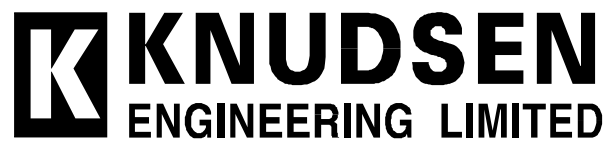


CHIRP 3260 ECHOSOUNDER
TROUBLESHOOTING AND MAINTENANCE MANUAL

D101 - 04999
Revision 1.0



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1 INTRODUCTION

1.1 About this manual

This manual provides troubleshooting and maintenance for the Chirp 3260 echosounder. It is advisable for all users to become familiar with the relevant sections in this manual to ensure that the echosounder is used to its optimum capability.

Please note that the Chirp 3260 echosounder contains modules that can generate several hundred volts at the secondary of the output transformer. Extreme care and proper understanding is required upon removal of the protective covers and exposure to these modules.

1.2 Technical Support

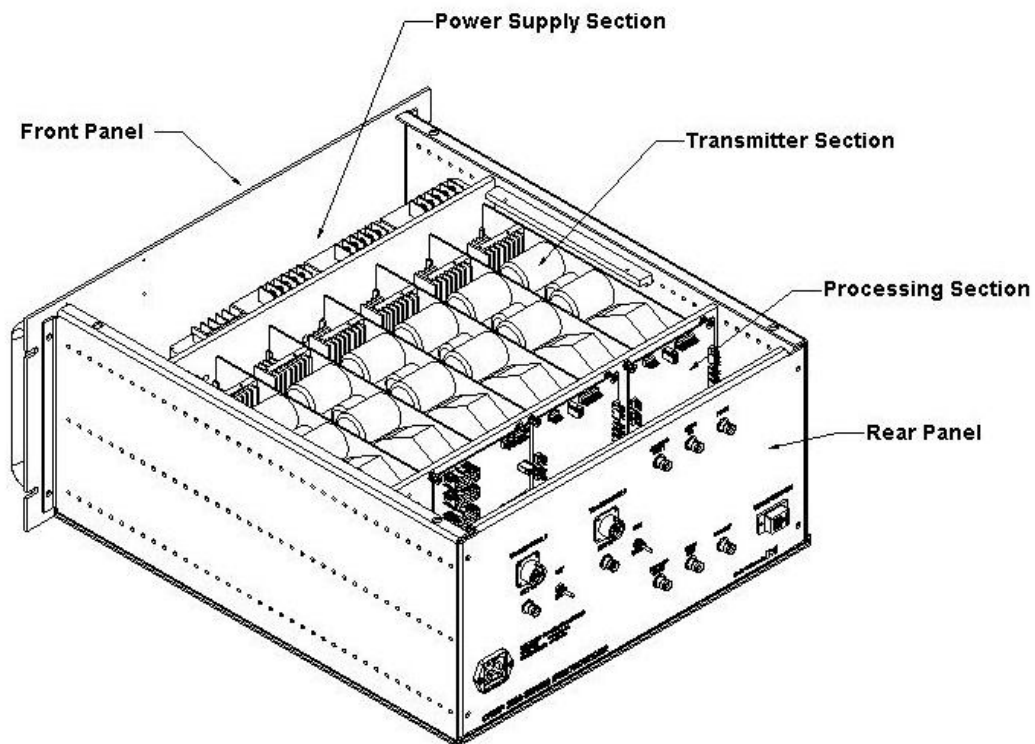
For technical support or to report problems please contact your local representative or:

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2 CHIRP 3260 BREAKDOWN

For the purpose of this manual the Chirp 3260 will be broken down into five sections. They are the Front Panel, The Power Supply Section, The Transmitter Section, the Processing Section, and the Rear Panel. Figure 1 shows the location of each section within the Chirp 3260 echosounder.



NOTE: system shown with cover plate and fan plate removed.

Figure 1 - Chirp 3260 Breakdown

3 TROUBLESHOOTING

3.1 System Appears Dead

If the system is totally lifeless, start by examining for obvious problems. Confirm that the AC supply voltage cable is properly connected. If you turn on the System Power switch on the front panel and the light does not activate it could be that the bulb or fuse has blown or a failure has occurred inside the Chirp 3260.

3.1.1 Fuse Check

There is a main power input fuse located within the AC Input header on the Rear Panel. With the System Power switch turned off the fuse can be removed and inspected. If the fuse is found to be blown there may be a spare located in the spare fuse compartment. If the spare fuse is removed please replace for future use. The fuse is a 2A, 250V slo-blo type.

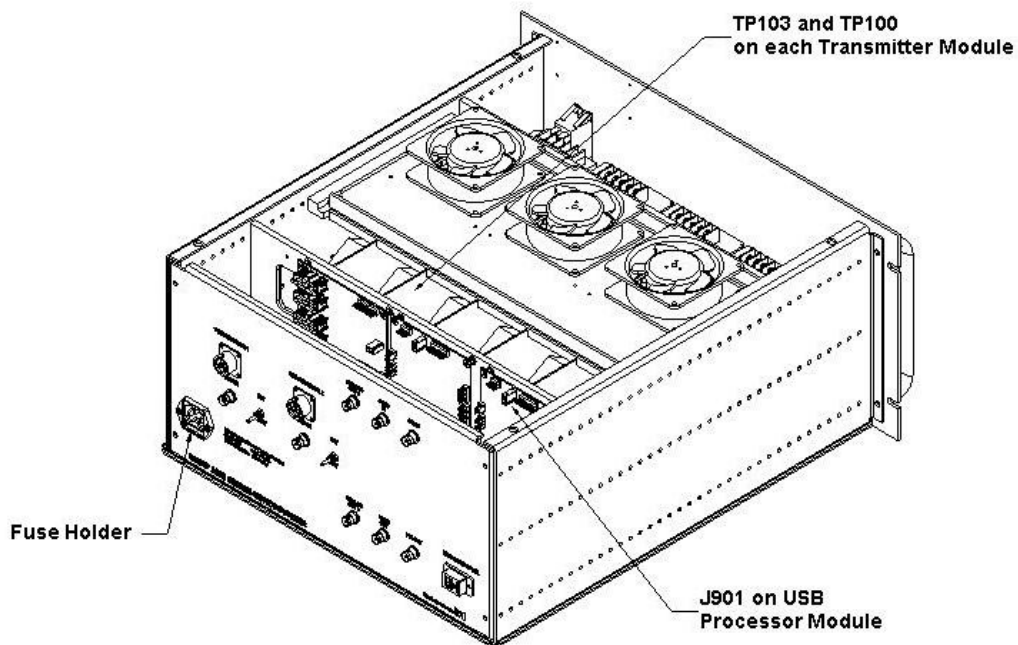


Figure 2

3.1.2 Voltage Checks

The AC supply voltage to the Chirp 3260 is fed to four AC to DC voltage converters in order to create the DC supply voltages for the internal modules. The three larger voltage converters (48V each) combine to create the 144V rail voltage used by the bank of high power transmitter modules. The fourth voltage converter supplies a 24V rail that is used to power all the modules in the Processing Section. Using a multimeter you can measure these voltages at the following test points. Leave the System Power switch on the Front Panel engaged, but do not activate the transmit for the tests.

144V: Between TP103 and TP100 located on the back side of any Transmitter Module (See Figure 2)

24V: J901 of the USB Processing Module (See Figure 2)

3.1.3 FET Checks

If all the fuses check out fine and all voltages are present and the Chirp 3260 does not seem to be transmitting to the transducers upon activation, there could be a MOSFET failure on a transmitter module. In order to check if a MOSFET has failed you will need to remove the module (See Figure 3). Prior to removing of a transmitter module please turn the system completely off and leave it for a couple of minutes to ensure drainage of stored capacitor voltages.

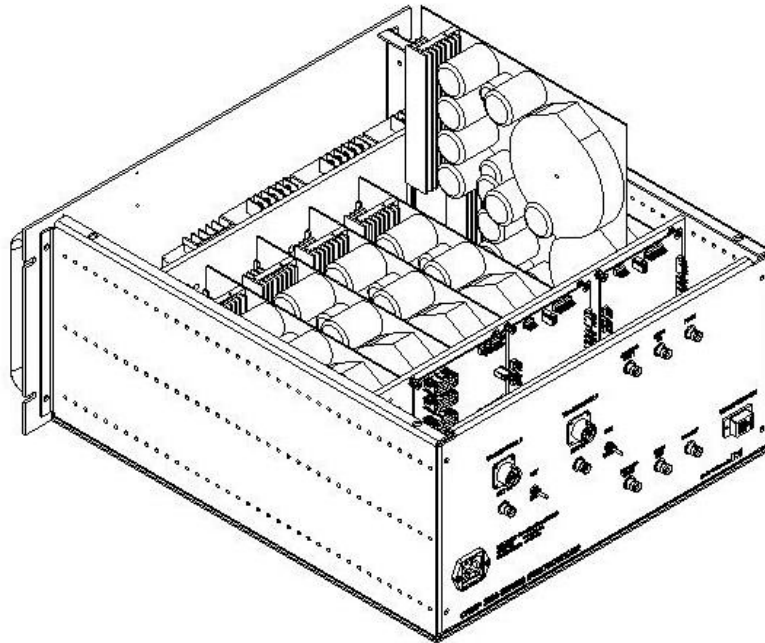


Figure 3 - Transmitter Removal

With the fan plate removed from the system you will find that each transmitter module is installed in a backplane configuration. With the capacitor bank drained the transmitter module(s) can be pulled straight up and out of the backplane sliding on the card guides.

There are four MOSFETS installed on the heatsink of the transmitter module. The first check if a MOSFET has failed is a visual one. Check for damage to the face of each MOSFET. If there is no visible damage, use a multimeter to measure the resistance between the two outside pins (1 and 3). If you measure a high reading (2-3Mohms), the part is fine. If you measure a low reading (less than 100ohms), that part has failed and will need to be replaced. At this time please contact the factory for further assistance.

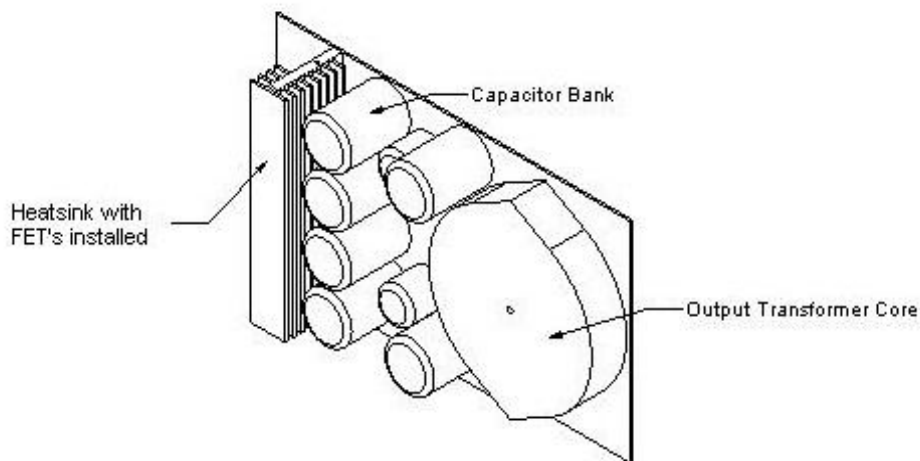


Figure 4 - Transmitter Module

3.2 Communication Issues

If you are having problems with the EchoControl software applications communicating with the Chirp 3260 echosounder, the problem may be in one of three areas. 1) The external USB connection, 2) internal USB Hub, or 3) the installed drivers.

3.2.1 External USB

If upon running of the EchoControl Client or Server software applications on the host PC you experience an error stating “no USB devices found” please ensure that the Chirp 3260 echosounder is powered on and that the external USB connection on the Rear Panel is solid and secure. If the problem continues please try another possible USB cable or USB port on the host PC.

3.2.2 Internal USB Hub

Each channel of the Chirp 3260 echosounder contains an individual USB Processor Module. All the installed USB Processor Modules are connected to an internal USB hub. This hub is then connected to the USB input on the Rear Panel and then onto the host PC. If one or more of the installed modules is not being recognized by the EchoControl software application there could be an issue with the internal USB Hub. If not all four of the USB input headers (J201-J204) are being used the channel that is having communication issues could be reconnected to an available header.

3.2.3 Drivers

Under the Device Manager please ensure that all of the installed channels are being shown as a KEL Sounder Module and have a red “K” icon. If not please right click on the selected driver and re-install the driver from the SounderSuite folder on the host PC (default location C:\Program Files\SounderSuite-USB).

4 MAINTENANCE

4.1 Performance Checks

As part of a regular maintenance plan the Chirp 3260 can be interfaced with a Knudsen EchoSim signal simulator. Using the EchoSim will allow checking of the Chirp 3260 transmitting and receiving capabilities. Regular checks of the overall system output power will help determine if one or more of the transmitter modules are not performing at their maximum potential.

The EchoSim will also measure the transducer (or transducer array) impedance at user selected frequency intervals. This check will help locate a possible aging or possibly failed transducer.

For more information on the Knudsen EchoSim visit website or email sales@knudsenengineering.com.

4.2 System Cleaning

4.2.1 Fan Cleaning

Depending on the location of the Chirp 3260 installation it is recommended to routinely remove the top cover of the unit and clean the three cooling fans.

4.2.2 Contact Cleaning

It is always a good idea to clean the contacts of the internal connections on a regular basis. Any build up of corrosion on these contacts could affect the performance of the Chirp 3260.