



# TELEDYNE BLUEVIEW T2250-360 TUNNEL PROFILER IN NAVISCAN NOTES

Last update: 22/10/2021 Version: 9.5



# 1 Guide

Notes on using the BlueView 2250-360 degree profiler Driver and how to access all the beams.

### 1.1 Hardware

BlueView T2250-360 http://www.teledynemarine.com/BlueViewT2250-360\_Tunnel\_Profiler

This profiler has three sonars with two IP addresses (192.168.1.45 and 192.168.1.46). Both are for the sonar heads, it has two IPs but three sonar arrays.

## 1.2 Software

Software version: NaviScan\_9.5-74423-Internal\_trunk

The driver is BV2250-360 BVT RangeProfile.

Echosounder			—
<search filter=""></search>			71/71
COMPANY	INSTRUMENT	DATASTRING	HELP
BlueView	BlueView	Reson7k packet type 7006 7004	TCP and UDP, port 7000 for automatic sub
BlueView	BlueViewDual	Reson7k packet type 7006 7004	TCP and UDP, port 7000 for automatic sub
BlueView	BV2250-360	BVTRangeProfile	Using BlueView SDK, dll network connecte
CathX	CathX PCD	PCD v.7 FIELDS range bearing tilt rgb DATA binary	-
CATHX	CATHX		
<			>
			Save as CSV OK Cance

Figure 1 BlueView T2250-360 degree profile driver



🌠 NaviScan.BIN - NaviScan Config		- 0	×
File Equipment View Options	Tools Help		
	1: C 0	· 大	
<ul> <li>NaviScan.bin</li> <li>System Parameters</li> <li>Geodesy</li> <li>Gyro</li> <li>Motion</li> <li>Bathy</li> <li>SONNAV Motion</li> <li>Bathy</li> <li>SONNAV Depth</li> <li>Navigation</li> <li>Echosounder</li> <li>I BV2250-360</li> </ul>	Sensor & help Name Disabled Port setup Latency Mount offset X Mount offset Y Mount offset Z Roll mount Pitch mount Heading mount Secondary IP Head select Time stamp Combine scans Invert angles Scan Filters Quality threshold Ind range start Ind angle start Ind angle end Section exclude ± Beam exclude ±	BV2250-360 BV2250-360 □ UDP 0 192.168.1.45 0 ms 0 m 0 m 0 m 0 m 0 m 0 0 0 ° 0 ° 0 ° 192.168.1.46 All heads Sensor timestamp □ V 0 0 0 0 0 0 0 0 0 0 0 0 0	
	Mount roll angle rela	tive to reference frame, positive for stdb down	
For Help, press F1		NUM	

Figure 2 Example of the NaviScan driver

aviScan se	tup								
PortType	Address	Port	Baudrate	Databit	Par	Stopbit	timeOff	SensorType	Name
JDP Port	192.168.179. 50	4010					0	Gyro	PSONNAV Gyro
JDP Port	192.168.179. 50	4010					0	Motion	PSONNAV Motion
JDP Port	192.168.179. 50	4010					0	Bathy	PSONNAV Depth
JDP Port	192.168.179. 50	4010					0	Navigation	PSONNAV Position
JDP Port	192.168. 1.45	0					0	Echosounder	BV2250-360
				OK		Cancel			

Figure 3 Example setup



#### • Combine scans

Combine all scans from instrument to one scan with the average timestamp, instead of individual partial scans with individual timestamps – which has the best timestamp accuracy.



#### Figure 4 Combine scans



Figure 5 BlueView ProViewer and NaviScan, upper left side: NaviScan MBE1 view with **Combine scans** option in use, shown individual scans with better timestamp accuracy.





#### • Changing NaviScan Online to show separate beams

Figure 6 Right mouse click to change View settings

Settings	$\times$
Axis Colors Data * Data connection lines Tiled Layout	
Select data to be displayed	
Hidden	_
Line properties	×
Drawing Style *	
Properties	
Load Save OK Cancel	Help

#### Go to Data and show as dots

Result: separate beams are shown.

Figure 7 Data view



Figure 8 Separate beams



#### NaviScan Online Sonar controls:

ile Vi	ew Window Op	tions Tools Help	
<mark>е мь</mark> г -6.00 - -4.00 -	• • • • • • • • • • • • • • • • • • •	Settings Sonar Controls Scan Filters Alarm Settings Load/Reload SVel profile Remove SVel profile Load/Reload CTD for bathy Remove CTD for bathy Load Tide table Remove Tide table Print	Interval Start 0 m Step 1 m Apply Auto High contrast Rainbow Faded Custom
	Sonar Controls		
0.00	Mbe1 BV2250-360		
	Start range	0 m	
2.00	Stop range	5 m	
2.00			

Figure 9 Sonar Controls and Scan Filters



For changing scan filters ranges permanently, use NaviScan Configuration:

Figure 10 Set permanent scan filters



#### What is meant by this driver help?

Using BlueView SDK, dll network connected, but must be defined in setup as UDP, with the IP address of the sonar head, and port can be 0 as it is not used

This is a third party dll,(API), that is provided by Teledyne BlueView and is part of NaviScan. It is used to access the data coming from the profiler.

#### How to enter multiple heads with individual mount offsets

NaviScan's BVT2250-360 driver combines many heads into one head and will not be able apply the different individual head offsets even when only in the forward direction.

If there are multiple mounting offsets, we always need an instance in **NaviScan** for each mounting offset, and then these instances must be setup to accept only the data related to the head offset that are true for the item.

IMPORTANT: One of NaviScan Configuration basic functionalities is 'match checking' the IP addresses and ports, in other words **NaviScan Configuration** checks if there are instruments in the **NaviScan configuration** where IP address and port are the same. If they are the same, **NaviScan** combines them.

You want to avoid the match checking, if you want to enter multiple heads with individual mount offsets by adding three BVT2205-360 drivers, and make sure IP addresses and udp ports differ, eg udp port:1, udp port:2, udp port:3.

🗾 NaviScan.BIN - NaviScan Config						
File Equipment View Options	Tools Help					
	ŧC. Ø	*				
🖃 👛 NaviScan.bin	Sensor & help	BV2250-360				
System Parameters	Name	BV2250-360				
Geodesy	Disabled					
CDL Gyro	Port setup	UDP 1 192.168.1.45				
Avigation	Latency	0 ms				
MMEA GGA-GLL	Mount offset X	offset X 0 m				
Echosounder	Mount offset Y	-0.64 m				
1 BV2250-360	Mount offset Z	0 m				
	Roll mount	0 °				
5 5V2230-300	Pitch mount	0.0				
	Heading mount	0 °				
	Secondary IP	0.0.0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0				
	Head select					
	Time stamp	Sensor timestamp				
	Combine scans					
	Invert angles					
	Scan Filters					
	Quality threshold	0				
	Ind range start	0 m				
	Ind range end	2000 m				
	Ind angle start	-180 °				
	Ind angle end	180 °				
	Section exclude 🗉					
	Beam exclude 🛛 🕀					
	Sensor Y position, re	slative to reference point, positive forward, - for echosounders : sonar common acoustic center, or Tx transducer if using separate Rx Tx heads				

This is how you must do it then:

Figure 11 Driver 1



🗾 NaviScan.BIN - NaviScan Config				
File Equipment View Options Tools Help				
1 1 1	1: C 🛛	] *		
🖃 💭 NaviScan.bin	Sensor & help	BV2250-360		
System Parameters	Name	BV2250-360		
Geodesy	Disabled			
CDL Gyro	Port setup	UDP 2 192.168.1.45		
Navigation	Latency	0 ms		
MMEA GGA-GLL	Mount offset X	0 m		
Echosounder	Mount offset Y	0 m		
	Mount offset Z	0 m		
	Roll mount	0 •		
3 BV2250-360	Pitch mount	0 °		
	Heading mount	0 °		
	Secondary IP	0.0.0.0		
	Head select	only id 1		
	Time stamp	Sensor timestamp		
	Combine scans			
	Invert angles			
	Scan Filters			
	Quality threshold	0		
	Ind range start	0 m		
	Ind range end	20000 m		
	Incl angle start	-180 °		
	Incl angle end	180 °		
	Section exclude  .			
	Beam exclude 🗉			

#### Figure 12 Driver 2

NaviScan.BIN - NaviScan Config File Equipment View Options Tools Help				
	1 C Ø	· *		
🖃 🖨 NaviScan.bin	Sensor & help	BV2250-360		
System Parameters	Name	BV2250-360		
Geodesy	Disabled			
CDL Gyro	Port setup	UDP 3 192.168.1.46		
Navigation	Latency	0 ms		
MMEA GGA-GLL	Mount offset X	0 m		
😑 🖨 Echosounder	Mount offset Y	0.064 m		
	Mount offset Z	0 m		
曲 2 BV2250-360	Roll mount	0 °		
5 6V2230-500	Pitch mount	0 °		
	Heading mount	0 °		
	Secondary IP	0.0.0.0		
	Head select	All heads		
	Time stamp	Sensor timestamp		
	Combine scans			
	Invert angles			
	Scan Filters			
	Quality threshold	0		
	Incl range start	0 m		
	Ind range end	20000 m		
	Incl angle start	-180 °		
	Ind angle end	180 °		
	Section exclude 💿			
	Beam exclude 🛛 🕀			

Figure 13 Driver 3