

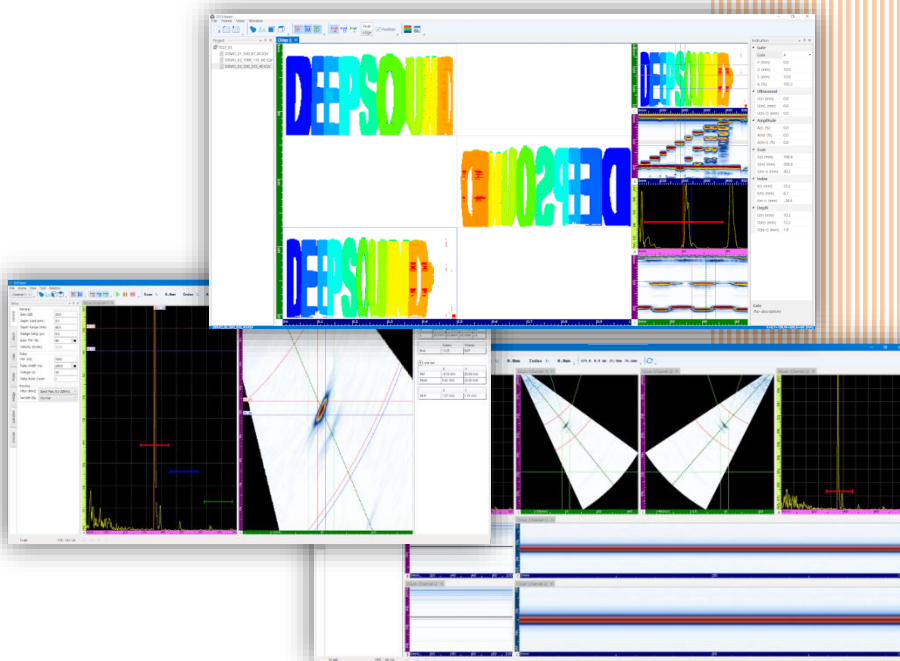


www.dspaut.com

User Manual

DSVision Software

Version 1.8.0



**DSVision - Easy, Precise, Fast
Phased Array UT Inspection Software**

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About this user manual

This user manual contains essential information on how to use the DSVision® software effectively. If this user manual is distributed with software that includes an end user agreement, this manual and the software described herein are provided under a license and may be used or copied only in accordance with the terms of that license. Except to the extent permitted by such license, no part of this manual may be reproduced, stored in a retrieval system, or transmitted in any form or by any means (electronic, mechanical, recording, etc.) without the prior written approval of DEEPSOUND. The content of this document is protected by copyright law even if it is not distributed with software that includes an end user license agreement.

User manual format

This manual is in the Portable Document Format (PDF) format that can be viewed on a portable computer or other electronic devices compatible with Acrobat Reader®.

Questions or comments about this user manual

The following conventions are used in this manual:

- Hypertext links are displayed in **bold**.
- All procedures are numbered, and sub-procedures are indicated by letters.
- Control names and menu items or titles are spelled as they are in the software and are displayed in **bold**.
- Symbols, menu bars, and images are displayed as they appear in the software.

Feel free to contact us with any questions or comments about this user manual.

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1. Introduction

1.1 PAUT Basics

PAUT (Phased Array Ultrasound Testing) is more advanced than UT equipment, and it can improve the accuracy of inspection in various fields such as aircraft and defense industries, ships and oil pipelines, gas bridges, industrial fields, power plants, and automobiles.

PAUT uses a function that makes a sensor, arranged with several piezoelectric elements, electrically control the pulse time and freely adjust the propagation direction and focal length of ultrasonic waves. When using UT during the inspection process, some areas could not be detected, so the disadvantage of having to inspect several times for each angle was compensated for, enabling more precise inspection.

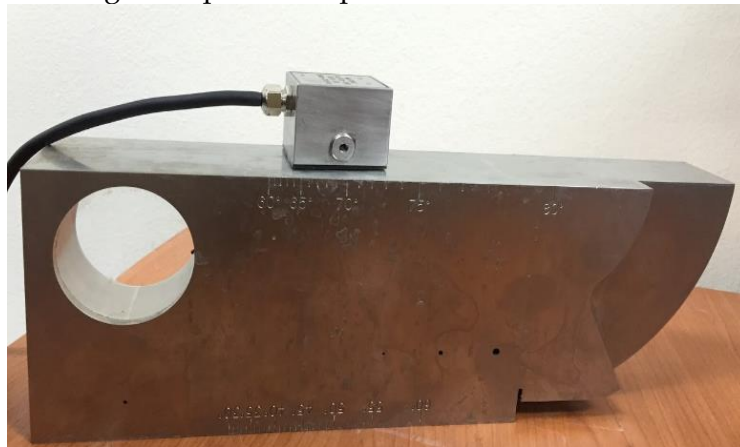


Figure: IIW Type II Calibration Specimen PAUT Probe

Transducer correction is accomplished by sending an individual Element (pulse) to the array transducer and introducing a time shift in the received signal (echo). All ultrasonic inspection techniques for defect detection and sizing can be applied using Phased Array (PA) transducers.

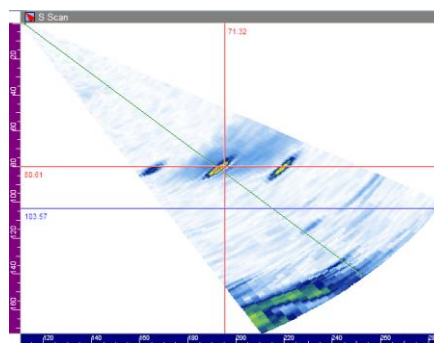


Figure: Example of detection using PAUT

1.2 Introduction of DSVision

DSVision is a data acquisition and analysis software for DEEPSOUND PAUT instruments. It supports display characteristics and collects real-time scan data.

1.2.1 Simple UI:

DSVison is designed to place all settings and UI on one screen to maximize user convenience, and when performing an actual inspection, the software can be used more easily with its streamlined UI design.

1.2.2 Various Scan Views Available:

You can analyze data more easily through various layouts such as A, B, and C.

1.2.3 Data Collection and Analysis Capabilities:

It has been developed to enable an immediate analysis of massive amounts of data collected through various functions in a single software.

1.2.4 Various Utilities Available:

Utilities such as Channel Setup and Auto Calibration are provided to help analyze the collected data.

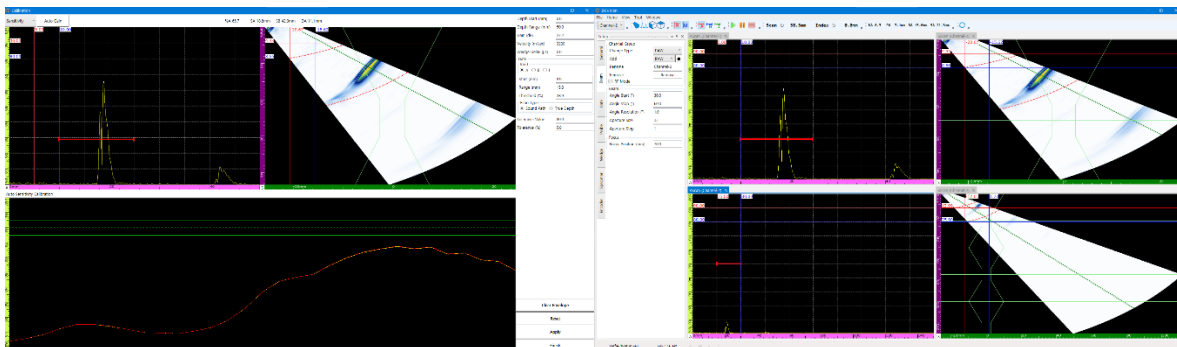


Figure: Channel Setup and Auto Calibration

You can inspect more objects by taking advantage of the various channel add configurations and easily accessible Auto Calibration.

1.3 System Requirements

DSVision supports all versions of Windows 10 on the current Windows platform. Before installing the software make sure your computer meets or exceeds the following requirements. For more information about your PC, navigate to the About tab under System Settings.

Recommended system configuration:

- **CPU Requirements:** Intel Dual-Core Processor or any processor at least or above 2.0 GHz
- **RAM Requirements:** Minimum 8GB recommended
- **Graphics Requirements:** 1920 x 1080
- **Storage Requirements:** Minimum 50 GB hard drive space
- **Ports:** USB Port, LAN Port
- **OS Support:** Any Windows 10 64-bit

1.4 Product Activation

DSVision can only be activated with active authorization. There are no specific steps for installing or inserting a license key.

Activation: Insert USB-LockKey -> Open DSVision



Figure: LockKeyUSB

Note: If activation fails, check whether the USB port is enabled or disabled, or contact the seller in other cases.

2. Getting Started

2.1 DSVISION: Start Window

After installing DSVision, click DSVision.exe to run it.

Open DSVision and check the connection status while proceeding with the License key and Hardware Check to complete the execution.

Please refer to the following instructions for remote connection. (2.2 Network Settings)

2.2 Network Settings

DSVision has a network module that can connect DEEPSOUND devices and a host computer through a network. The following functions are available once the connection is activated through a successful network connection.

■ Settings

- Desktop PC Network Information
- Network Device Information for DSVision

Starting Network Mode:

DSVision checks the IP address of the device to connect to, in real-time.

How To Use Network Mode.

1. Check the IP address of the device you wish to connect to

1. How to check the IP address

Open the Run App [Windows key + R] > Type in "cmd" > Type "ipconfig" > Check the IPv4 address.

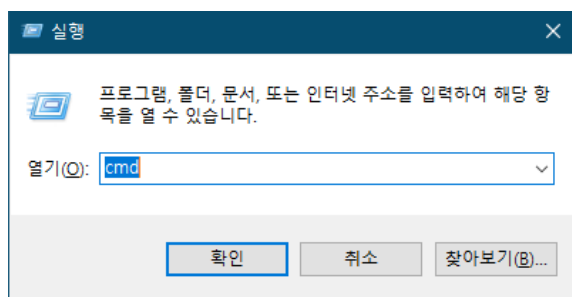


Figure: Type "cmd" in Run

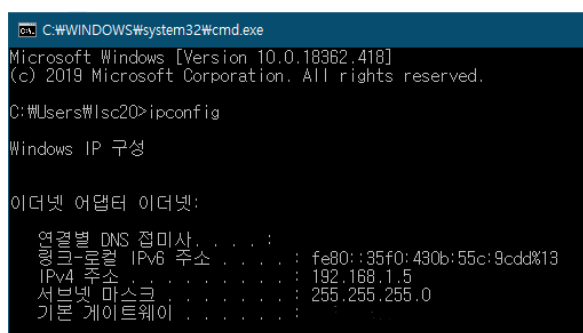


Figure: Check IPv4 address after Typing "ipconfig"

2. Enter the IP address of the device

Go to the installed DSVision folder, then go to Bin, open RES, and open SV.json.

In SV.json, there is a field for IP addresses. Enter the IP address checked from above (IPv4), save and close the file.

2. IP Address Input Location

DEEPSOUND > DSVision > Bin > RES

이름	수정한 날짜	유형	크기
Debug	2021-08-24 오전 10:12	파일 폴더	
Default	2021-08-23 오전 8:49	파일 폴더	
FPGA	2021-08-23 오전 8:49	파일 폴더	
FW	2021-08-23 오전 8:49	파일 폴더	
Json	2021-08-23 오전 8:49	파일 폴더	
Log	2021-08-23 오전 8:49	파일 폴더	
User	2021-08-23 오전 8:49	파일 폴더	
DSInsEnv.json	2021-09-15 오전 9:07	JSON 파일	1KB
linear.frag	2019-11-09 오후 2:25	FRAG 파일	1KB
linear.vert	2019-11-09 오후 2:25	VERT 파일	1KB
S2.json	2021-05-12 오후 2:06	JSON 파일	1KB
SV.json	2021-09-10 오전 9:21	JSON 파일	1KB

Figure: SV.json Directory

```
{
  "S2Addresses": [
    {"IP": "192.168.0.50", "Port":8800 }
  ],
  "ReceivePort": 9900
}
```

Figure: IP Address Field

3. Run S2Net.exe on the device

Open S2Net.exe on the device you wish to connect to.

Once you run S2Net, an icon will appear on the Windows taskbar. It will be red at first, and when it becomes ready to connect, it will turn green.



S2Net Preparation State



S2Net Ready to Connect State

Figure: S2Net State

4. Run DSVision when S2Net becomes ready to connect

Once the S2Net icon turns green, run DSVision.

DSVision checks the listed IP address and generates an image while connecting to the device.

3. Inspection Mode

3.1 User Interface (UI)

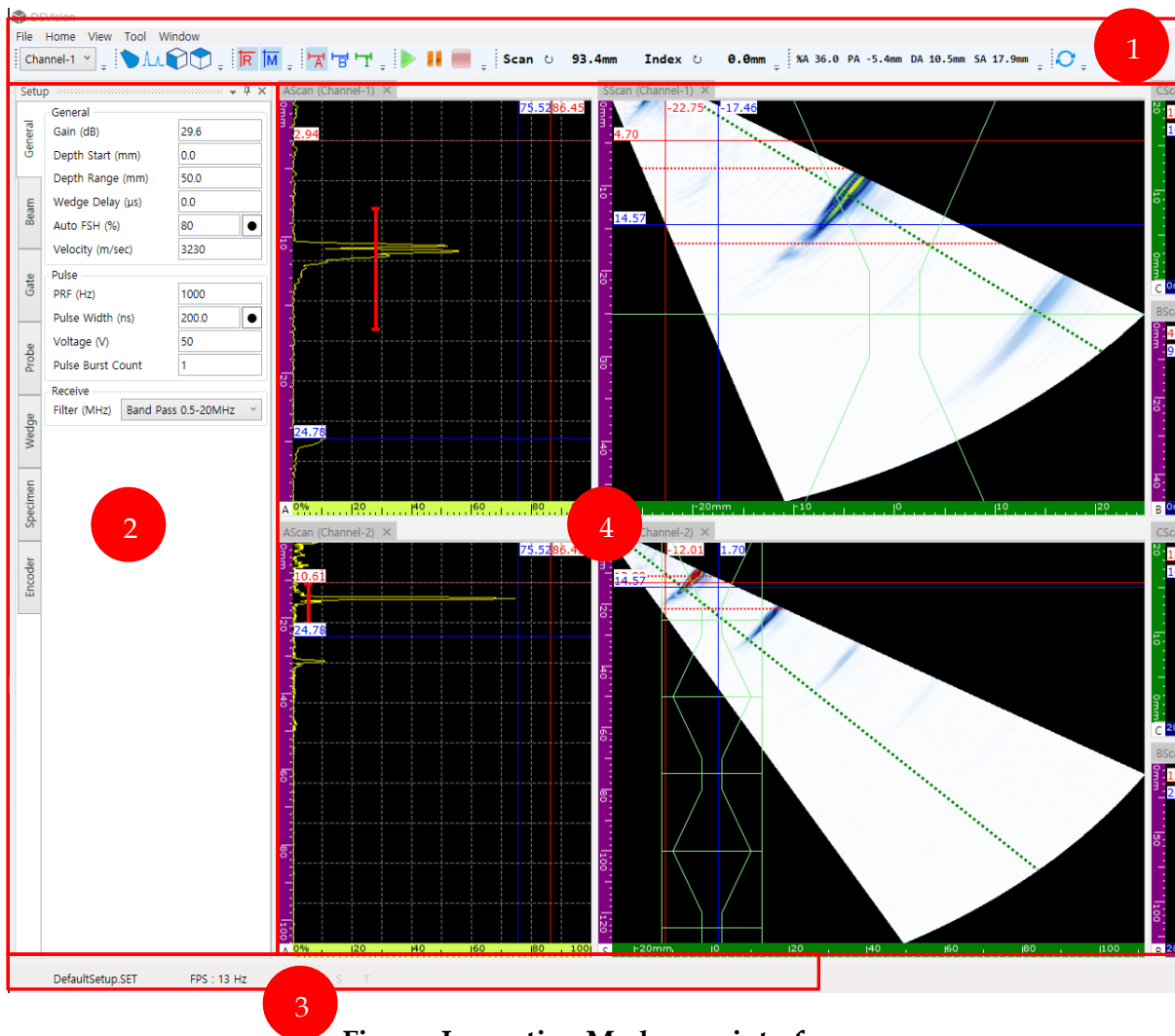


Figure: Inspection Mode user interface

1. **Menu, Main/Mini Toolbar(TOP) Page:** The main toolbar bar can be used to indicate the status of connected equipment, start/stop inspection, and display the encoder position. It is divided into **Main Menu, Main toolbar, and Mini toolbar.**

2. **Setup(Left) Page:** You can set parameters for functions such as **Probe, Wedge, and Mechanical.**

3. **State(Bottom) Page:** Displays **Load Name, FPS, and Calibration Check Box.** Load Name is the name of the currently loaded file, FPS displays the framerate, and the Calibration Check box indicates that the calibration is complete.

4. **Scan view(Right) Page:** You can add or remove Scan views and reposition them.

3.2 MAIN TOOLBAR

Compared to the **Analyze** mode, the Mini toolbar has fewer options. Keyboard shortcuts are provided. (Refer to Page 30)

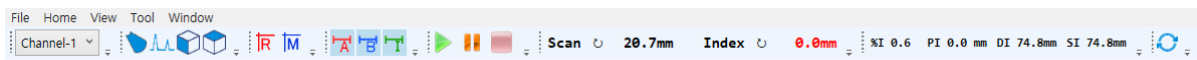


Figure: Inspection mode Main Menu, Basic toolbar set/Mini toolbar set

Main toolbar Channel Group Description:

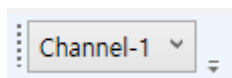


Figure: Channel bar

Channel bar: Used to view and/or select added Channels

Use: The Channel bar is automatically updated when you select Add Channel Group under the Beam tab.

Main toolbar Scan Add Description:



Figure: S, A, B, C Scan

From the default layout above, the user can change the layout to their desired configuration.

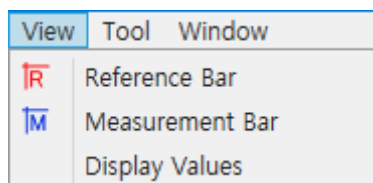
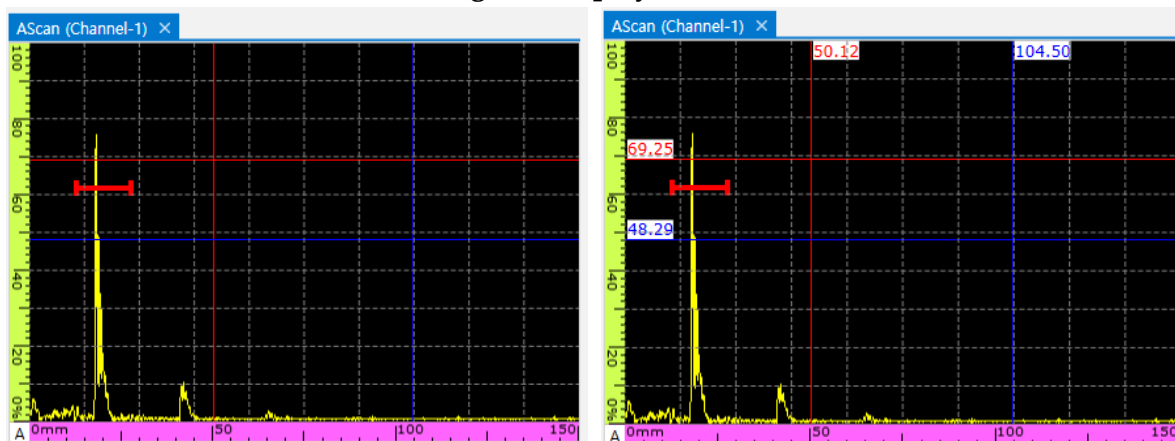
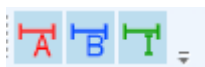
Use: When the desired Scan window is selected, it is automatically added to the Layout screen, and the position can be set by moving the mouse.

Main toolbar R/M Add Description:**Figure: R/M Cursor**

A cursor that sets a reference for checking defects and sizes

Use: Click on the icon to show it on the screen and click again to hide it.

Click on "Display Values" in the dropdown list under the "View" tab to show the R/M cursor values.

**Figure: Display Values****Figure: Display Values Enabled (Right)****Gate Add Description:****Figure: A/B/I Gate**

Add and remove tools for measuring the distance and height of signals

Use: Click on the icon to show it on the screen and click again to hide it.

Inspect Configuration Description:



Figure: A / B / I Gate

These controls are used when collecting data using Inspect mode. They consist of Start / Pause / Stop

Use:

- Click **Start** to start collecting data and display the images.
- **Pause** can freeze data collection at any point. It is useful for excluding unwanted areas when moving an encoder through an inspection area without having to stop the entire process.
- Click **Stop** to save and halt data collection.

Encoder Location List Description:

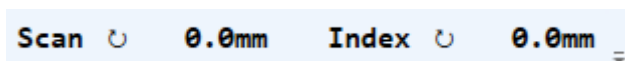



Figure: Encoder Location

A list to see the current position of the encoder and the position value when moving.

Use: The position value is updated when the connected encoder is moved, and if you want to set the position value back to 0mm, click the UI button  next to the name of each position.

Gate Information List Description:

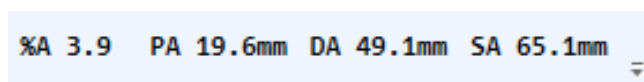
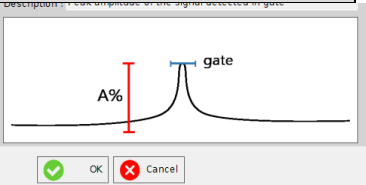
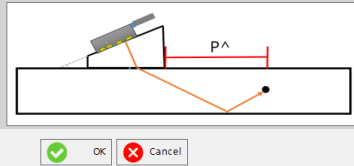
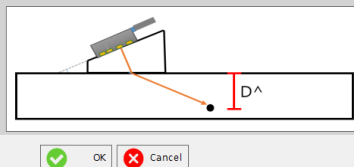
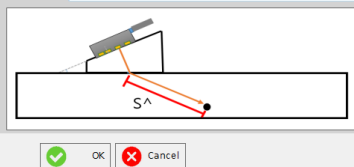


Figure: Gate Information

This list displays the information of the signal across gates A/B/I, and it is updated based on the gate selected in Kind from the gate list in the Setup window.

List	Description (Figure)
A%	Amplitude of A, B, I (%) 

P	The projection distance of echo from gates A, B, I	
D	Reflector depth of gates A, B, I	
S	Echo sound path of gates A, B, I	

The settings automatically change to PB / PI when selecting Kind in each gate list.

3.3 Setup Window Toolbar

Description of composition and function of each list

The image shows a software window titled "Setup" with a toolbar and a list of configuration options. The options are organized into sections: General, Beam, Gate, Probe, Wedge, Specimen, and Encoder. The General section includes Gain (dB), Depth Start (mm), and Depth Range (mm). The Beam section includes Wedge Delay (μs), Auto FSH (%), and Velocity (m/sec). The Gate section includes Pulse PRF (Hz) and Pulse Width (ns). The Probe section includes Voltage (V) and Pulse Burst Count. The Wedge section includes Filter (MHz). The Specimen and Encoder sections are currently empty.

Section	Parameter	Value
General	Gain (dB)	40.0
	Depth Start (mm)	0.0
	Depth Range (mm)	150.0
Beam	Wedge Delay (μs)	0.0
	Auto FSH (%)	80
	Velocity (m/sec)	3230
Gate	Pulse PRF (Hz)	1000
	Pulse Width (ns)	200.0
Probe	Voltage (V)	150
	Pulse Burst Count	1
Wedge	Filter (MHz)	Band Pass 0.5-20MHz
Specimen		
Encoder		

Figure: General List

1. General List

Gain(dB): Configures the gain of the signal

Depth Start(mm): Starting position of data collection

Depth Range(mm): The full range of data to be collected


Wedge Delay(us): The time delay of the ultrasound between the wedge and the transducer

Auto FSH(%): Automatically sets amplitude value

Velocity(m/sec): Velocity of ultrasound in the specimen

- **Pulse**

PRF(Hz): Represents the number of times the initial pulse is triggered. It is at 1000Hz, acquiring a pulse once every 0.001(1/1000) seconds.

Pulse Width(ns): It is used to select the pulse width value, and it is set either automatically or manually by the set value of the transducer frequency (Automatically sets to the probe frequency value when this icon  is clicked)

Voltage(V): Sets the power supply voltage of the pulse

Pulse Burst Count: Sets the pulse repetition period (**increases signal strength**)

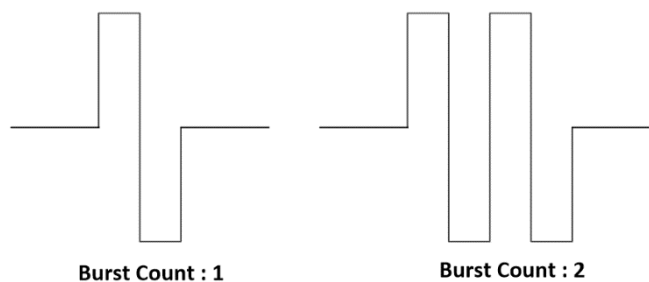


Figure: Burst count example (1 and 2)

- **Receive**

Filter(MHz): Select filter for received data

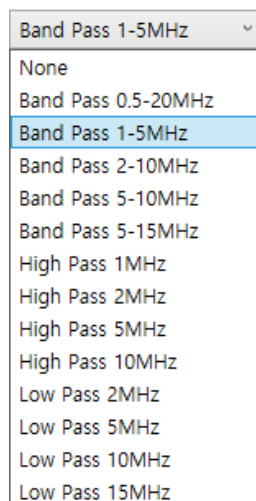


Figure: Filter List

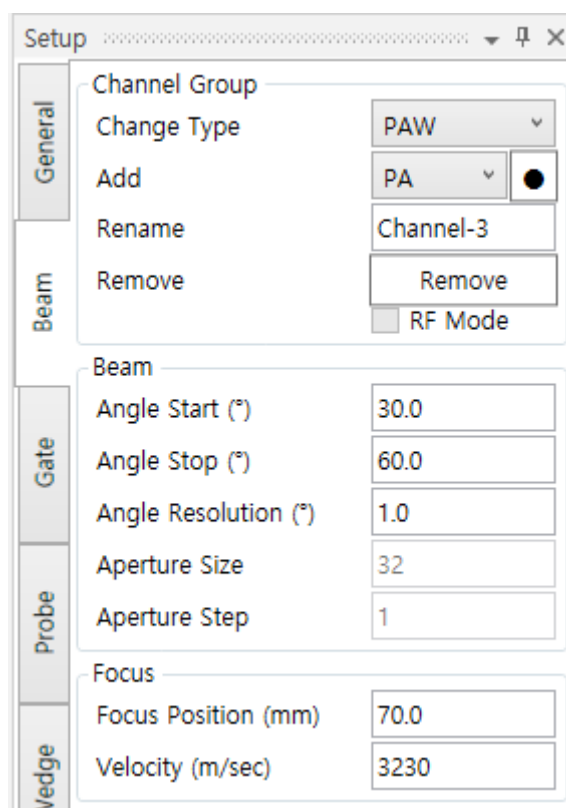


Figure: Beam List

2. Beam List

- **Channel Group**


Change Type: Select different beam types

PA is for sectorial scans without a wedge

PAW is for sectorial scans with a wedge

LA is for linear scans

TOFD / Conventional is for Single UT and TOFD scans

Add: Select the Channel Type you wish to add and click the  icon to apply changes

Rename: Rename the selected Channel

Remove: Delete the selected Channel

- **Beam**

The Angle and Aperture settings under Beam are either enabled or disabled depending on the selected Channel Type.

Angle Start(°): Sets the Start Angle range

Angle Stop(°): Sets the Stop Angle range

Angle Resolution(°): Sets the refraction angle resolution

Example: When Resolution = 1, the range $-30^{\circ}\sim 30^{\circ}$ is checked by 1° per vector. When Resolution = 0.5, the range $-30^{\circ}\sim 30^{\circ}$ is checked by 0.5° per vector.

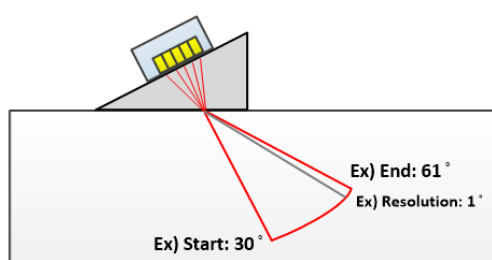


Figure: Refraction angle, resolution (Example: Start 30° /End 61° , Resolution = 1)

Aperture Size: This is automatically enabled when LA(Linear) mode is selected, and the desired number of elements is set.

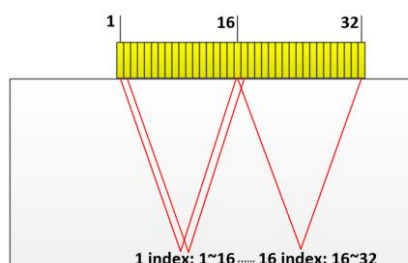


Figure: Aperture size (1~16, 16~32)

Aperture Step: This is automatically enabled when LA(Linear) mode is selected, and the desired element grouping is set.

- **Focus**

Focus Position (mm): Sets the focusing position of the beam

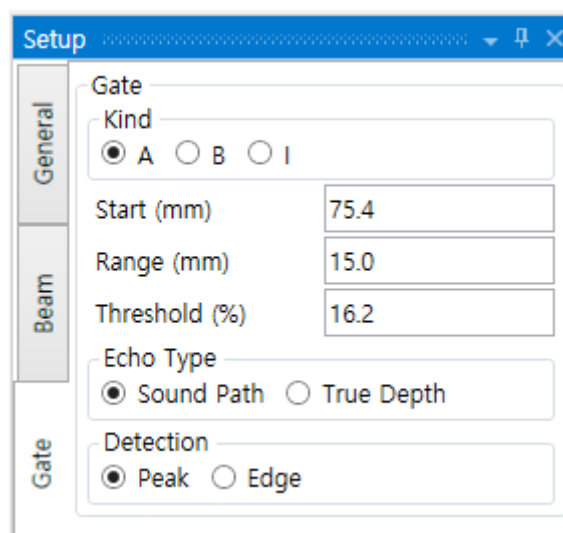


Figure: Gate List

3. Gate List

- Gate

Kind: List of gates to choose from (A, B, I)

Start(mm): Sets the starting point of the gate

Range(mm): Sets the entire range of the gate

Threshold(%): Sets the gate height threshold

Echo type

Sets the type of measurement range for the gate

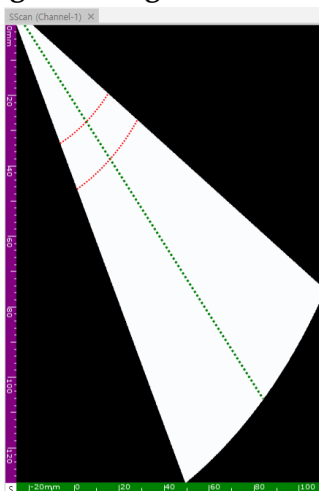


Figure: Shape of the gate after setting the sound path

Sound Path: Expressed on S-scan as radius type.

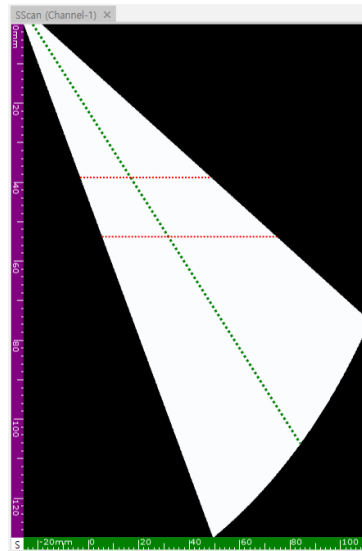


Figure: Shape of Gate after setting True Depth

True Depth: Expressed on S-scan as Flat type

- **Detection**

Used when changing the reference of the signal measured through the gate.

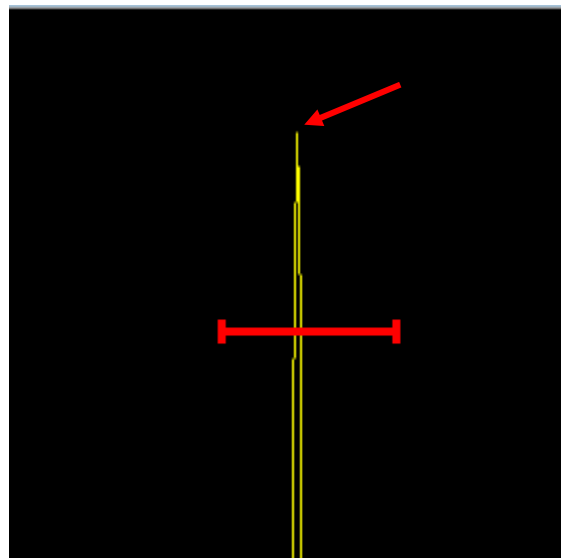


Figure: The signal value being read when Peak is applied

Peak: Returns information on the highest value of the signal across the gate.

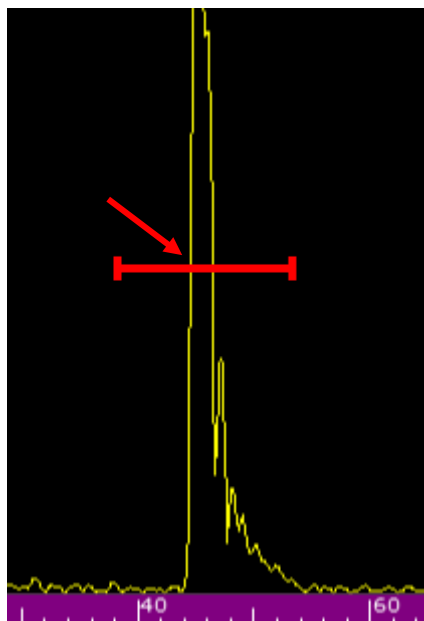


Figure: Edge The signal value being read when Edge is applied

Edge: Returns information from the signal value that first intersects the gate.

Section	Parameter	Value
General	Probe Name	
	Probe Frequency (MHz)	5.00
	Element Pitch (mm)	0.60
Beam	Number of Elements	64
	First Element	1
Gate	TX Element Start/Stop	1 64
	RX Element Start/Stop	1 64
Probe	Offset	
	Scan Offset (mm)	0.0
	Index Offset (mm)	0.0
	Skew Angle (°)	90

Figure: Probe List

4. Probe List

- Probe

Probe Name: Sets probe name

Probe Frequency(MHz): Sets the probe's frequency range (Linked to Pulse Width settings under General)

Element Pitch(mm): Sets the spacing between elements in the probe

Number Of Elements: Sets the number of elements to be activated

First Element: Sets the element's starting position value

TX Element Start / Stop: Sets the position values of the starting and stopping point of the element

RX Element Start / Stop: Updates automatically depending on the TX settings

- Offset

Scan Offset(mm): Setting the reference position of the probe

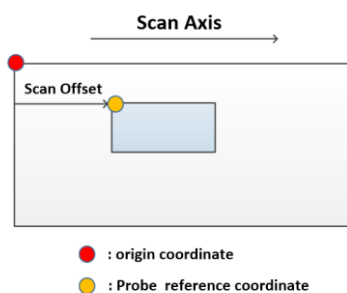


Figure: Scan offset

Index Offset(mm): Setting the reference position of the probe

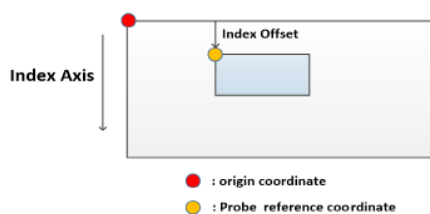


Figure: Index Offset

Skew Angle(°): Setting the directional angle of the probe

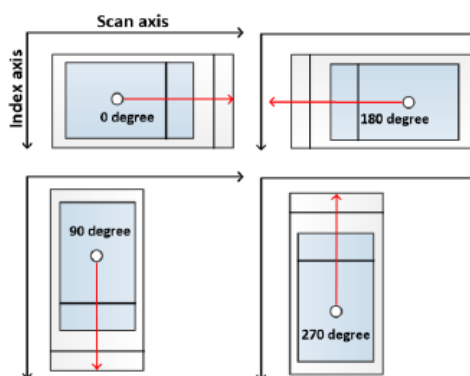


Figure: Skew Angle

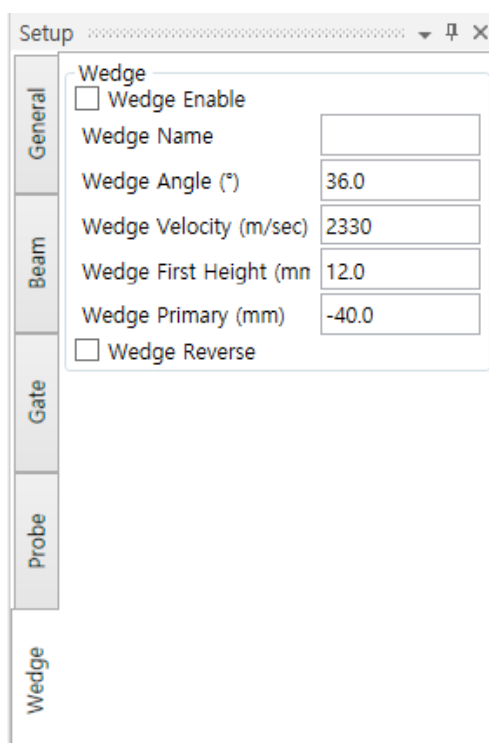


Figure: Wedge List

5. Wedge List

- Wedge

Wedge Enable: Indicates whether a wedge is being used for inspection

#If Change Type is set as PAW, Wedge Enable is automatically selected.

Wedge Name: Sets the wedge name

Wedge Angle: Sets the wedge angle information

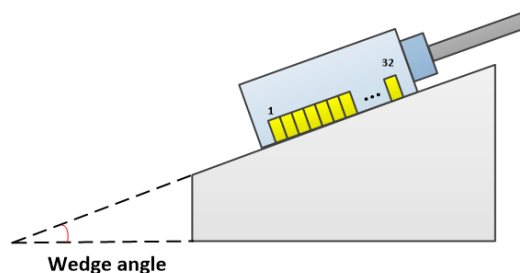


Figure: Wedge angle

Wedge Velocity: Sets the ultrasonic velocity in the wedge

Wedge First Height: Sets the height of the probe's first element with the wedge attached

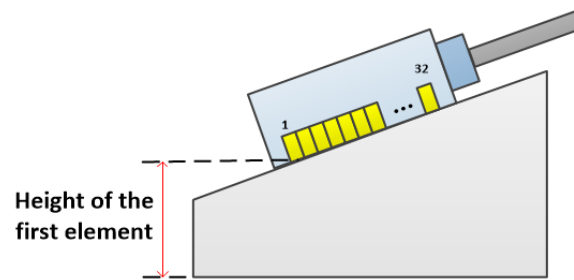


Figure: Wedge Height of the first element

Wedge Primary: Sets the distance between the front part of the wedge to the first element of the probe

Wedge Reverse: Set when the first element of the probe is flipped on the wedge

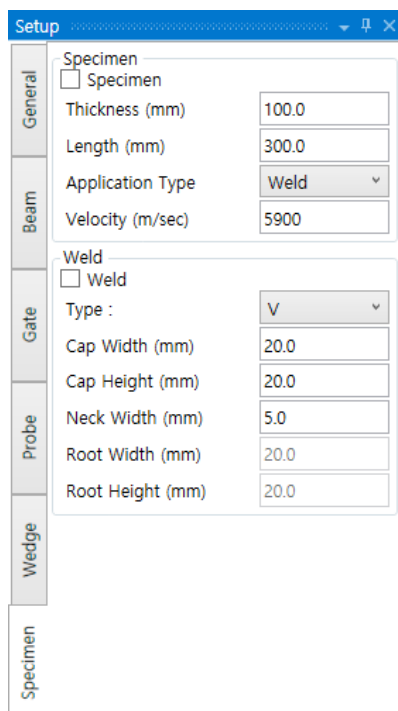


Figure: Specimen List

6. Specimen & Weld List

- Specimen

Specimen Enable: Select to display the applied parameter values onto the scan screen

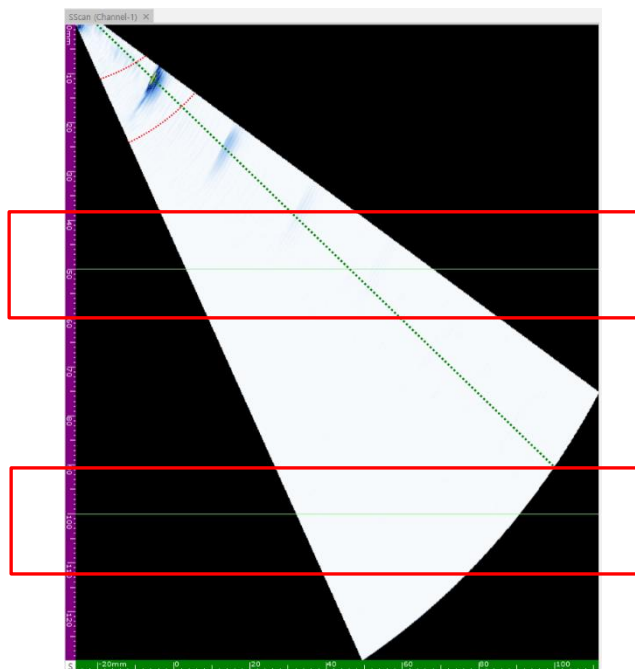


Figure: Indicator lines when specimen thickness is set to 50mm

Thickness(mm): Sets the thickness of the specimen

Length(mm): Sets the length of the specimen

Application Type: The list consists of Weld and Corrosion. Depending on which one is selected, the C-scan colormap changes.

- **Weld**

Weld Enable: This function displays virtual weld shapes onto the S-scan screen, and it is applied by selecting the box next to “Weld”.

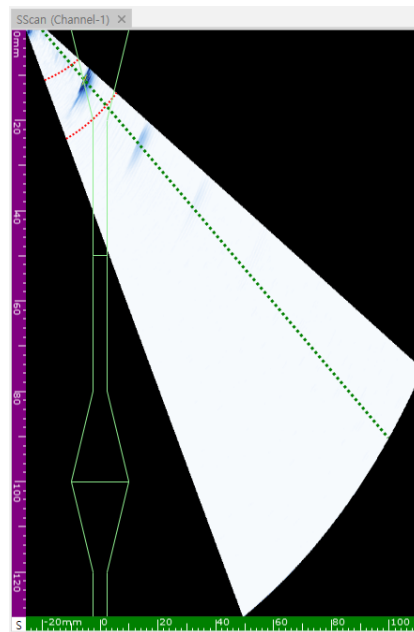


Figure: Weld enabled

Type: The weld type selections are V / Reverse V / Double V. Depending on the selection, additional parameters are activated/deactivated.

Weld - V Additional Parameters: Cap Width / Cap Height / Neck Width

Weld - Reverse V Additional Parameters: Neck Width / Root Width / Root Height

Weld - Double V Additional Parameters: Cap Width / Cap Height / Root Width / Root Height

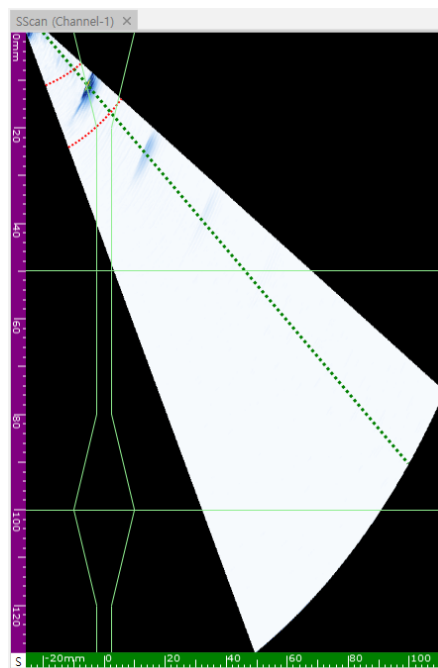


Figure: Weld / Specimen Enabled

The image shows a 'Setup' dialog box with a vertical sidebar on the left containing tabs for 'General', 'Beam', 'Gate', 'Probe', 'Wedge', 'Specimen', and 'Encoder'. The 'Scan' section is active, showing input fields for Position (mm) at 0.0, Start (mm) at 0.0, Stop (mm) at 100.0, Step (mm) at 1.0, and Resolution (pulses/mm) at 100.0. There is an unchecked 'Reverse' checkbox. The 'Index' section shows Position (mm) at 0.0, Start (mm) at 0.0, Stop (mm) at 20.0, Step (mm) at 5.0, and Resolution (pulses/mm) at 200.0, also with an unchecked 'Reverse' checkbox. The 'Encoder' section includes a 'B/C Scan' button labeled 'Clear', an unchecked 'Axis Reverse' checkbox, and a 'Scanner Type' section with radio buttons for 'OneLine' (selected), 'Raster', and 'Time'. Below this is an unchecked 'One Way (Raster only)' checkbox.

Figure: Encoder List

7. Encoder List

- **Scan**

Position(mm): Set when redefining the Scan position value

Start(mm): Sets the starting position value of the Scan

Stop(mm): Sets the stopping position value of the Scan

Step(mm): Sets the interval value of the scan movement

Resolution(Pulse/mm): Sets the pulse value of the encoder when it completes 1 full revolution.

Reverse: Sets scan direction (move in reverse after enabling)

- **Index**

Position(mm): Set to redefine the index position value

Start(mm): Sets the starting position value of the index

Stop(mm): Sets the stopping position value of the index

Step(mm): Sets the interval value of the index movement

Resolution(Pulse/mm): Sets the pulse value of the encoder when it completes 1 full revolution.

Reverse: Sets scan direction (move in reverse after enabling)

- **Encoder**

B/C Scan Clear: Removes all collected images from the scan screen

Axis Reverse: Use to change the position of both axes of Scan / Index

Scanner Type

OneLine: Use when only collecting data along one axis

Raster: Use when collecting data along two axes

Time: Use to update the image without interruption at the speed that reflects the FPS (images acquired per second) value in the set PRF

One Way(Raster Only): When acquiring an image with Raster, use it when acquiring an image in only one direction.

APPENDIX A: Keyboard and Toolbar Description

Keyboard Shortcuts

The following table shows DSVision keyboard shortcuts and mouse operations.

Shortcuts	Functions
Ctrl+F4	Quit
Shift+hold LMB	Zoom
Double-click LMB	Reference Cursor
Shift+Double-click LMB	Measurement Cursor
Zoom function + mouse wheel scroll	Zoom Control

Figure: Keyboard Shortcuts and Mouse Operations

Toolbar Description

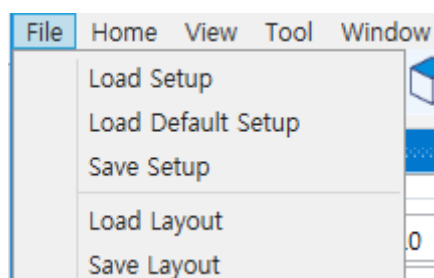


Figure: Toolbar

You can use various functions with the toolbar.

It consists of File / Home / View / Tool / Window.

File: Contains Load Setup / Load Default Setup / Save Setup / Load Layout / Save Layout

Load Setup: Use to load a saved setup

Load Default Setup: Use to load the default setup

Save Setup: Use to save current setup values

Load Layout: Use to load saved scan screen layout

Save Layout: Use to save current screen layout configuration

APPENDIX B: Calibration Reference

Calibration Summary

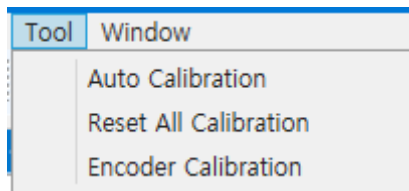


Figure: Calibration Settings Location

Go to the Main Toolbar, click Tool, and select Auto Calibration to view the calibration screen.

Auto Calibration

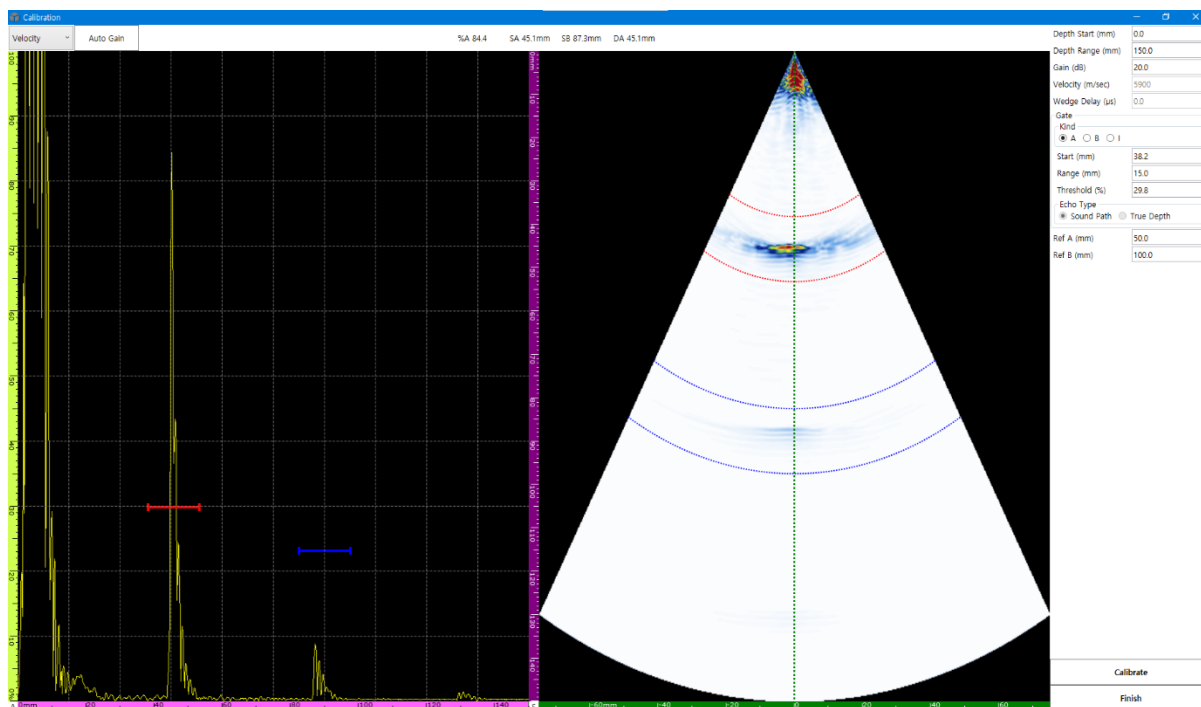


Figure: Velocity Calibration Screen

Velocity: Calibrates the ultrasound velocity for a certain material

- Calibrates using the difference between Ref A(mm) / Ref B(mm)

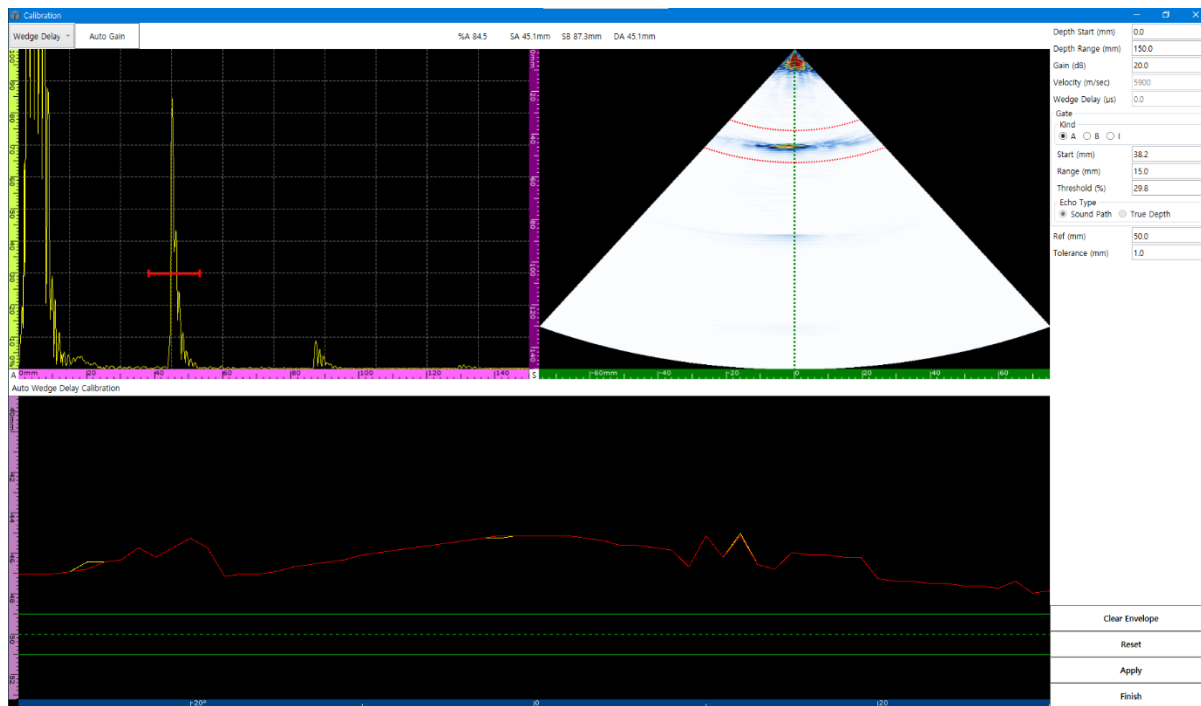


Figure: Wedge Delay Calibration Screen

Wedge Delay: After adjusting the Ref(mm) position value, input the desired Tolerance(mm) spacing to match the reference position with the green line and click Apply

Clear Envelope: Use if the amplitude curve is incorrect during calibration

Reset: Use to reset to initial values if the calibration was performed incorrectly

Apply: Use when the red line falls within the bounds of the green lines

Finish: Closes the calibration screen

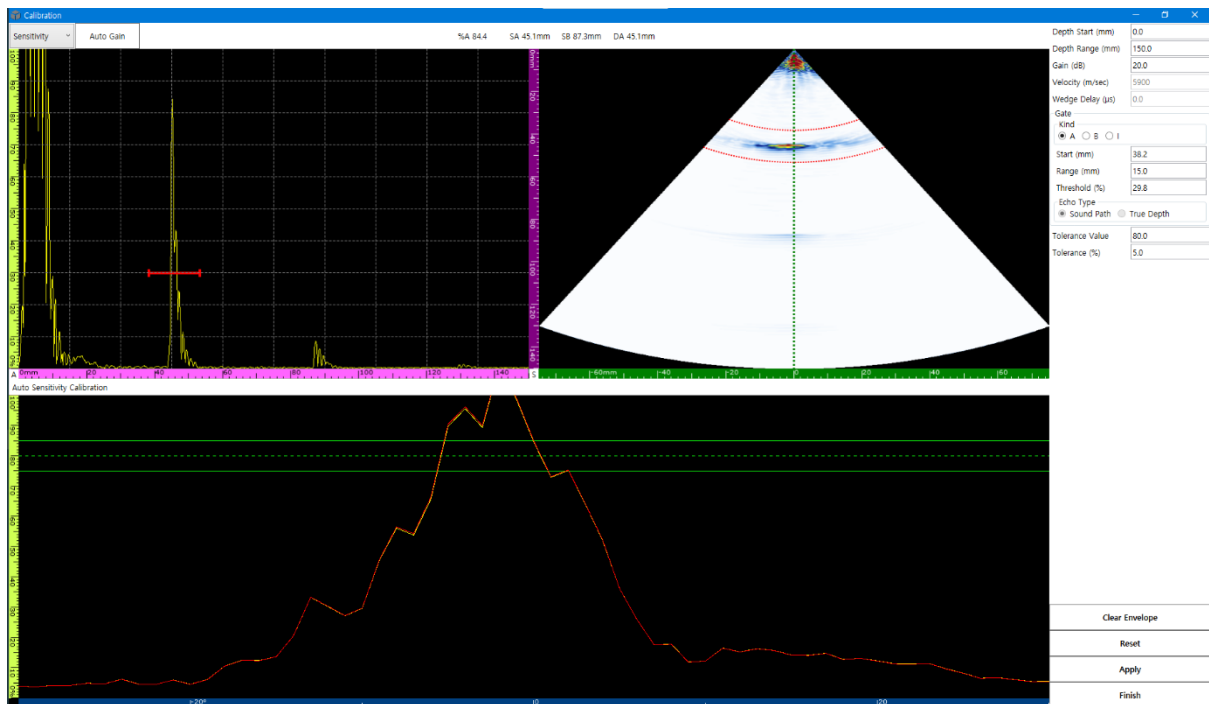


Figure: Sensitivity Calibration Screen

Sensitivity Calibration: Sets the gain value for all beam signals with reference to the reflector

Tolerance Value: Sets the amplitude reference value for all beams

Tolerance: Sets the tolerance range for calibration values

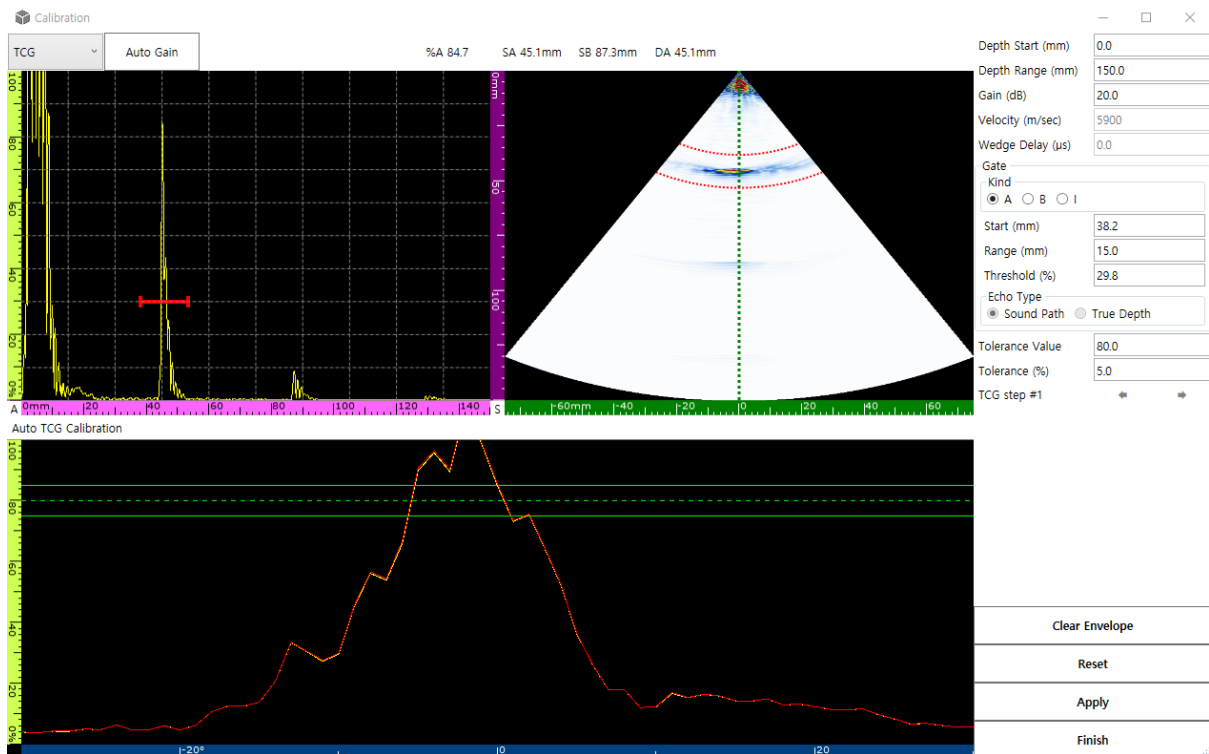


Figure: TCG Calibration Screen

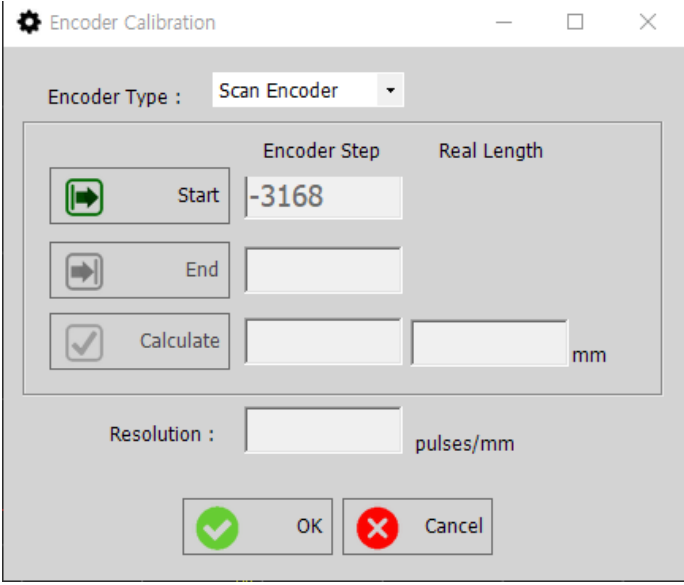
TCG: Calibrates the gain value for amplitude by depth for all beams

Tolerance Value: Sets the reference value for the amplitude of all beams

Tolerance: Sets the tolerance range for calibration values

TCG Step #1: Specifies the peak point for each signal by the depth

Encoder Calibration



The image shows a software dialog box titled "Encoder Calibration". At the top, there is a gear icon and the title "Encoder Calibration". Below the title, there is a dropdown menu labeled "Encoder Type" with "Scan Encoder" selected. The main area of the dialog is divided into two columns: "Encoder Step" and "Real Length". Under "Encoder Step", there are three rows: "Start" with a green right-pointing arrow icon and a text box containing "-3168"; "End" with a grey right-pointing arrow icon and an empty text box; and "Calculate" with a grey checkmark icon and an empty text box. Under "Real Length", there is an empty text box followed by "mm". Below these fields, there is a "Resolution" field with an empty text box and the unit "pulses/mm". At the bottom, there are two buttons: "OK" with a green checkmark icon and "Cancel" with a red X icon.

Figure: Encoder Calibration Screen

Click on "Encoder Calibration" under "Tool" to open the Encoder Calibration window.

Encoder Type: Select either Scan Encoder or Index Encoder

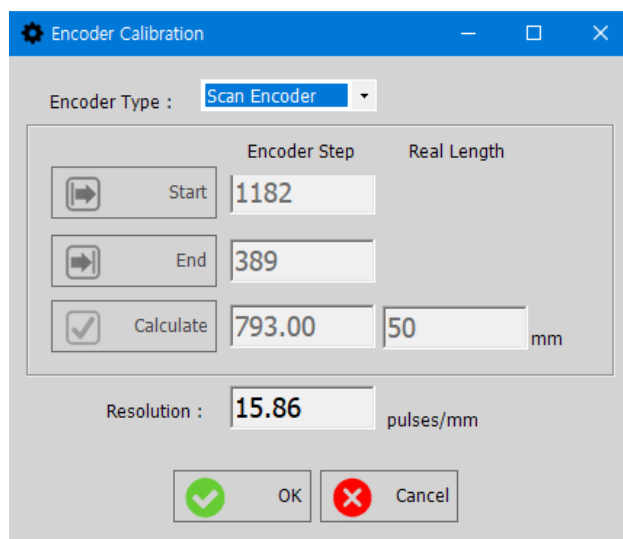
Start: Displays the starting position value of the encoder

End: Displays the end position value of the encoder after moving

Calculate: Displays the difference between the Start and End values

How to Perform Encoder Calibration

1. Check the starting position value of the encoder and click Start
2. Move the encoder to its end position and click End
3. The difference between the Start and End values will show up next to "Calculate". Enter the actual distance traveled in the space next to it, and click "Calculate"
4. Resolution is calculated automatically. Click OK to apply the calibration to the selected Encoder Type



The image shows a software dialog box titled "Encoder Calibration". At the top, there is a gear icon and the title "Encoder Calibration". Below the title, there is a dropdown menu for "Encoder Type" set to "Scan Encoder". The main area contains a table with three rows and two columns: "Encoder Step" and "Real Length". The first row has a "Start" button with a right-pointing arrow icon and a text box containing "1182". The second row has an "End" button with a right-pointing arrow icon and a text box containing "389". The third row has a "Calculate" button with a checkmark icon, a text box containing "793.00", and a text box containing "50" followed by "mm". Below the table, there is a "Resolution" label, a text box containing "15.86", and the unit "pulses/mm". At the bottom, there are two buttons: "OK" with a green checkmark icon and "Cancel" with a red X icon.

	Encoder Step	Real Length
Start	1182	
End	389	
Calculate	793.00	50 mm

Resolution : 15.86 pulses/mm

OK Cancel

Figure: Encoder Calibration Screen

Hardware Manual

➤ Power adapter

All DEEPSOUND devices use a DC 12V, 5A power adapter.

1. Rated Power Input: 220V, 60Hz, 3.0A

2. Rated Voltage Output: DC 12V / 5A

Housing

Pin	Signal	Description
1	DC12V	+12V Power input
2	GND	Ground
Inner Diameter		2.1mm ~ 2.5mm
Outer Diameter		5.5mm

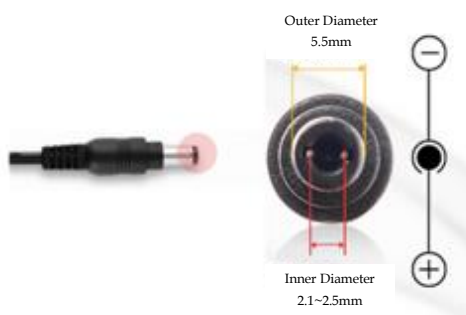
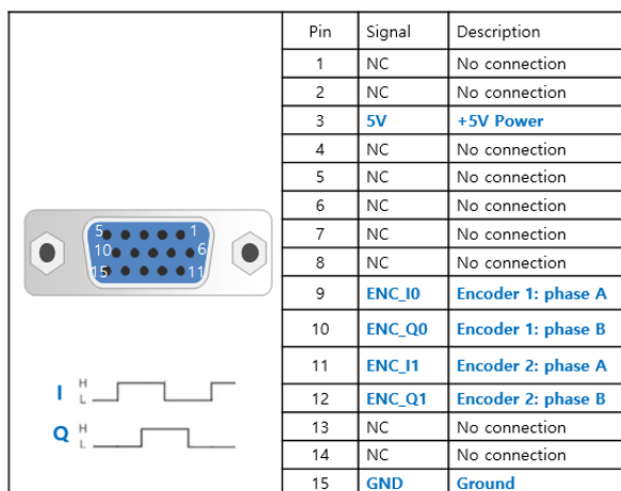


Figure: Housing Size and Adapter Dimensions

➤ Encoder Connector

All DEEPSOUND devices support 2-axis encoders and can be expanded to 4-axis encoders if required. The pin map is shown in the figure below.



Male

	Product Name	Vendor
	DS1035-15M	CONNFLY

- D-SUB Solder Type / 3Row 15Pin

Figure: Encoder Pin Map and its Socket

DSVision Software User Manual

Important Notice:

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DEEPSOUND performs inspection and other quality control techniques necessary to support this manual. If you do not find a suitable solution to the contents of this manual, please contact DEEPSOUND at the address below by mail or e-mail.

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E-Mail: admin@seongsanlab.com

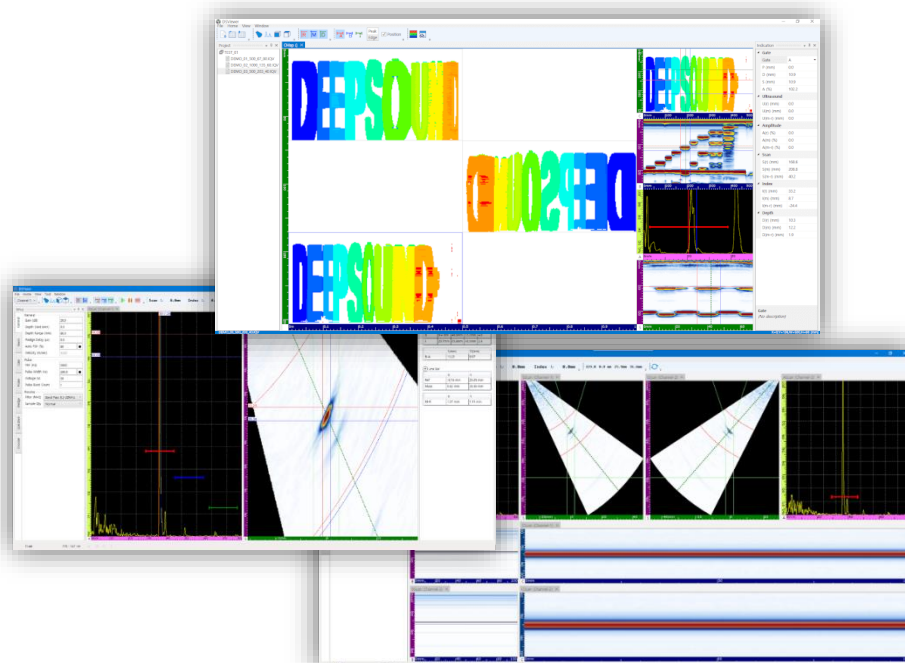
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DSVision Software

USER MANUAL



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