Seanet System
Sonar Aux DigiQuartz

Supplement

Supplied by

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F063.1

Table of Contents

Handling of Electrostatic-Sensitive Devices

Attention

Observe Precautions for handling Electrostatic Devices

Caution

Handling of Electrostatic-Sensitive Devices

Certain semiconductor devices used in the equipment are liable to damage due to static voltages.

Observe the following precautions when handling these devices in their unterminated state, or sub-units containing these devices:

- Persons removing sub-units from any equipment using electrostatic sensitive devices must be earthed by a wrist strap via a 1MΩ resistor to a suitable discharge reference point within the equipment.

- Soldering irons used during any repairs must be low voltage types with earthed tips and isolated from the Mains voltage by a double insulated transformer. Care should be taken soldering any point that may have a charge stored.

- Outer clothing worn must be unable to generate static charges.

- Printed Circuit Boards (PCBs) fitted with electrostatic sensitive devices must be stored and transported in appropriate anti-static bags/containers.

F110.0

Warranty Statement

Tritech International Limited herein after referred to as **TIL**

TIL warrants that at the time of shipment all products shall be free from defects in material and workmanship and suitable for the purpose specified in the product literature.

The unit/system warranty commences immediately from the date of customer acceptance and runs for a period of 365 days. Customer acceptance will always be deemed to have occurred within 72 hours of delivery.

Note: Any customer acceptance testing (if applicable) must be performed at either TIL premises or at one of their approved distributors unless mutually agreed in writing prior to despatch.

Conditions:

These include, but are not limited to, the following:

1   The warranty is only deemed to be valid if the equipment was sold through TIL or one of its approved distributors.

2   The equipment must have been installed and commissioned in strict accordance with approved technical standards and specifications and for the purpose that the system was designed.

3   The warranty is not transferable, except or as applies to Purchaser first then to client.

4   TIL must be notified immediately (in writing) of any suspected defect and if advised by TIL, the equipment subject to the defect shall be returned by the customer to TIL, via a suitable mode of transportation and shall be freight paid.

5   The warranty does not apply to defects that have been caused by failure to follow the recommended installation or maintenance procedures. Or defects resulting from normal wear & tear, incorrect operation, fire, water ingress, lightning damage or fluctuations in vehicles supply voltages, or from any other circumstances that may arise after delivery that is out with the control of TIL.
        (**Note:** The warranty does not apply in the event where a defect has been caused by isolation incompatibilities.)

6   The warranty does not cover the transportation of personnel and per diem allowances relating to any repair or replacement.

7   The warranty does not cover any direct, indirect, punitive, special consequential damages or any damages whatsoever arising out of or connected with misuse of this product.

8   Any equipment or parts returned under warranty provisions will be returned to the customer freight prepaid by TIL

9   The warranty shall become invalid if the customer attempts to repair or modify the equipment without appropriate written authority being first received from TIL.

10   TIL retains the sole right to accept or reject any warranty claim.

11   Each product is carefully examined and checked before it is shipped. It should therefore be visually and operationally checked as soon as it is received. If it is damaged in anyway, a claim should be filed with the courier and TIL notified of the damage.

Note: TIL reserve the right to change specifications at any time without notice and without any obligation to incorporate new features in instruments previously sold.

Note: If the instrument is not covered by warranty, or if it is determined that the fault is caused by misuse, repair will be billed to the customer, and an estimate submitted for customer approval before the commencement of repairs.

F167.1

Safety Statements

⚠ **Caution!**	Throughout the manual certain safety or operational related comments and requirements will be highlighted to the operator by indications identified by the adjacent symbol and text.

Technical Support

Contact your local agent or Tritech International Ltd

	Mail	**Tritech International Ltd.** Peregrine Road, Westhill Business Park, Westhill, Aberdeen, AB32 6JL, UK
☎	Telephone	++44 (0)1224 744111
	Fax	++44 (0)1224 741771
💻	Email	support@tritech.co.uk
	Web	www.tritech.co.uk

**An out-of-hours emergency number is available by
calling the above telephone number**

If you have cause to use our Technical Support service, please ensure that you have the following details at hand **prior** to calling:

- System Serial Number (if applicable)
- Fault Description
- Any remedial action implemented

Due to the expansion of equipment capabilities and the fact that new sub-modules are continually being introduced, this manual cannot detail every aspect of the operation.

The name of the organisation which purchased this system is held on record at *Tritech International Ltd*. Details of new software and hardware packages will be announced at regular intervals. Depending on the module, free upgrades will be offered in keeping with our policy of maintaining the highest levels of customer support.

Tritech International Ltd can only undertake to provide software support for systems loaded with Operating System and Tritech Seanet software in accordance with the instructions given in the System Re-installation section of this manual. It is the customers responsibility to ensure the compatibility of any other package that they may choose to load unless with the prior consent of *Tritech*.

INTRODUCTION

It is possible to configure the 'Aux' port on the SeaKing Sonar for input of RS232 / RS485 serial data from a free-running Series-8000 (or compatible) DigiQuartz.

It may be possible to power the DigiQuartz from the Sonar Aux Port but first check that the Power ranges are the same. The 24VDC power that is applied to the Sonar 'Main' port is linked directly through to the Aux port.

If the DigiQuartz power requirements are 6 - 16VDC then <u>DO NOT</u> power directly from the Sonar AUX Port as this may damage the DigiQuartz.
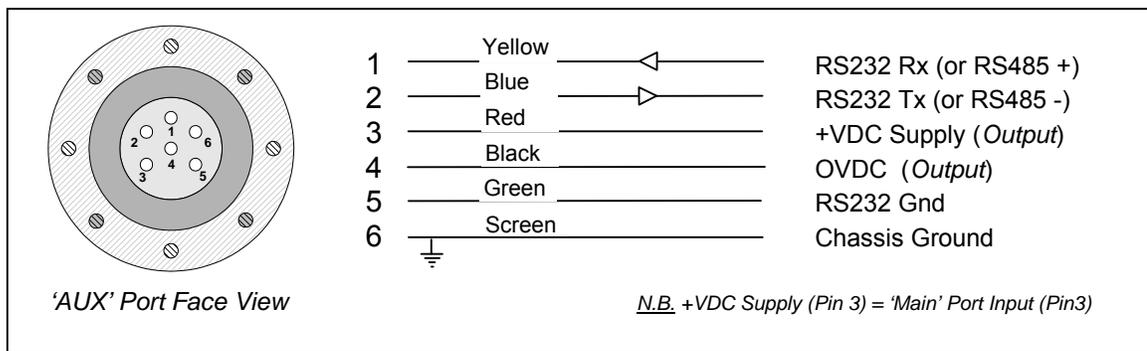
⚠️ **Caution!**	**Either install an in-line DC adapter to the Sonar AUX Port or power the DigiQuartz from an external PSU.**

Note: It is recommended, whenever possible, that RS485 be used for the DigiQuartz to Sonar Aux Port telemetry link. Using RS485 (instead of RS232) avoids breaking the power isolation in the SeaKing head.

Sonar AUX Port Wiring

Pin	Wire	Function
1	Yellow	RS232 Rx (or RS485 +)
2	Blue	RS232 Tx (or RS485 -)
3	Red	+VDC Supply (*Output*)
4	Black	0VDC (*Output*)
5	Green	RS232 Gnd
6	Screen	Chassis Ground

'AUX' Port Face View   <u>N.B.</u> *+VDC Supply (Pin 3) = 'Main' Port Input (Pin3)*

The standard mating connector for the Aux Port is a Tritech 6-pin.

COMPATIBLE DIGIQUARTZ CONFIGURATIONS

The system has been tested with the Series-8000 DigiQuartz. This unit has RS232 and/or RS485 output options. This model of DigiQuartz can be programmed to operate in a number of different modes with different output strings. However, it must be configured with a free-running, continuous output before connecting to the SeaKing Sonar Aux Port. The Sonar will only "listen in" to the Aux port and cannot send any configuration or startup commands to the DigiQuartz. Therefore the DigiQuartz must first be programmed to the correct mode before connecting to the Sonar Aux port.

For the purposes of configuring the DigiQuartz with the correct mode settings, it must be connected to a PC serial port and new configurations downloaded into its non-volatile memory. The manufacturers (Paroscientific) provide a Windows based program for checking and downloading configurations and modes into the DigiQuartz unit.

The Sonar Aux port will accept any serial messages that are terminated with a Line Feed character. These messages can be up to 100 bytes long. However, at the surface, the SeaNet program must be able to identify what the units are for the DigiQuartz data it is being sent.

The SeaNet program will <u>only</u> interpret **pressure** data that is sent from the DigiQuartz in either **Psi** or **Bar**. Again, these data messages must have unit labels attached – the correct output mode should be programmed into the unit using the manufacturers Windows based program.

Once pressure data has been recognised in SeaNet, it will be applied to a depth calculation and the resultant depth value in metres will be displayed on the Sonar Settings Bar.

The depth calculation will use a **Density** and **Barometer** value that has been entered through <u>**Settings**</u> -> <u>**Environment**</u> on the Menu bar. If the local **Latitude** is known then this should also be entered to correct the Local Gravity constant that is also applied in the depth equation***.

* The full depth equation can be found at the end of this document

Output Modes

The Series-8000 DigiQuartz manual should be consulted for full details of the different modes it can be programmed with. Only pressure data (output in **Bar** or **Psi**) are supported by the SeaNet program.

Here is a list of the modes that should be programmed to operate with the Sonar Aux port interface…

Responses from the DigiQuartz (Series-8000) are typically received in the following form:

*000114.4567psiaCrLf

where;	*	= Start Character	(ASCII 42)
	00	= Destination ID	(ID of Serial Host)
	01	= Source ID	(ID of Device that is responding)
	14.4567	= Data	(Data Sent)
	psia	= Units label	(ASCII Units Identifier)
	Cr	= Carriage Return	(ASCII 13)
	Lf	= Line Feed	(ASCII 10)

⚠️ **Caution!**

> *The unit should be programmed to send a units label after the data. If no unit label is present then the surface will assume it is PSI data*

The 2 main outputs that the Sonar Aux port will receive are…

> **a)** PSI output (with units label)
>
> "***0001xxx.xxxxpsia<CR><LF>**"

> **b)** Bar Output (with units label)
>
> "***0001xx.xxxxxbar<CR><LF>**"

(If the above is sent with no units label then <u>psi</u> data will be assumed)

CONFIGURING SEAKING COMMS BOARD FOR AUX SERIAL I/O

1. Before opening the Sonar head to access the Comms board jumpers, using the 'Seanet Setup' utility program configure the following check box settings. These are needed to enable the 'Aux' port;

   a) Open the 'Seanet Setup' program and ensure that **Node 2** is detected in the table.

   b) Click on the **Action** column for Node 2 and then select **Setup**, as shown…

   c) In the Sonar Setup panel, ensure that the '**Has Aux or Compass**' check box is enabled.
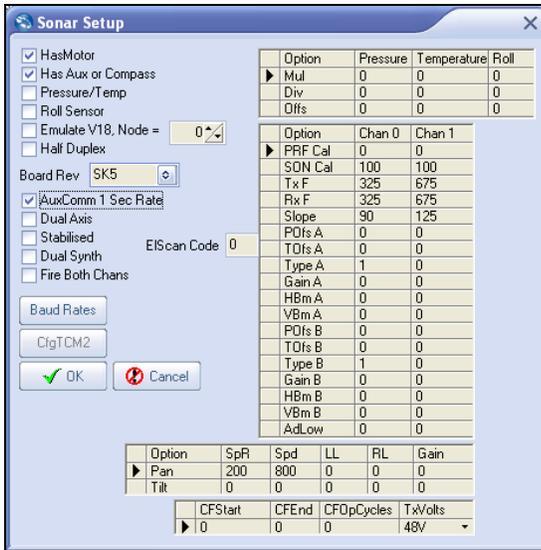
   <u>N.B.</u> If the '**AuxComm 1 Sec Rate**' check box is disabled, the Sonar will try to send up all data collected through it's auxiliary port. Please be aware that if the quantity and rate of this data is too great then the interface may hang up.

d) From here press the Baud Rates Button...

…Check Baud rates on **Async 1 (AUX)** match the device output (default DigiQuartz output is 9600 baud).

2. Now change the jumper settings on the Comms board inside the Head. In the SeaKing head, this must be a COMDV3/FV3, COMGV3/V5 or a COMV5 Mod-A board.

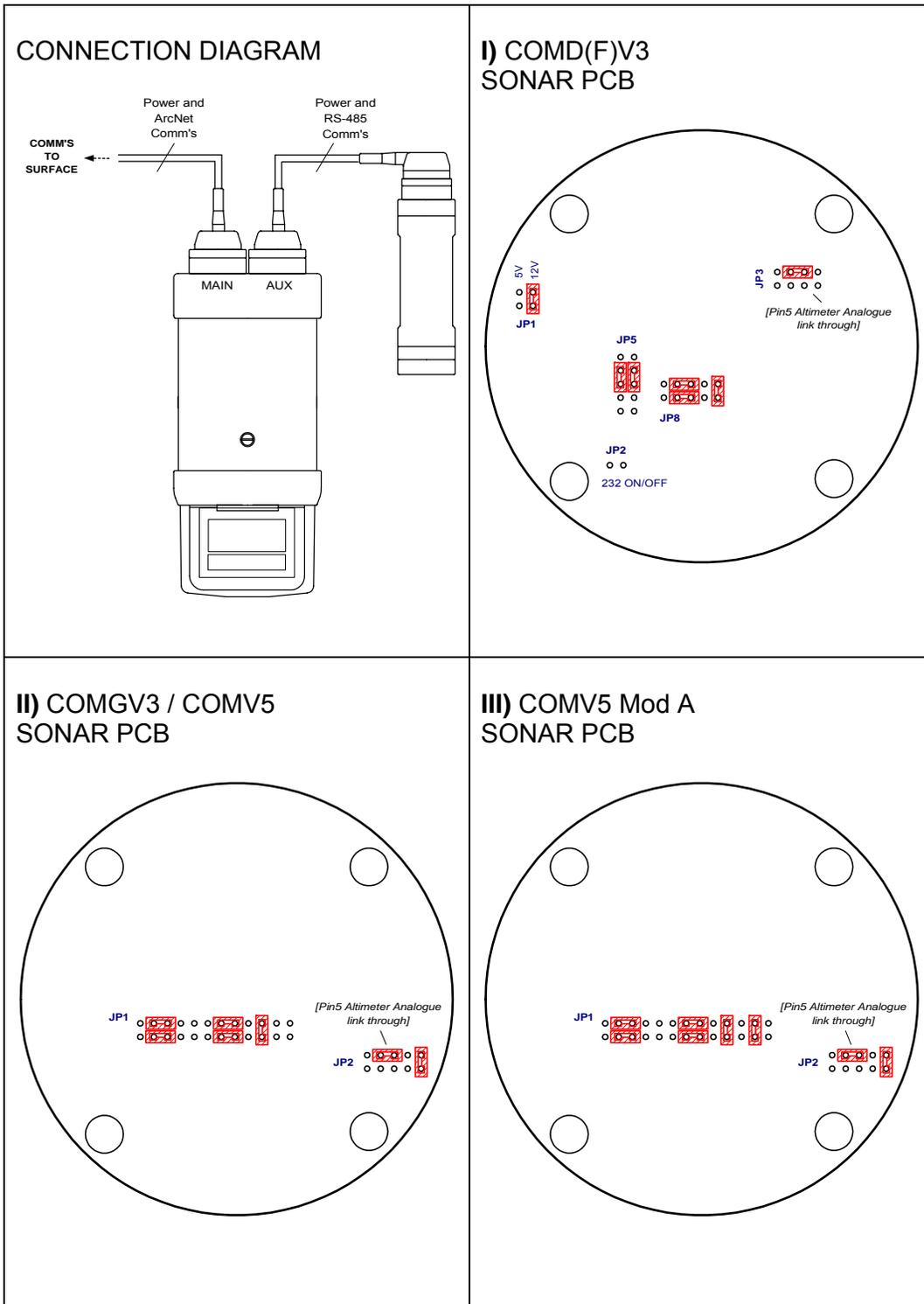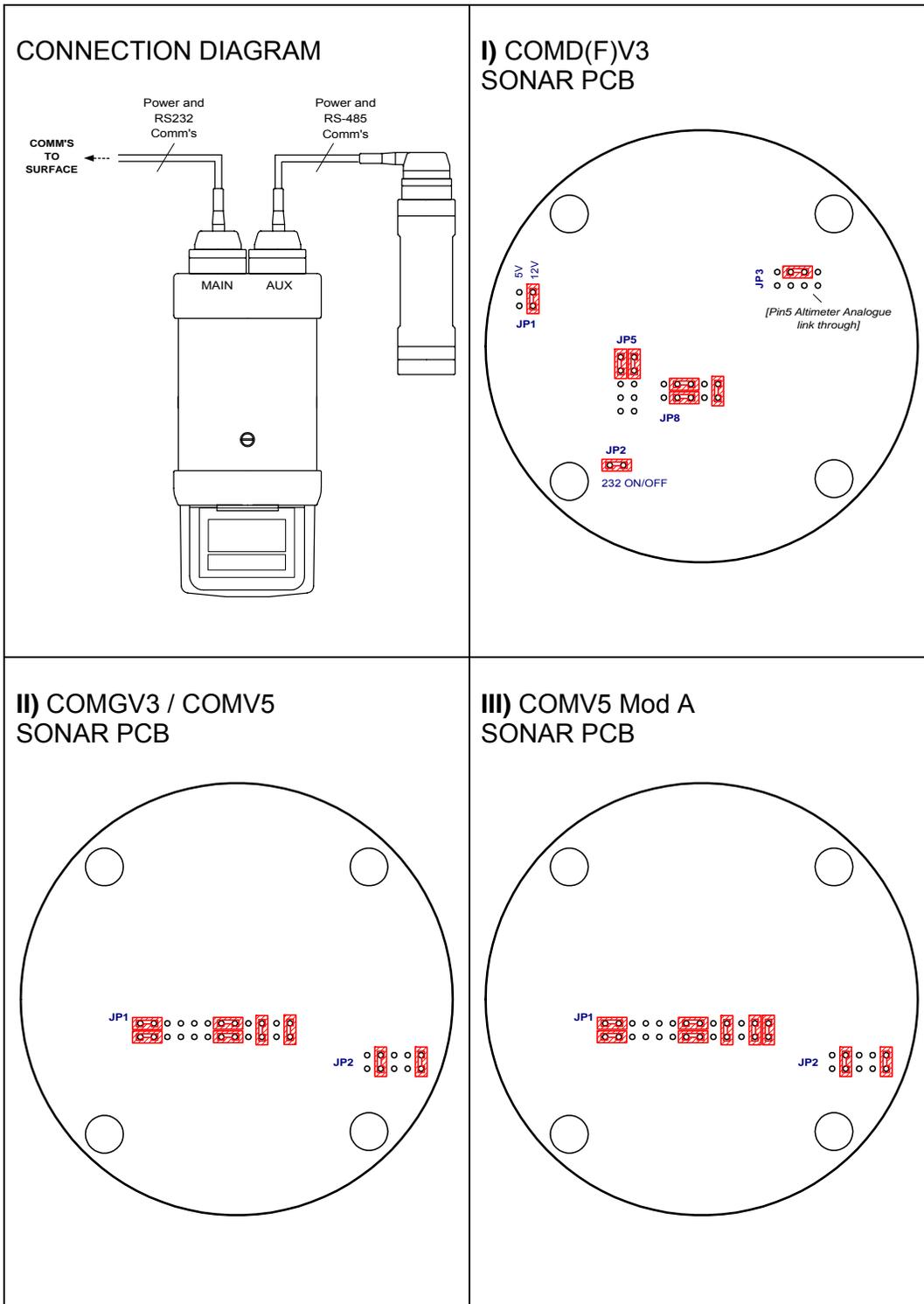The jumpers should be set as follows - refer to the option that suits your configuration.

<< See the 4 options that now follow >>

⚠️ **Caution!**	*Ensure that the sonar Aux port is fitted with a Water Block connector.*

OPTON1: ARCNET SONAR WITH RS-485 AUX PORT
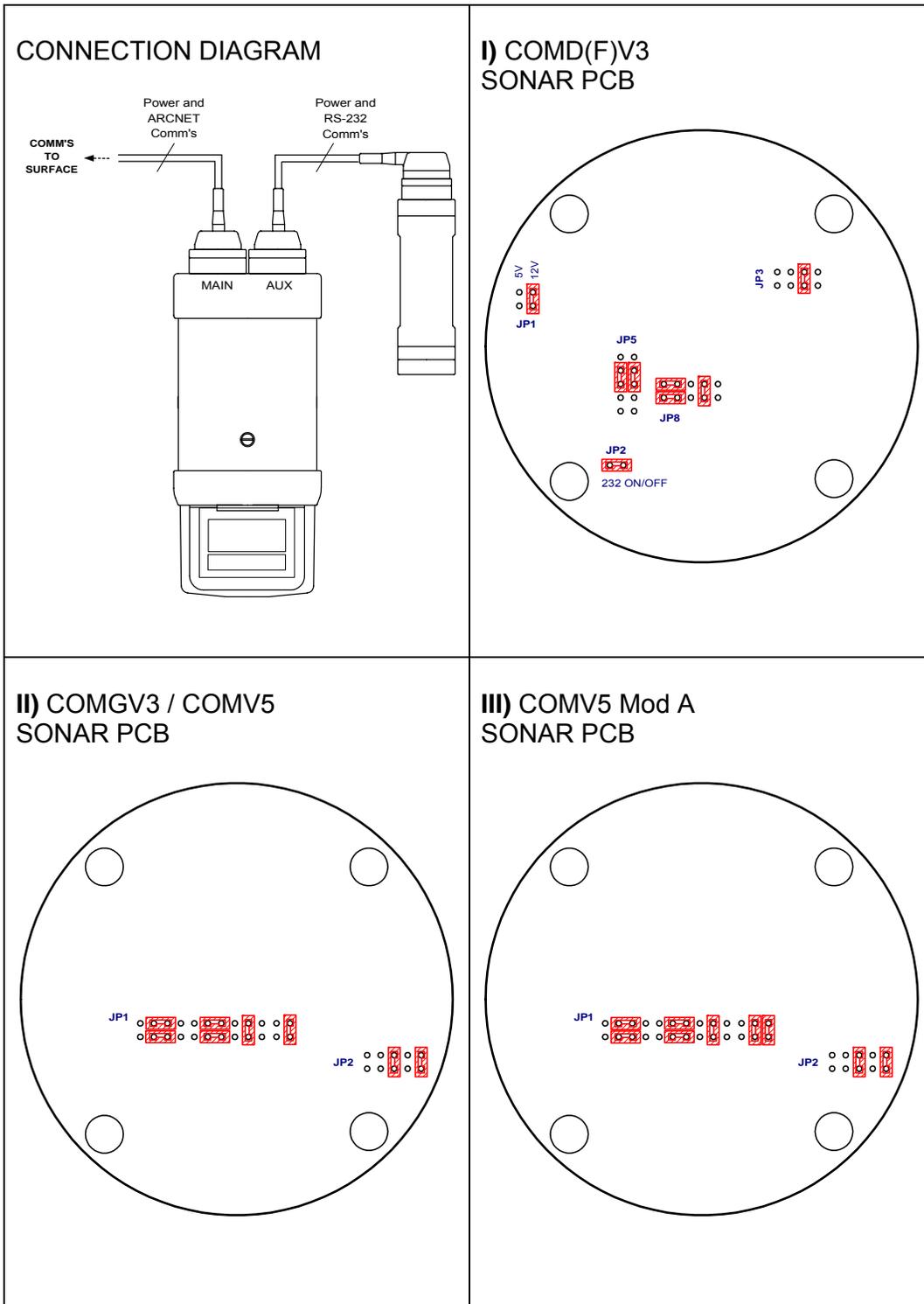

N.B. The 'Pin 5 Altimeter Analogue link through' is shown for purposes of connecting a PA Altimeter to the Aux Port. The diagram depicts PA Altimeter not DigiQuartz.
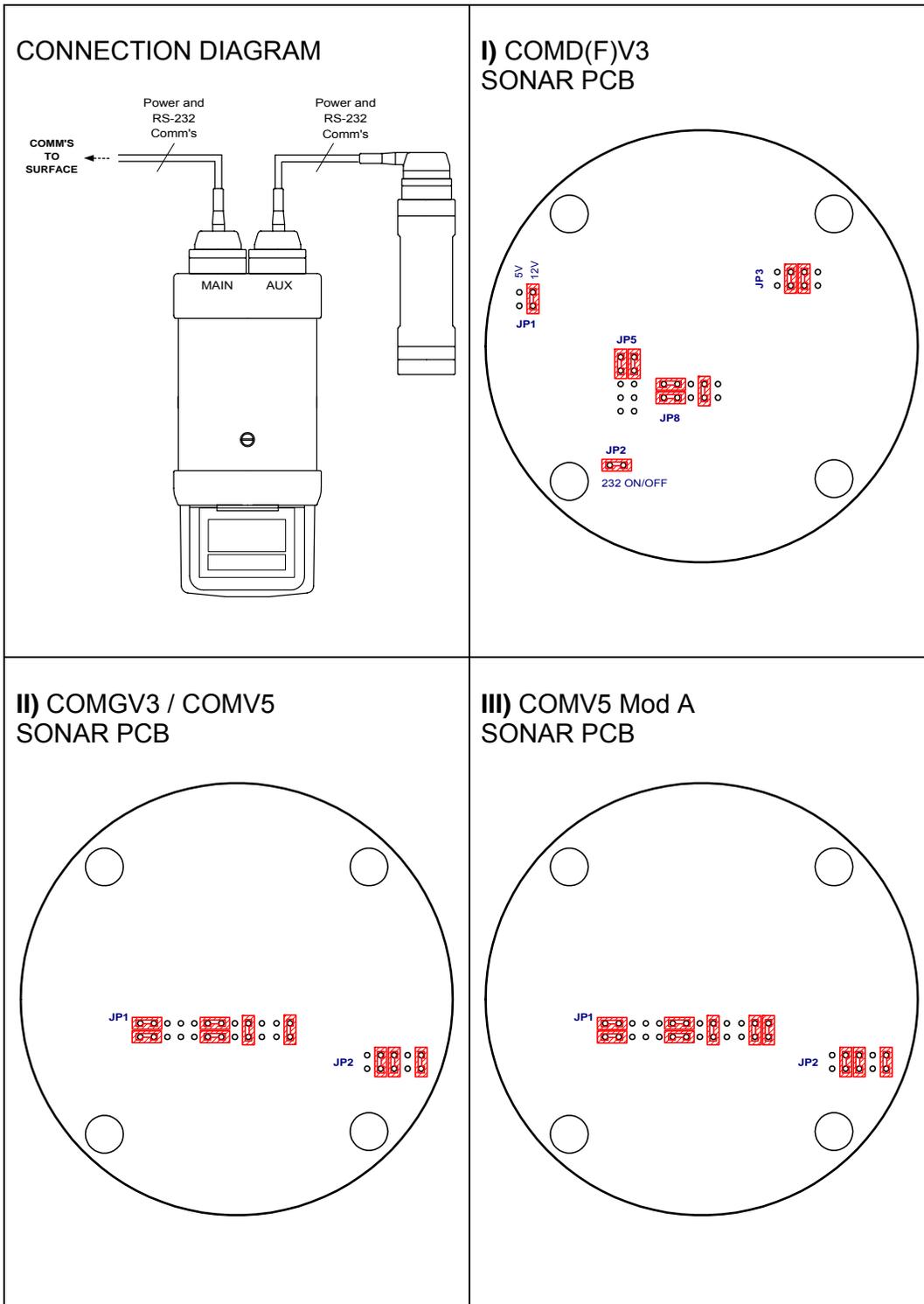
OPTON2: RS-232 SONAR WITH RS-485 AUX PORT

CONNECTION DIAGRAM

I) COMD(F)V3 SONAR PCB

II) COMGV3 / COMV5 SONAR PCB

III) COMV5 Mod A SONAR PCB

N.B. The 'Pin 5 Altimeter Analogue link through' is shown for purposes of connecting a PA Altimeter to the Aux Port. The diagram depicts PA Altimeter not DigiQuartz.

OPTON3: ARCNET SONAR WITH RS-232 AUX PORT

CONNECTION DIAGRAM

I) COMD(F)V3 SONAR PCB

II) COMGV3 / COMV5 SONAR PCB

III) COMV5 Mod A SONAR PCB

N.B. The diagram depicts PA Altimeter not DigiQuartz.

OPTON4: RS-232 SONAR WITH RS-232 AUX PORT

CONNECTION DIAGRAM	**I)** COMD(F)V3 SONAR PCB

| **II)** COMGV3 / COMV5 SONAR PCB	**III)** COMV5 Mod A SONAR PCB

N.B. The diagram depicts PA Altimeter not DigiQuartz.

SOFTWARE SETTINGS

Once the Sonar head has been correctly configured with the Diqiquartz connected, power up the system and run the main Seanet application software. N.B. Ensure that the 'Seanet Setup' program is closed down first.

Then, when running a Sonar application and recognised DigiQuartz data is received via the Sonar Aux Port a display box will appear on the Sonar Settings Bar. This is where the DigiQuartz data will be displayed…

Display of DigiQuartz data on Sonar Settings Bar.
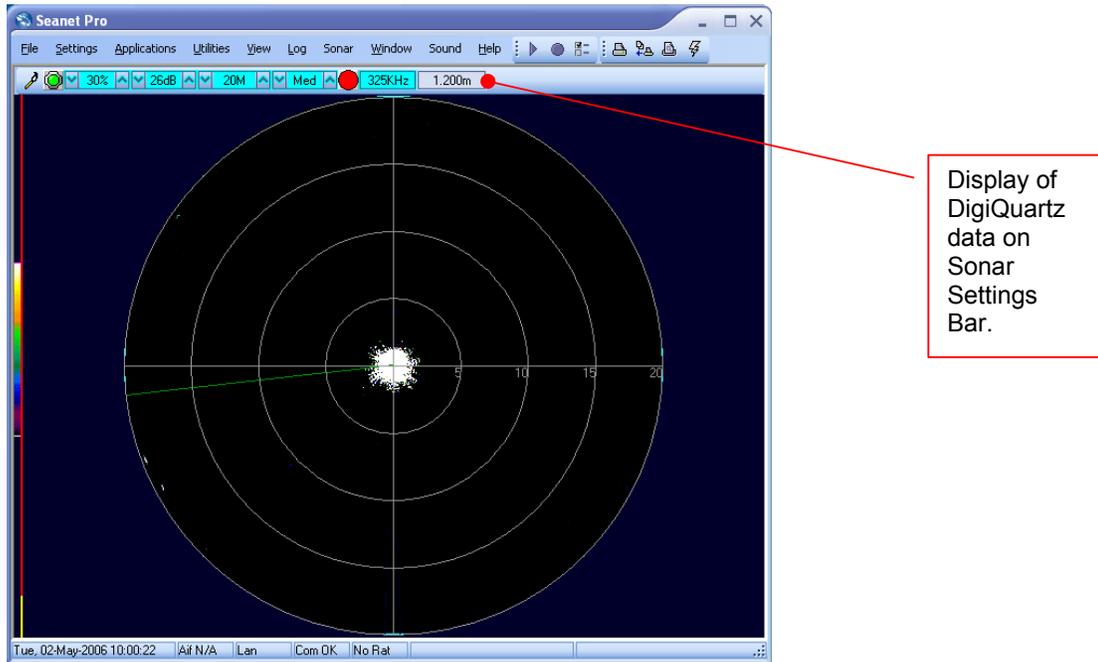
N.B. The DigiQuartz data will be logged along with Sonar data and will be displayed during later playback of the log file.

REGIONAL SETTINGS and AUX data

It has been noted that Windows regional settings can prevent the flow of AUX data through the system.
If the Aux device is connected correctly and operating but no data is displayed on the screen then the Regional settings may be preventing Seanet Pro from processing the data.

In the Windows Control Panel open REGIONAL & LANGUAGE OPTIONS.
Set the drop down list to "English(United Kingdom)"
Press OK for the changes to take effect.
Restart the Seanet Pro MiniKing software and check whether the AUX data is now displayed.

If you wish to continue using your local settings then open REGIONAL & LANGUAGE OPTIONS.
Set the region to the desired setting.
Now press the "Customize" button and ensure that the DECIMAL SYMBOL is set to a "**.**"