INTRODUCTION

The SCT series of transcoders and also the DQT861 and MQM861 products provide for remote monitoring and control. This is accomplished via a RS232 data connection between the controlling PC and the units. The SCT transcoder data connection is made via the transcoder power supply unit. The DQT and MQM861 units have the data connectors on the rear of the unit. This Digital Headend Control Software will be installed on a PC to provide the necessary user interface. This software is designed to run on PCs with a Windows (95 through XP) operating system.

The RS232 remote control data interfaces, consist of one DB9 data input connector and one DB9 output connector, located on the rear panels. The PC or modem is connected to the RS232 data input connector on the SCT power supply or the DQT/MQM861. The data for the SCT transcoders is then passed to and from each SCT transcoder via the power cables connecting each transcoder to the power supply. Up to 10 transcoders can be controlled with a single connection to one PS150 or PS151 (or up to 6 SCT860s with a PS100). The DQT/MQM861 units are all self contained. When more than one tray of transcoders is installed, or when DQTs or MQMs are also present, the data connection can simply be looped through all associated PS100, PS150, and PS151 power supplies and the DQT861s and MQM861s to pick up all of the transcoders. The maximum number of SCT860s that can be controlled as one headend via a single RS232 connection is 63. The maximum number of SCT1860, SCT2860, SCT3860, SCT4860 transcoders is 70 per headend. The maximum number of DQT861s and MQM861s is 63.

It is possible to store files on your PC for more than one headend. Each headend file can contain its specific parameters, connection type, dial-up number, password, etc. Thus, one PC can be used to control multiple headend locations.

The PC may be connected directly to the PS100, PS150, PS151, DQT861, or MQM861 RS232 input DB9 connector via a standard serial data cable. If the control and monitoring is to be from a remote site using a dial-up telephone line, modems may be used to make this connection. If using a modem, a null modem cable is required.

Here are the major issues to be addressed in order to set up your remote monitoring and control:
■ Assigning UNIT ID numbers.
■ Installing the Drake Digital Headend Control Program on a PC.
■ Setting up a remote modem if a modem connection will be used.
■ Setting up your headend file or files.
■ Connecting to a Headend.
■ Setting a password, if desired.

A FEW WORDS ABOUT UNIT ID NUMBERS

In order to view settings or control a transcoder, it must be assigned a unique UNIT ID address in the desired headend. The SCT1860/2860/3860/4860 series of transcoders uses a system where the connected PS150 or PS151 is assigned a number from 1 to 7 and the 10 transcoders connected to that supply are automatically assigned a number between 1 and 10 determined by which socket they are connected to on the power supply. This results in an ID number such as 7-10. The PS unit ID is set via the PS150/PS151 front panel buttons. You cannot have more than one transcoder with the same ID. If the PS unit ID is set to 0, the transcoders connected to that supply will not be seen or addressed by the remote control software - control must be from the power supply panel.

The unit ID for DQT861 or MQM861 units is set from the front panel. See the instruction manual

INSTALLING THE PC SOFTWARE

To install the control software, place the CDROM in the PC CDROM tray. The auto run routine should produce a menu providing three selections:
1) Install SCT Control Program.
2) View various instruction manuals.
3) Install Adobe Acrobat Reader
To install the control software, choose the "Install SCT Control Program" option. If the CDROM does not start automatically, Click on the "My Computer" icon on your PC desktop, then click on the CDROM drive icon. To install the program, click on the **setup.exe** file on the CDROM. Follow the prompts and when the program has been installed successfully, the "DRAKE DIGITAL, R.L. Drake SCT Control Program" icon will appear on the PC desktop.

SETTING UP A REMOTE MODEM

If a pair of modems will be used to connect the PC to the headend via a dial up phone line, the following procedure must be followed. The remote modem that will be located at the headend equipment location must be set up for auto answer mode and it must also be set to communicate at the same baud rate as the transcoder settings. If any other rate is used, the transcoders will not respond.

The default RS232 baud rate is 4800 (factory default). It is suggested that this not be changed unless your modem will not operate at this speed. Some modems may require a faster setting. When changing the RS232 baud rate, be sure to change it in three places: 1) the setting on the SCT/PS unit, set with front panel buttons. 2) the setting on the remote modem setup screen; 3) the setting in the headend parameter screen. The easiest way to set up these parameters is to temporarily connect the modem to a PC with this software program installed. Double click on the DRAKE DIGITAL icon on the desktop and open the program. It is not necessary to have a headend file set up at this point. Click on 'Tools' and again on 'Remote Modem Setup'. Make sure the PC is connected to the modem via a standard (**not** a null modem) RS232 serial port cable. If you know that the command string must be altered, you may edit it from this screen. The factory default values that are supplied should work with most currently available external modems. Select the 'Continue' option. This will load the modem with the control character string that will set up the proper parameters. When the pop up screen advises that the process is complete, exit the program. The modem is now ready for installation at the headend. When the modem is connected to the PS, a **NULL MODEM** CABLE MUST BE USED FOR THIS CONNECTION.
Reminder: Use a standard cable for setting up the baud rate and auto answer strings for the remote modem but then use a null modem cable for the final installation connection of the remote modem to the headend.

SETTING UP HEADEND FILES

This procedure will set up a file for each new headend that you wish to control.
■ Open the R.L. Drake SCT file by double clicking the new DRAKE DIGITAL icon on the desktop.
■ Click the "Setup New Headend" button.
■ Type in a name for the headend.
■ Select the Direct Connection or Modem choice.
■ Choose an available COM port. If you do not know which COM port your PC is using for the modem or direct cable connection, go to the Control Panel folder located in your PC's "My Computer" folder. Look for the device properties for the modem or COM port. Usually this is COM1 or COM2.
■ If the direct connection is used, press "OK" to connect.
■ If the baud rate (default is 4800) does not match the transcoder remote modem settings, you may adjust it on this screen.
■ If the modem choice was selected, enter the phone number to be dialed. Use a comma for a pause and be sure to add any long distance or outside line prefixes, if required.
Click OK to access the Modem Connection screen and then press the Connect button to connect.

SETTING UP HEADEND FILES - continued

To set up a different headend location, close any existing connection, then use the "Setup New Headend" button again and repeat the above steps for the second location. Add as many locations as needed using this same procedure.

NOTES
(1) Right click on a headend name to edit or delete that headend if needed.
(2) This software contains factory default SCT parameter settings including presets for certain popular services. These may or may not be the same settings that are factory loaded into the transcoders themselves. You may wish to first set all parameters in the PC file for your specific headend without connecting to the headend. You may then download these PC settings to the headend with one command. If you wish to do this, proceed to the Off-line Editing section.

To begin connecting to a headend now, skip the following "Off-line Editing" paragraph and refer to the "Connecting to a Headend" paragraph.

OFF-LINE EDITING OF TRANSCODER PARAMETERS
To edit parameters off-line, choose the "Continue without Connecting" option from the modem connection menu or if a direct connection is programmed, proceed as usual and edit the appropriate PC files. Do not download the PC files to the transcoder but be sure to save changes when prompted for this response.

CONNECTING TO A HEADEND
From the R.L. Drake SCT Control Program main screen, proceed as follows:
■ Click to highlight a desired headend name and select that headend.
■ Click on the "OK" selection.
If a direct connection is being used, this will make the connection.
If the modem choice was selected, enter the phone number to be dialed, if not already present. Click on the "Connect" button to make the connection.
■ Once connected, the screen will display eight sets of transcoder info at a time. To speed up the display refresh cycle, remove check marks from all unused transcoder numbers for all transcoder screens. Click on the appropriate button to display another set of 8 transcoders.
■ If no data can be received from the transcoders, check the RS232 baud rate setting (right click on headend name or select "edit" from the file menu). The setting must match the transcoder setting. If necessary, use the remote modem setup procedure to program the remote modem for this same baud rate.

EIGHT TRANSCODER SUMMARY SCREEN DISPLAY
Each summary screen displays four items of interest for each of eight transcoders: Mode, satellite S/N, Output QAM symbol rate, and alarms or firmware version number. When the View/Edit button is pushed for any one transcoder, the detailed parameter screen, showing a full set of parameters, will be accessed.

DETAILED PARAMETER SCREEN
When the "View/Edit" button is selected, this screen provides all parameter values for the selected transcoder as stored in the PC file on the left side and the actual operating parameters in the SCT will be shown on the right side. The parameters in the left side PC file may be changed without affecting the actual hardware operation. When desired, values from the PC file may be downloaded to the transcoder from the screen. Alternatively, you may wish to select other transcoders and adjust values as desired in the PC files and then return to the summary screen and download all of the PC files to multiple transcoders in one operation. Many times it will be desirable to set up the entire set of headend parameters off-line and then download all of these PC files to the multiple transcoders.

PASSWORD PROTECTION
It is always possible to connect to the SCT headends with the RS232 control software, regardless of password settings. However, without a valid password, you will only be able to view the existing settings and edit the PC files. It will not be possible to download any new parameters to the transcoders. This prevents unauthorized tampering with the headend settings via the RS232 link. With SCT860s, DQT861s, or MQM861s each unit is set individually. With the 18/28/38/4860 units, the password is set on the PS150/PS151 and applies to all 10 transcoders per supply.

The factory default password is 0. If this password is not changed and the RS232 control program is also kept at the default 0 setting, full access will be permitted. If password protection is desired, program a new password. To do this, there must be a person at the headend to put each transcoder or supply into the password programming mode.

Start the password program process by connecting to the headend, either by direct connection or via a modem. You can always connect regardless of the password settings. **After** connecting to the headend and while viewing the eight transcoder summary screen,
■ Click on the "Change Password" button.
■ In the space provided on the "Change Password" screen, enter your desired new password. Do not click the 'OK' button yet.
■ Now have the person at the headend place all SCT860s, all PS150/PS151s, all DQT861s, and all MQM861s to receive the password in the loading password mode by pressing the left arrow, enter, and right arrow buttons simultaneously. Hold these until the that unit's display is displaying the "Loading Password" message. Repeat on each SCT860, DQT, MQM, or power supply until all displays are showing the "Loading Password" message.
■ Back at the PC, click on "OK" to transfer the password to the transcoders. It is essential that this order is followed. The new password is now set in both the PC software and at the transcoders.
■ Test the new password by downloading a PC file to a transcoder.

RS-232 CABLE CONNECTION
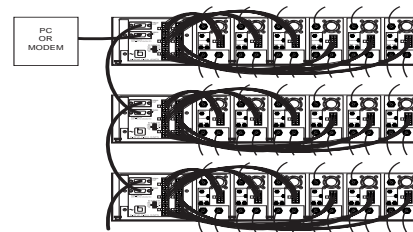
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