutoNaming** to **Yes**.

**Use AutoNaming** enables the automatic naming of the screen shots. The screen shots will be named according to the **Base Name** and the additional information (date, time or simply an incremental value).

#### Quality

All work is performed in accordance with ZETEC Quality standards program, which complies with 10CFR50 Appendix B, ISO 9001:2008 and ISO/IEC 17025:2005.



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