

INTRODUCTION

The 1002366 board is used to process the transport stream after satellite demodulation and before QAM modulation. It enables the FIXED CLOCK mode of operation (AUTO CLOCK mode is still selectable), performs PCR correction, and it also provides an ASI output of the demodulated transport stream.

TRANSPORT STREAM PROCESSING

The transport stream processing feature of the 1002366 board will add null packets if the SCT860 is set to the FIXED CLOCK mode and the demodulated transport stream data rate is less than the rate set as the fixed output rate. The 1002366 can also drop extra null packets from the transport stream when required to obtain the desired output rate.

The standard SCT860 does not modify the transport stream - Drake labels this mode the 'AUTO CLOCK' mode as the output rate is automatically determined by the received input signal data rate. When the SCT860, with the 1002366 installed, is set to the AUTO CLOCK mode setting, it operates as if the board were not installed; the null packets will not be processed and neither dropping or adding will occur.

The 1002366 option board must be installed into the SCT860, and the SCT860 firmware must be updated, in order to activate the FIXED CLOCK mode. The null packet processing functions are enabled in the FIXED CLOCK mode. The AUTO CLOCK mode can still be selected in the menu.

When the SCT860, with the 1002366 board, is set to the FIXED CLOCK setting, all null packets will be dropped from the demodulated transport stream. The rate is then built back up, by adding

null packets, to the fixed output QAM symbol (baud) rate that is set via the front panel. Dropping null packets is required in some cases in order to bring the rate down to or below the desired rate when the satellite uplink may add extra null packets.

PCR CORRECTION

The SCT860 performs PCR correction on the processed transport stream before QAM modulation when the SCT860 is used with the 1002366 option and is set up in the FIXED CLOCK mode. No PCR adjustments are made when the unit is set to the AUTO CLOCK mode.

ASI OUTPUT

The 1002366 option board also adds an ASI transport stream output connector to the SCT860. A chassis mount type BNC connector with coaxial cable is provided for those who have a requirement for this feature. The ASI output will be the demodulated satellite signal transport stream output, without processing. It is provided in DVB ASI format.

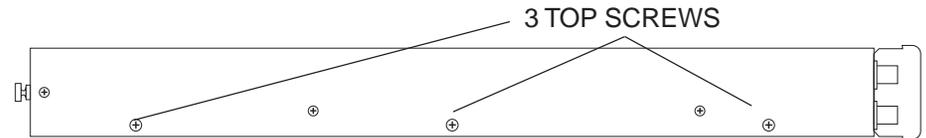
This output may be used to feed the satellite signal transport stream to a multiplexer where part of the stream may be needed for remultiplexing with another stream for another output channel.

If ASI output is not a requirement, place the connector assembly in a storage location for possible future use.

If the ASI output feature is desired, plug in the supplied BNC connector cable to the SCT860 PC board as indicated in Figure 3 and mount the BNC connector in the rear panel mounting hole. If your SCT860 does not have this hole, it must be added. The unit can be returned to the Drake Service Department, if necessary, for this installation.

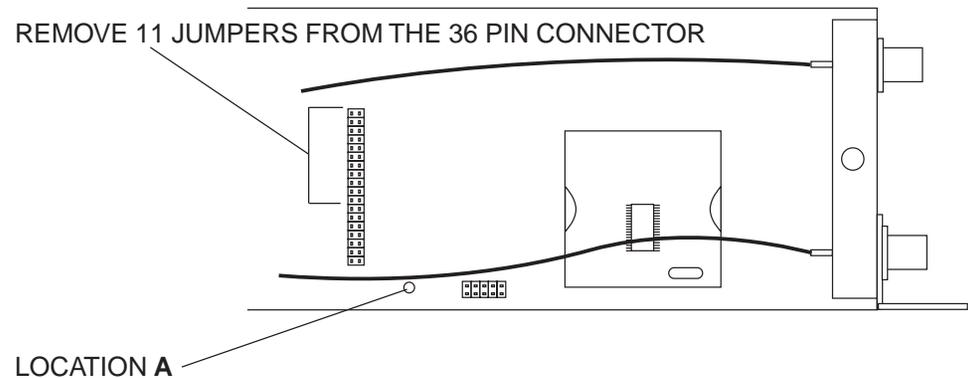
INSTALLATION IN THE SCT860

Looking at the SCT860 from the front panel, observe the right side of the unit. Remove the three top screws as shown, three side screws, and three bottom screws holding the right side of the case.



Remove the right side and then lay the transcoder on a flat surface laying on its left side.

Locate the 36 pin interface connector and remove the 11 jumpers that are in place. Keep these jumpers for future use in case the 100-2366 board is ever removed.



Remove the original screw at location A. Screw the standoff spacer, that is included with the option board, into the hole at location A. Carefully remove the 100-2369 board from its static protection package. Position the board as indicated and plug it into the 36 pin connector.

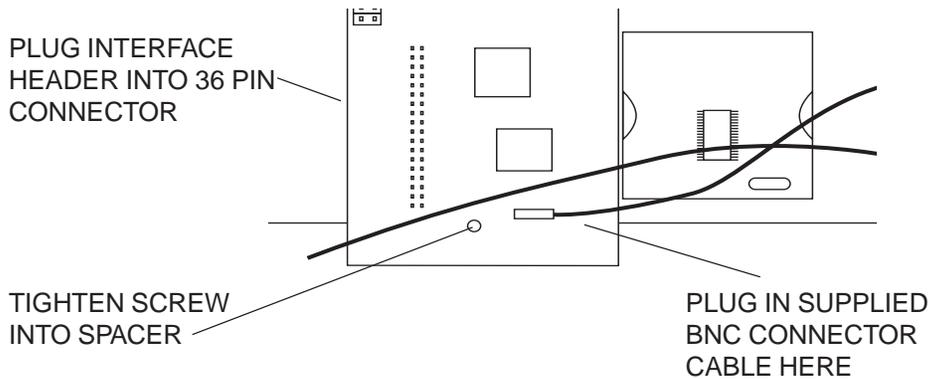


FIGURE 3

Reinstall the screw to fasten the Option Board to the spacer. Replace the right side cover and screws.

OPERATION

Follow the instructions in the SCT860 instruction manual. Now that the 100-2366 board is installed, the FIXED clock option may be selected and the output BD RATE (baud rate which is the symbol rate) may be set. The original AUTO clock mode is still selectable, if desired.

UPDATE FIRMWARE

In order for the fixed clock option, provided by the 1002366 board, to operate in the SCT860, it is necessary to change the firmware in the SCT860 to the fixed clock version. Unless your SCT860 was ordered from the factory with the 1002366 board installed, you will need to download the correct firmware to the SCT860. This will be accomplished by means of the RS232 PC interface on the PS100 power supply. The fixed clock firmware is provided on the enclosed diskette.

Once the fixed clock firmware and the 1002366 board have been installed, either the fixed clock mode or the auto clock mode may be chosen from the SCT860 menu. Installation of the board and firmware does not prevent use of auto clock mode if desired.

1) Check current firmware version by pressing the front panel up arrow button while the SCT860 is not in the adjust mode. Read the version number. If you see VERSION 1.3, VERSION 1.4, or an earlier version without an F after the number, this is auto clock mode only firmware and must be upgraded for the 1002366 board to function. If you see VERSION 1.4A or higher with an "A" suffix, this is also auto clock firmware and must be replaced with the fixed clock version. The 1002366 board can be installed with the auto versions of the firmware in place and the SCT will function as before in the auto clock mode. No access to fixed clock mode will be possible. If you see VERSION 1.4 F or a later version with an F suffix, you already have the correct firmware (highly unlikely unless the 1002366 board is already in place because use of the 'F' firmware without the 1002366 board is not allowed).

- 2) Copy the two files from the diskette included with the 1002366 board kit into the folder on your PC where the SCT860 Control Program was installed. If you did not change the setting upon installation, this folder should be: **C:\Program Files\Drake SCT860**. Copy both the **Fixed Version 1.4 or higher hex** file for use with the 1002365 and also the **Auto Version 1.4 or higher hex** file for use if the 1002366 board is ever removed from the SCT. These files may also be found on V 1.4 or higher of the SCT860 Digital Headend Transcoder Remote Control Software CDROM.
- 3) If you do not have the diskette or V 1.4 or higher CDROM, referenced above, you may use files found on the V 1.2 or V 1.3 CDROM, but these are not the latest versions. If using files from these older CDROMs, select the V 1.x **fixed** file. When these files are used, the F will not display on the front panel when the firmware version is checked – therefore, we discourage the use of these older versions unless these are the only available option at hand. Look for the presence of the **CLOCK** selection menu to confirm that the older fixed version of the firmware is loaded after downloading.

- 4) Set up SCTs for download acceptance: For all SCT860s to be up graded, press the UP, LEFT, and ENTER buttons simultaneously for 2 seconds until the displays read: LOADING PROGRAM. This can apply to all SCTs connected for remote control, if desired, however – **DO NOT DOWNLOAD THE FIXED CLOCK FIRMWARE TO SCTs THAT DO NOT HAVE THE 1002366 BOARD INSTALLED.** In many installations, only one SCT will need to be loaded with the fixed clock firmware.
- 5) On the PC, run the SCT860 Control Program. On the opening screen, select from the top menu line the **Tools** selection. Then select **Down load Firmware...** In the new window that opens there is a selection box listing all of the files available for download. For use with the 1002366 board, select **Fixed Version 1.4 or higher hex** from the list. Select the comm Port that you are using on your PC and then select **Start** to begin the download.
- 6) When finished, the units will reset themselves. Press the UP arrow button on each unit to confirm that **VERSION 1.4F or higher** is now installed.
- 7) If it is ever desired to remove the 1002366 board and replace the original factory installed jumpers, you must download the Auto Version firmware to the SCT.

If additional SCTs, not being up graded with the 1002366 board, currently have firmware below Version 1.4, you may wish to download the latest version. In this case you will need to perform a second download operation, selecting only these SCTs, and download the **Auto Version 1.4 or higher hex** file to those units. Updates from previous versions include: revised/limited acquisition range, correction of a DVB 256QAM interleave setting, and a few other minor adjustments (depending on your current version).

OPERATION

Follow the instructions in the SCT860 instruction manual. Now that the 1002366 board is installed, the FIXED clock option may be selected and the output BD RATE (baud rate which is the symbol rate) may be set. The original AUTO clock mode is still selectable, if it is desired.

SERVICE INFORMATION

You may contact the R.L. DRAKE Service Department for additional information or assistance by calling +1 (937) 746-6990, Monday through Friday, between 8:00 A.M. and 4:00 P.M. Eastern Time, except on holidays.

You may also contact the R.L. DRAKE Service Department by E-mail at the following address: TechSupport@rldrake.com or by Telefax: +1 (937) 743-4576.

IF YOU NEED TO CALL FOR HELP

Call our Customer Service/Technical Support line at +1 (937) 746-6990 between 8:00 A.M. and 4:00 P.M. Eastern Time, weekdays. Please have the unit's serial number available. We will also need to know the specifics of any other equipment connected to the unit. When calling, please have the unit up and running, near the phone if possible. Our technician(s) will likely ask certain questions to aid in diagnosis of the problem. Also, have a voltmeter handy, if possible.

R.L. DRAKE also provides technical assistance by e-mail: TechSupport@rldrake.com or by Telefax: +1 (937) 743-4576.

Many of the products that are sent to us for repair are in perfect working order when we receive them. For these units, there is a standard checkout fee that you will be charged. Please perform whatever steps are applicable from the installation sections of the Owner's Manual before calling or writing—this could save unnecessary phone charges. Please do not return the unit without contacting R.L. DRAKE first: it is preferred to help troubleshoot the problem over the phone (or by mail) first, saving you both time and money.

Inside the carton, enclose a note with your name, address, daytime phone number, and a description of the unit's problem.

The unit must be sent to the following address:

**Service Department
R.L. DRAKE COMPANY
230 Industrial Drive
Franklin, Ohio 45005 U.S.A.**

Be sure to include your street address which will be needed for UPS return. UPS Surface (Brown Label) takes 7-10 days to reach us depending on your location, Blue takes 2-3 days.

Should you want to return your unit for service, package the unit carefully using the original carton or other suitable container.

Write your return address clearly on the shipping carton and on an enclosed cover letter describing the service required, symptoms or problems. Also include your daytime telephone number and a copy of your proof of purchase.

The unit will be serviced under the terms of the R.L. DRAKE COMPANY Limited Warranty and returned to you.

Red is an overnight service. Send the unit in a way that it can be traced if we can't verify receipt of shipment. We suggest UPS or insured postal shipment.

If the unit is still under the original owner's warranty, R.L. DRAKE will pay the cost of the return shipment to you. Our return shipping policy is that we will return it UPS Brown if received Brown or by US Mail, it will be returned Blue if received Blue or Red—or it will be returned however you prefer if you furnish the return cost for the method you select.

If the unit is out of warranty, use one of the following methods for return shipment:

- 1) You designate billing to American ExPress, VISA, MasterCard or Discover card;
- 2) You prepay the service charges with a personal check, or
- 3) You specify some other method of return and payment.

When calling, the technician can estimate the repair charges for you over the phone. This is another good reason to call before sending a unit in for repair. Typically, equipment is repaired in five to ten working days after it arrives at R.L. DRAKE if we have all the facts. If we must call you, it may take longer. R.L. DRAKE is not responsible for damage caused by lightning, nonprofessional alterations, "acts of God", shipping damage, poor storage/handling, etc. R.L. DRAKE will make note of any shipping damage upon receipt.

You will need to send proof of purchase to receive warranty service. Typically, a copy of the invoice from an R.L. DRAKE dealer will suffice. The warranty is for the original owner only and is not transferable.

THREE YEAR LIMITED WARRANTY

R.L. DRAKE COMPANY warrants to the original purchaser this product shall be free from defects in material or workmanship for three (3) years from the date of original purchase.

During the warranty period the R.L. DRAKE COMPANY or an authorized Drake service facility will provide, free of charge, both parts and labor necessary to correct defects in material and workmanship. At its option, R.L. DRAKE COMPANY may replace a defective unit.

To obtain such warranty service, the original purchaser must:

- (1) Retain invoice or original proof of purchase to establish the start of the warranty period.
- (2) Notify the R.L. DRAKE COMPANY or the nearest authorized service facility, as soon as possible after discovery of a possible defect, of:
 - (a) the model and serial number,
 - (b) the identity of the seller and the approximate date of purchase; and
 - (c) A detailed description of the problem, including details on the electrical connection to associated equipment and the list of such equipment.
- (3) Deliver the product to the R.L. DRAKE COMPANY or the nearest authorized service facility, or ship the same in its original container or equivalent, fully insured and shipping charges prepaid.

Correct maintenance, repair, and use are necessary to obtain proper performance from this product. Therefore carefully read the Instruction Manual. This warranty does not apply to any defect that R.L. DRAKE COMPANY determines is due to:

- (1) Improper maintenance or repair, including the installation of parts or accessories that do not conform to the quality and specifications of the original parts.
- (2) Misuse, abuse, neglect or improper installation.
- (3) Accidental or intentional damage.

All implied warranties, if any, including warranties of merchantability and fitness for a particular purpose, terminate three (3) years from the date of the original purchase.

The foregoing constitutes R.L. DRAKE COMPANY'S entire obligation with respect to this product, and the original purchaser shall have no other remedy and no claim for incidental or consequential damages, losses or expenses. Some states do not allow limitations on how long an implied warranty lasts or do not allow the exclusions or limitation of incidental or consequential damages, so the above limitation and exclusion may not apply to you.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state. This warranty shall be construed under the laws of Ohio.



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