



SeaBat T-Series Subsea Sonar System

The SeaBat T20/50-S multi-frequency sonar system designed for UUVs and extended mission time:

- Depth rating: 6000m or 400m
- Frequency: 200 and/or 400kHz, 200-400kHz
- Ping rate: Up to 50Hz (range dependent)
- Range: Up to 575m (200kHz)
- Power requirements¹: 22-60VDC; average 110/130W, peak 370/390W (T20/50-S)
- Operating temperature: -2° to +36° (submerged)

Projector Units (deep, 6000m)

TC2160 400kHz frequency	
Height	77mm
Length	285mm
Depth	62mm
Weight in air	2.85kg
Weight in water	1.85kg

TC2163 200kHz frequency	
Height	115mm
Length	280mm
Depth	100mm
Weight in air	7.5kg
Weight in water	5.0kg

Projector Unit (shallow, 400m)

T20/50: TC2181 200-400kHz frequency	
Height	86.6mm
Length	280.0mm
Depth	93.1mm
Weight in air	5.4kg
Weight in water	3.4kg

Receiver Unit

T20: EM7219-1 200-400kHz frequency	
Height	123.2mm
Length	254.0mm
Depth	102.0mm
Weight in air	5.0kg
Weight in water	2.2kg

T50: EM7218-1 200-400kHz frequency	
Height	90.7mm
Length	460.0mm
Depth	102.0mm
Weight in air	8.2kg
Weight in water	3.9kg

Subsea Sonar Processor (SSP)

SSP	
Length	494mm (excl. connectors)
Diameter	174mm
Weight in air	24.4kg (excl. cables)
Weight in water	10.2kg (excl. cables)

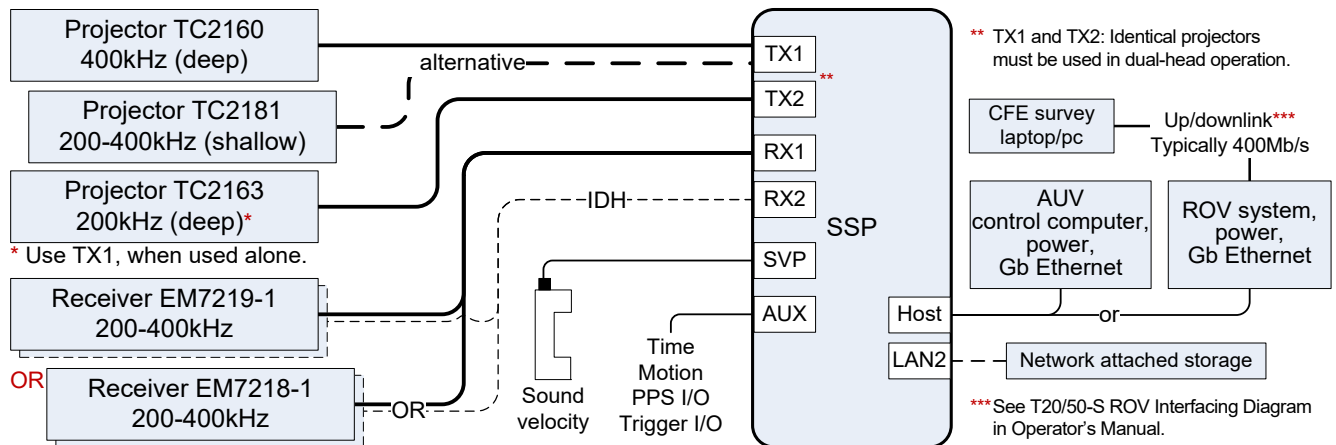
3m Standard Cables

Projector to SSP	
Bend radius	63.5mm (minimum)
Receiver to SSP	
Bend radius	100.0mm (minimum)

* This Quick Reference Guide is not intended as a substitute for the Operator's Manual (provided on a USB key).

¹ For IDH configurations: 36-54VDC; average 150/200W, peak 410/460W (T20/50-S).

System Block Diagram



Operator Laptop/PC – Minimum Requirements (for ROV operation²)

There are two different sets of minimum requirements for the customer-furnished laptop/PC depending on how much software is to be run on the unit:

Only Sonar User Interface:

- Moderate size laptop
- For example:
 - Gb Ethernet
 - Graphic card: with OPENGL 3.30 support and 2GB memory, e. g. NVidia GeForce GTX 7xx
 - Internal memory: 4GB
 - OS 32-bit MS Windows 7, 8, or 10

Sonar User Interface and Teledyne PDS**:

- CPU: high-end quad core processor
- Gb Ethernet
- Graphic card: with OPENGL 3.30 support and 2GB memory, e. g. NVidia GeForce GTX 7xx
- Internal memory: 8GB
- Hard disk: 1 x 500GB
- OS 64-bit MS Windows 7, 8, or 10

Personal Safety



Do **not** connect or disconnect cables with power on.

Equipment Safety

- To disconnect wet-end cables from the SSP, first unscrew the locking sleeves before unmating the connectors.
- Do **not** pull directly on the cords, as this will damage both the cables and the SSP.
- Do **not** bend the cables beyond the recommended limits when positioning the cables. Flexing the cable to less than the specified bend radius will damage the cable.

- Female wet-end connectors** must be **lubricated** at regular intervals even if not mated/unmated, or every 5 matings to avoid damaged male connectors (as shown).



Use Molykote® 44 Medium as included in your delivery.

** For further details, please refer to the appropriate manual.

² AUV processing requirements depend on mission requirements and subscribed records.



SSP Connections

	SINGLE HEAD			DUAL HEAD		
	DF deep	SF deep	DF shallow	SF deep	SF deep	DF shallow
TX1	TC2160 (400kHz)	TC2160 (400kHz) or TC2163 (200kHz)	TC2181 (200-400kHz)	TC2160 (400kHz)	TC2163 (200kHz)	TC2181 (200-400kHz)
TX2	TC2163 (200kHz)			TC2160 (400kHz)	TC2163 (200kHz)	TC2181 (200-400kHz)
RX1	EM7219-1 (200-400kHz) or EM7218-1 (200-400kHz)			EM7219-1 (200-400kHz) or EM7218-1 (200-400kHz)		
RX2*				EM7219-1 (200-400kHz) or EM7218-1 (200-400kHz)		
Host	Power and Gb Ethernet cable to UUV system					
AUX	Pigtail cable to auxiliary sensors					
SVP	Optional SVP 70 cable					
LAN2	Gb Ethernet with PoE+					

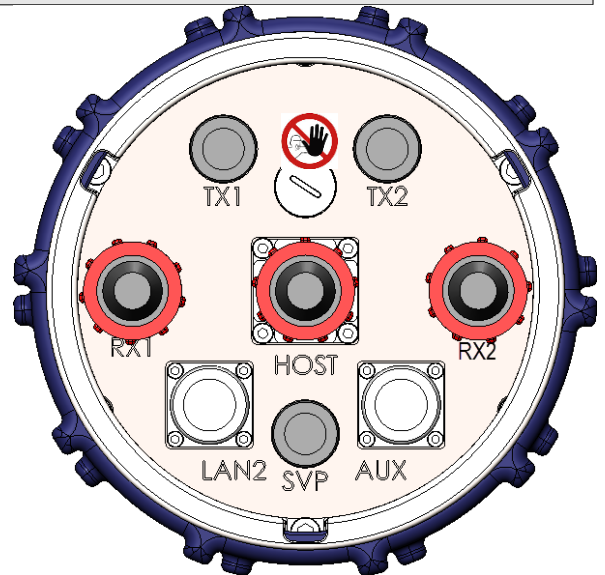
* The RX2 connector is not labelled on the bottle itself.



Do not open the Fill valve
(for Teledyne RESON use only!).

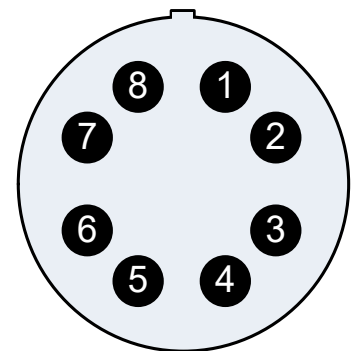
Unused connectors **must** be sealed with dummy plugs.

Dust caps: Teledyne logo > **LAN2** conn.
Naked cap > **AUX** conn.



Pin Designations for LAN2 Connector (TIA/EIA 568B) on SSP

NETG Pin	Wire color	RJ-45 Pin	Signal
1	White/orange	1	BI_DA+
2	Orange	2	BI_DA-
3	White/green	3	BI_DB+
4	Green	6	BI_DB-
5	White/brown	7	BI_DD+
6	Brown	8	BI_DD-
7	White/blue	5	BI_DC-
8	Blue	4	BI_DC+



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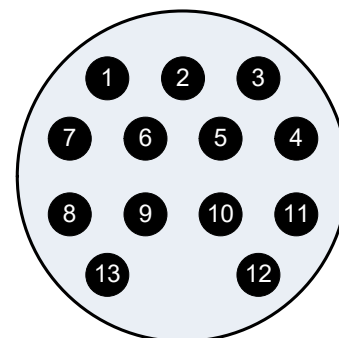
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Pin Designations for Host Connector (TIA/EIA 568B) on SSP

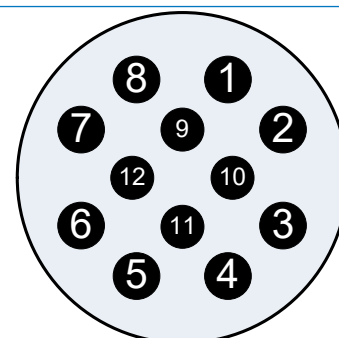
Pin	Wire color	RJ-45 Pin	Signal
1	Black		Supply RTN
2	Orange		GND Shield
3	White		Supply RTN
4	Brown	8	BI_DD-
5	White/brown	7	BI_DD+
6	Blue	4	BI_DC+
7	White/blue	5	BI_DC-
8	Orange	2	BI_DA-
9	White/orange	1	BI_DA+
10	Green	6	BI_DB-
11	White/green	3	BI_DB+
12	Red		Positive supply (22-60V)
13	Green		Positive supply (22-60V)



Pins 1, 3, 12, 13 must all be used.

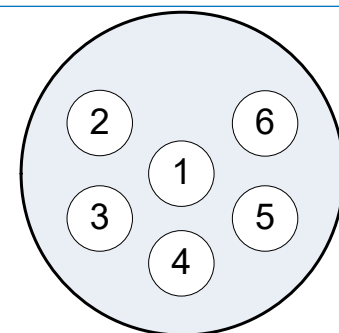
Pin Designations for AUX Connector on SSP

Pin	Signal	Pin	Signal
1	AUX +12V Out (8W)	7	AUX RTN
2	TX (I/O COM 4)	8	Trigger Out
3	Motion/Attitude RS-232 RTN (I/O COM 2 + 4)	9	Trigger In
4	Motion/Attitude RS-232 In (I/O COM 2)	10	Trigger I/O RTN
5	Time/PPS I/O RTN (I/O COM 1)	11	PPS Out
6	Time RS-232 In (I/O COM 1)	12	PPS In



Pin Designations for SVP Connector on SSP

Pin	Signal	Pin	Signal
1	RS-232 RTN (I/O COM 3)	4	SUPPLY +12V Out (2W)
2	RS-232 In (I/O COM 3)	5	N/A
3	RS-232 Out (I/O COM 3)	6	SUPPLY RTN



Setup of SeaBat T-Series Subsea System**

- Connect the SeaBat T20/50-S to the network.
 - Factory default IP addresses are 10.11.10.1 (Host) and 10.11.10.2 (LAN2).
- The connection from the operator laptop/PC to the SSP is done via the Sonar UI.
 - Go to the Hardware pane, and click the Sonar address drop-down menu. The T20/50-S system can be identified by its serial no. next to the IP address. Find the serial no. on the front of the SSP.

** For further details, please refer to the appropriate manual.

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