





MicronNav USBL System

The following is intended as a quick start guide for the connection and operation of a Tritech MicronNav USBL system under the Genesis software.

For details of electrical wiring, please see the relevant section of the hardware manual for the individual product through our website <u>www.moog.com/tritech</u>

MicronNav Hub Setup

Please note that the screen illustrations may differ slightly from that displayed on your computer.

As you connect the devices they will be automatically detected and added to the program. The main area will display the default configuration and the status icons for the devices will appear in the top right of the menu bar area.



Clicking on the icon will bring up the settings and properties for the device with any error messages shown in the diagnostic tab of the device properties.

General

This displays general information when the MicronNav Hub is connected.

The *General* tab contains:

- MicronNav ID, status and firmware details
- Attitude Sensor ID, Status and Firmware details

Hub Connection Ports- for enabling or disabling Dunking transducer or the internal attitude sensor

USBL Sources- For configuring external or internal sensors such as , GPS, Heading and Pitch and Roll

For details of setting up and configuring the MicronNav Hub please refer to the Genesis Quick Start guide and manual.

Devices	General	Configuration	Hub	IO	Display	Chart	Google Maps	
i MicronNav	MicronNav							
	Device	Node 90)					
	Status	o	nline					
	Firmwar	e Version						
	Attitude S	ensor						
	Device	Node 7	5					
	Status	o	nline					
	Firmwar	e Version S	5					
	Hub Conne	ection Ports						
	Attitude	Sensor Nav	Hub E				✔ Ena	ble
	USBL Re	eceivers Nav	Hub HS				✔ Ena	ble
	USBL Sour	ces						
	Heading	Source Int	ernal					-
	Attitude	Source Int	ernal					-
	GPS Sou	Jrce De	fault					-
+ Add Remove Remove	All							
							d	ose



Configuration

This allows the user to configure the software for use with their intended platform and application.

USBL Selection- This contains a number of options for the selection of Transponder or Responder mode.

USBL Reference – This allows the user to select either Mobile Platform with GPS, or Fixed Platform with no GPS and entering Latitude/ Longitude coordinates.

Transducer Offsets- This allows for accurate positioning of the dunking transducer on the users platform, by placing the measurements into the table.

X: Left-Right Y: Up-Down Z: Depth/ Height

Vessel Setup- This allows the user to enter the Length, Beam and Bow Angle of the Vessel being used. This will be displayed when the Show Vessel Overlay tick box is selected.

USBL Solution- This has two options, the first is the Position Filter, which aids in more accurate Navigation, by filtering lower quality signals. The second is the VOS tab, which is used with an entered fixed value or an external sensor.

Devices	General Configuration Hub IO Display Chart Google Maps
i MicronNav	USBL Selection (R=Responder / T=Transponder)
	R0 🖌 T1 📉 T4 📉 T7 🔤 T10 🔤 T13 🔤 T16
	T2 T5 T8 T11 T14
	T3 T6 T9 T12 T15 Select None
	USBL Reference
	Platform Mobile (GPS) -
	Fixed Coordinates Lat 0 Lon 0
	Transducer Offsets X 0.0m Y 0.0m Z 0.0m
	Vessel Setup
	Length 4 – 15.0m
	Beam 4 - 6.0m
	Bow Angle 4 - 45°
	USBL Solution
	Position Filter On
	Velocity Of Sound Use Fixed Value Velocity Of Sound Use Fixed Value
🛨 Add Domovo Domovo All	
T Add Remove Remove All	
	Close



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Hub

This is where the MicronNav Hub settings are changed. If you are setting up a Tritech peripheral device, then you will need ensure that the port is setup correctly.

The MicronNav Hub port baud rates are set in the configuration for attached sensor e.g. Sonar, and not in the MicronNav Hub settings.

Devices	Ceneral Configur	ration	tub TO	Dicolay	Chart	Cooole Mans	
i MicronNav				Сларка у	Chart	GOOGIE Maps	
	Port A Mode	RS232					
	Port B Mode	RS232					
	Port C Mode	RS232					
	Port D Mode	RS232					
	Control Brightness	15					
	Panel Leds On	V					
	ArcNet Baud	156					
				Drogroop	08/	Apple	
				Progress	0%	Арру	
	Responder Connection	n					
	Sonar Aux on	Port B		Direct	on Port B		
	Sonar Aux on	Port D		Direct	on Port D		
				None			
+ Add Remove Remove All							
0000							Close

Port A Port Comms *RS232/RS485*

Port B Port Comms *RS232/RS485/RS422*

Port C Port Comms RS232/RS485/Arcnet

Port D Port Comms *RS232/RS485/Arcnet*

Control Brightness

Adjust the brightness of the Nav Hub front LED's 1 through 15 increasing brightness

Panel Leds On

Switch the front panel LEDS ON/OFF

ArcNet Baud

Setting Arcnet baud rate across all ports 312 (Deep Towfish) 156 (High) 78 (Low)

After any setting change the *Apply* button must be pressed.



Revision : 2

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Devices	General Co	onfiguration	Hub	IO	Di	splay	Chart		Google Maps	• •
i MicronNav	Output Data									
	Port	Ba	ud	Mode	2	F	ormat		Enabled	
	1 <none></none>	▼ 9600	-	ASCII	•	Proc X	YZ	•	Off	-
	2 <none></none>	▼ 9600		ASCII		Proc X	ΥZ		Off	-
										+
_										
+ Add Remove Remove All										
									Clos	se
0000	159 8414					319 68	28			

The IO tab (shown above) contains the setup options for Remote Communications. This allows the outputting of sensor data to a survey computer.



Revision : 2

Display

Devices	General Configuration Hub IO	Display Chart Google Maps 4
i MicronNav	Grid Options	PPI Options
	Show Grid Lines ✓ Number of Grid Lines 5 Grid Lines Colour ✓ Show Scale ✓ Centre view on Vessel/Platfor ▼	Auto-adjust range
	Sub Options	Vessel Options
	Unit IDT1Sub ColourImage: ColourTrail ColourImage: ColourNumber of Trail Points20Show TrailsImage: ColourShow TrailsImage: ColourShow Trail LinksImage: Colour	Show Vessel Overlay Vessel Colour Trail Colour Number Of Trail Points 20 Show Trail Show Trail Links
	Chart Options Show Raster ✔ Show Markers ✔	
+ Add Remove Remove All		Close

The *Display* tab contains the following options:

Grid Options- for setting up the grid lines and colour

PPI Options- for selecting auto dynamic range on PPI Display

Sub Options- This enables the user to select options for individual Transponders and a Responder

Vessel Options- This enables the user to select options for the Mobile Position.

Chart Options- This gives the user the option to toggle on/off markers that may have been added into a chart. Here there is the option to toggle on/ off the Raster Image when working with Bitmap files.



Chart

Devices								
Devices	General	Configura	tion Hub	IO	Display	Chart	Google Maps	s 🖣 🕨
i MicronNav	Files							
	World F	ile					Impor	t
	Bitmap f	File					Impor	't
		هsave	eat plication L	aptop/	Documents/Ge	enesis/Char	ts/	
	Settings							
	Map Co	ordinate	Top left	-		Ellips	oid WGS84	•
					5	Skew Angle	(°) 0.00	\$
	Length	(m)			Height (m)			
	0.0000)		¢	0.0000			\$
	Coordinate	e System						
	Latitute	(Decimal deg	grees)		Longitude (De	cimal degre	es)	
	0.000	000		¢	0.000000		\$	•
	Latitude	e (deg, min, s	ec)		Longitude (de	g, min, sec)		
	0	\$ 0	0.00		0	0	0.00 🌲	•
	Easting				Northing			
	16664	0.000000			0.000000			•
	Hemisph	nere North	▼ Z(ne	31		Grid Zone	31N
+ Add Remove Remove All								
0000		14.4			340.69	128		Close

The Chart Tab contains the following options:

Files-

World File- This enables the user to load a World file of the required chart they have saved to the computer.

Bitmap File- This is the visual of the required chart which is used to illustrate the position on the screen.

Settings- This enables the user to set the point of reference for the chart, the length and the height.

Coordinate System- This allows the user to set the co-ordinate system for the intended chart.



Google Maps

Devices	General	Configuration	Hub	IO	Display	Chart	Google Maps				
🍋 MicronNav	Settings										
	Enable	Google Maps									
	API key										
	Terrain	Type Roi	admap					•]			
	Disk Cachi	ng									
	Enable	Disk Caching 🗸									
	Cache F	Folder /Ap	Data/Loc	al/Trited	h/Genesis/d	ache/Goog	le				
	Cache I	.imit 536	5870912				¢				
	لمبيرة	ache size 15,	560 bytes				Clear Ca	the			
+ Add Domovo Domovo All											
Aud Remove Remove All											
							c	lose			

The Google Maps tab contains the following options:

Settings- This enables the user to select Google Maps as an alternative to a chart. Google Maps is an online only service and requires an internet connection. The user can enable a hotspot on their mobile phone and use this feature remotely.

Disk Caching-Retains a temporary copy of the map locally to prevent having to download again. This feature will still require an online internet connection, to validate and use the cached data.



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Diagnostics

This displays the status messages from the main node of the MicronNav Hub. This is useful during problem solving.

Devices	Configuration	Hub	το	Display	Chart	Google Mans	Diagnostics	
illi MicronNav	Input Data	Hab	10	oropidy	Churc	coogic rispo		
	11:26:35 < 11:26:35 < 11:26:36 < 11:26:36 < 11:26:36 < 11:26:38 < 11:26:38 < 11:26:38 < 11:26:38 < 11:26:39 < 11:26:39 < 11:26:39 <	< Naviga < V4 Alivi < Naviga < Naviga < Naviga < V4 Alivi < V4 Alivi < Naviga < Naviga < V4 Alivi < V4 Alivi < Naviga < Naviga < Naviga	tion Pin e Statu tion Da tion Pin tion Pin e Statu tion Pin tion Pin e Statu tion Da tion Pin tion Pin	g Data, Ping s Message ta Reply, Ur g Data, Ping g Data, Ping s Message g Data, Ping g Data, Ping s Message ta Reply, Ur g Data, Ping g Data, Ping	g ID = 1 init ID = 1 g ID = 49 g ID = 1 g ID = 49 g ID = 1 init ID = 1 g ID = 49 g ID = 1 init ID = 1 g ID = 49 g ID = 1			
-						Pause	Clear	
	Alerts							
	Time				A	ert		
+ Add Remove Remove All								
							Clo	se

Input Data

Time stamped messaged received on the Main MicronNav Hub port

Alerts

Time stamped Alert messaged generated by Genesis.

If the Micron Nav Hub is disconnected the *Diagnostics* tab will be updated with a warning symbol and the alert message detailed in the *Alerts* window.



Quick Project Setup

This guide shows how to setup a basic navigation project and configure range and ping interval.

Step 1

Connect up all components of the system and apply power. Start up the Genesis software, this software will automatically recognise the MicronNav Hub and an USBL icon will appear in the top task bar.



Step 2

Click on the device icon to configure your corresponding Transponder or Responder device. For this example T2 is selected. Close the menu once you have selected the required Transponder/Responder.

Devices	General	Configuration	Hub		Display	Chart	Google Maps	
illi MicronNav	USBL Selec	tion (R=Respon	der / T=T	ranspon	der)			
	R0	Τ1	T4	T7	T10	т1	3 🔳 Т16	
		√ T2	Т5	Т8	T11	🛛 🗖 Т1		
		Т3	т6	Т9	T12	т1	5 Select Nor	ne
	USBL Refe	ence						
	Platform	M	obile (GPS					
	Fixed Co	ordinates Lat	0			Lon	0	
	Transdu	cer Offsets X	0.0m	\$	Y 0.0m	\$	Z 0.0m	¢
	Vessel Seta	ιp						
	Length					15.0m		
	Beam					6.0m		
	Bow Ang	le 4 –	-0			45°	GBBL	
	USBL Solut	on						
	Position	Filter On				1		
	Velocity	Of Sound Us	e Fixed V	alue		1475.0	m/s	J
+ Add Remove Remove All								
								ose



Step 3

This setup page shows the system working and interrogating Transponder 2 (T2), on the PPI display.



Step 4

To adjust the range or interrogation (ping) intervals select the menu from the top left hand side of the page.

