SONARDYNE INTERNATIONAL LTD. TECHNICAL BULLETIN				Sound in depth
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Prepared By: JJP			Sig:	Date:
Checked By: BAK	Title : Compatibility of new digital USBL transceiver with old V6 L/USBL software.		Sig:	Date:

## **Background**

Some older versions of Sonardyne's L/USBL software do not allow sufficient time to allow a connection to be established to the latest generation of Generic Digital Transceivers (GDT).

This problem manifests itself by the 'Polling Page' displaying 'TCVR NOT FOUND' as if shown below.

Sonardyne sound in depth	Current Level: Top	12:51:58 27 Jul 04 File: SODYNE TCVR:GDT USBL
		1 Navigate
Sonardyne LUSBL System Summary	. System V6.02r2 Nov 2000 for CUSTOMER SUPPORT	2 Job Setup
Nav I∕F Card V1 Device	.14 Serial IO Card Sof Status	tware V4.21 File Management
GYRO GYRO5 *TCUR 01493	Robtson Hdg: 0.0 TCVR NOT FOUND	-0.01 A Installation
		5 System Setup
		6 Simulate

# **Explanation**

The problem exhibits itself with L/USBL Type 7784 Navigation Processor installed with software versions prior to V6.03, when using new transceiver Types 8021 and 8023 (yellow housings) with firmware later than V6.07.

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Due to the generic nature of the GDT hardware, it takes longer for the transceiver to be ready for the first command than with previous transceivers. Older versions of L/USBL software do not allow enough time after reset, and so the transceiver does not appear to respond to the command. The software therefore thinks the transceiver is not found, so displaying the message "TCVR NOT FOUND" as shown above.



V6 LUSBL System

**GDT Transceiver** 

# Solution

### <u>Upgrade</u>

Installing the latest version of L/USBL software resolves this problem. Please contact Sonardyne to discuss the provision of the latest L/USBL software, as this is linked to the status of the CPU in the Navigation Processor. Versions of L/USBL software later than V6.02r2 require a CPU PCB in the Navigation Processor with at least 8Mb of RAM. Older systems were delivered with CPUs with only 4Mb of RAM, which means an upgrade to a new CPU board may also be necessary.

The CPU version can be identified by the ident on the lefthand handle of the PCB.

СРИ Туре		IDENT ON HANDLE
25 MHz	4MB	167 –01B or 167-001BE
33MHz	8MB	167- 32 B
25MHz	8MB	167P – 24SE
25MHz	8MB	167P – 34SE

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Upgrading to the latest version of software also enables many new features of the GDT transceiver, including :

- Sonardyne SSM / PGT beacon types
- Simrad HPR-400 series channels (RPT & MPT tracking)
- AODC beacon tracking

#### In addition:

When using GDT transceivers Sonardyne's new ping stacking algorithm becomes available which allows true acoustic updates or cycle time to be achieved more quickly by interleaving ranging cycles. This has the benefit of supplying faster, more stable positioning.

The latest version of L/USBL software also supports :

- Serial VRU's
- Magnetic compasses
- Synchronisation of system clock and acoustic cycles to UTC time

#### Work around

There is a workaround available for immediate use offshore to get the new transceiver to work with the older software.

This works by introducing a 'dummy transceiver' into the system before the actual transceiver. This is a transceiver that does not really exist but the system spends a small amount of time attempting to find the dummy transceiver before looking for the new one.

The procedure below can be used as an aid for adding a new transceiver to a V6 system, and verifying correct operation.

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## INSTALLING OF GDT HEAD WITH PROCESSOR SOFTWARE V6.02

- 1) WITH THE PROCESSOR POWER OFF, CONNECT THE HEAD TO THE PROCESSOR ON PORT 1 OR PORT 2 BEHIND THE PROCESSOR. DOES NOT MATTER WHICH PORT IS CONNECTED TO THE HEAD.
- 2) POWER UP THE PROCESSOR, YOU WILL SEE THE MAIN POLLING PAGE. THEN ON THE RIGHT HAND MENU, SELECT '4 INSTALLATION' BY PRESSING THE NUMBER '4' ON THE KEYBOARD.
- 3) SELECT 4 AGAIN (I/O PORT ALLOCATION). YOU WILL SEE A PAGE OF ITEMS. LOOK FOR THE HEADING 'SERIAL I/O 1 AND 2' IN THE LEFT COLUMN. SELECT THESE PORTS ATTRIBUTES TO SHOW THE FOLLOWING :

Sona sound	rdyne IN DEPTH	urrent Level: op->Installation ⁄O Port Allocati	on and Setup		1 F T	4:47: ile: CVR:1	34 15 1234 000	Sep 04
I∕O CARD	PORT NAME	USE	PROTOCOL	BAUD (	ITS/ CHAR	STOP BITS	PAR	FLOW CTRL
CPU CPU SYNC I.O. SYNC I.O. SYNC I.O.	Ser1 Ser2 Printer VRU Sync Dig Serial	None None None Analogue VRU Synchro Gyro None	Synchro					
Serial IO Serial IO	Ser1 Ser2	Acoustic Tovr Acoustic Tovr	Ascii Ascii	38400 38400	8	1 1	None None	None None
Serial IO Serial IO Serial IO Serial IO	Ser3 Ser4 Ser5 Ser6	None None None DP Telegram	HPR 418	  9600	- - 8	  1	None	None

note:only change the settings shown in the rectangle, setting outside this area may be different, and may not necessarily match the settings shown.

- 4) THE SETTINGS ARE CHANGED BY HIGHLIGHTING THE RELAVENT ATTRIBUTE (BAUD, STOP BITS etc.), PRESSING 'ENTER', USING THE UP AND DOWN ARROW KEYS TO SET THE CORRECT ATTRIBUTE AND THEN PRESSING 'ENTER' AGAIN TO FINALY SELECT.
- 5) HIT THE 'ESCAPE' KEY ONCE TO SAVE THE INFORMATION.
- 6) SELECT MENU OPTION 1 'ACOUSTIC TRANSCEIVERS'
- 7) CREATE A DUMMY HEAD (ANY NUMBER BETWEEN 1000 TO 1200).
- 8) CREATE A DEVICE FOR THE ACTUAL HEAD , USE THE DEVICE NUMBER ON THE HOUSING.
- 9) ON THE LOWER HALF OF THE SCREEN UNDER HEADING 'COMPATT COMMAND SETUP':

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NAME. ( ACTUAL TRANSCE PRESS 'E TO MAIN	NAME. CHANGE IT FROM <b>DUMMY</b> TO WHATEVER NAME OF THE ACTUAL TRANSCEIVER. PRESS 'ENTER' AND PRESS 'ESCAPE' KEY 2 TIMES TO SAVE AND GO TO MAIN POLLING PAGE.								
	DIN DEPTH Acoustic	stallation-> : Transceivers	F	ile: 1234 CVR:DUMMY					
- Transce Name	eiver Transceive Type	er Device Ser No	Depth Rating(M)	Depth Sensor Offset					
DUMMY Main H	Standard IEAD Standard	USBL 1199 USBL 1000							
СОМРАТТ С	COMMAND SETUP								
Compatt Tovr Na	:Cmd Telem ame Baud Rate	Compatt Cmd е Тх Ромег	Compatt Cmd Rx Sensitivity	Telemetry Wait Time					
MAIN HE	AD Normal	High	Med	10					
Units in	hange from 'DUMMY' to ain head name. Metres								

- 10) NOW USE UP ARROW KEY ( $\uparrow$ ) TO THE MENU 1 (NAVIGATE) , DO NOT HIT THE 'ENTER' KEY.
- 11) THE TOP LEVEL POLLING PAGE CAN BE OBSERVED WHERE THE STATUS OF MANY POSSIBLE DEVICES CAN BE OBSERVED

12) EXAMPLE :

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lo.:04-006	0.:04-006 Issue: A Date: 27-09-04			Page 6 of 7				
	Current Level: Top			15:06:57 15 Sep 04 File: 1234 TCVR:DUMMY				
				1 Navigate				
				2 Job Setup				
Sonardyne	LUSBL System V6.02			3 File Management				
System Sum	mary for RANGEMASTE	R		Xa				
Device	Status			Installation				
SERIAL CAR	D V3.03							
URU URU1	Pitch: 0.	02 Roll: -0.05	V1.14	System				
GYRO GYRO1	HEADING: 3	46.7	01.14	Secup				
TCVR 01199	TCUR NOT F	OUND		6 Simulate				
*TCVR 01000	Pitch: 2.	48 Roll: 0.43	05:30					
1								

- 13) SELECT MENU 2 (JOBSETUP) BY PRESSING '2'. FROM THE NEXT MENU SELECT 1 (NAVIGATION SETUP) BY PRESSING 1.
- 14) SCROLL THE CURSOR DOWN TO OBJECT POSITIONING BY REF BCNS AND DGPS SECTION. HIGHLIGHT THE (USUALLY VESSEL) NAME IN THIS RECTANGLE AND THEN PRESS 'ENTER' KEY.
- 15) NOW SCROLL THE CURSOR TO SECTION 'ACOUSTIC DEVICE', HIGHLIGHT THE TRANSMIT/RECEIVE SETTINGS FOR THE MAIN HEAD AND SELECT Tx/Rx USING THE ENTER KEY AND UP AND DOWN ARROWS.

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Sonardy sound in def	Ne Current Top->Jot Object S	Level: 5 Setup-3 Setup	>NavSetup->			15:02:3 File: 3 TCVR:D	35 15 S 1234 JMMY	ep 04	
Object Name	Depth Aiding	Object Colour	t r Gain	OUTPI SVY DP	JTS IDX I	APS Update	DGPS	DGPS Acc	
RANGEMASTER	0.0		HIGH	OFF OF	FF 10	2.0	OFF	5.0	
			Shama Office	+ -	сь.		lo Esc		
Shape Name	Rotation	Star	rboard F	orward -	50.	ape sca X	re Fac Y	cors	
SHIP	0.00		0.00	0.00		3.00	10	.00	
Acoustic Devices St	Offsets From tarboard f	n Object Forward	Datum Depth	Transı	nit ∕ Re Settings	ceive	Trans	ducer	
DUMMY Main head	-0.75 0.75	-5.00 -5.00	3.45 3.45		Faile <mark> </mark> Tx∕Rx	d I	(L (L	)USBL )USBL	
				СНА	ANGE THE MA	AIN HEAD S	ETTING		
	Antenna Offs	sets	Attached	Active	Attac	hed	Acti	ve	
DGPS St	tbd Fwd H	leight	Gyros	Gyro	VRU	s	VRU		
None			GYR01	GYRO:	L VI	RU1	VRU	1	
Fixed Bearing									
None									

# 16) PRESS ESCAPE 3 TIMES RETURN TO THE TOP LEVEL AND SAVE THE SETTINGS.

17) ENTER NAVIGATE MODE BY PRESSING 1, ENSURE THAT THE MESSAGE 'TRANSCEIVER NOT FOUND' MESSAGE DOES NOT APPEAR AT THE TOP OF THE SCREEN IN THE STATUS WINDOW.