WOOD & DOUGLAS

**SX850 FREQUENCY PROGRAMMING
WINDOWS BASED SOFTWARE
OPERATING INSTRUCTIONS**

1892 1265

INTRODUCTION

The SX850 is a synthesised transceiver offering 256 customer programmable channels (sequential) or 80 programmable channels (arbitrary). Frequency spacing between the channels and the default operational frequency are also user programmable.

The information to control these properties are stored in an EEPROM (Electrically Erasable Programmable Read Only Memory) inside the SX850, and to change the configuration, a new set of data must be down loaded into the EEPROM by the user.

The data is generated by the user via a PC, with the SX850 connected to the serial port of the PC and a WINDOWS application SXWIN, running on the PC.

The parameters defined by this program can be saved in a configuration file (*.wxp) to enable faster editing of the parameters at a future time.

NOTES: 1. The SX850 is available with 1 x 8 and 1 x 12 way interface connector (SX850A) or a 21 pin SIL interface connector (SX850C). For the purpose of this document connections for the SX850C version are given in brackets where there is a difference.

2. The SX850 recognises the need to switch to serial programming mode by detecting the signal on the TXD/MS input, and therefore the SX850 should be powered up after the connection is made.

The information is transmitted by making the following connections:

1. Connect the PC Transmit Data output (pin 3 on a 9 way connector or pin 2 on a 25 way connector) to the TXD/MS input pin PL1-6 of the SX850 unit.

2. Link the RTS (Request To Send) output to the CTS (Clear to Send) input on the PC (pin 7 to pin 8 on the 9 way serial port, pin 4 to pin 5 on the 25 way serial port).

3. Link the DTR (Data Terminal Ready) output to the DSR (Data Set Ready) input on the PC (pin 4 to pin 6 on the 9 way serial port, pin 6 to pin 20 on the 25 way serial port).

4. Connect a supply voltage (+5.5 to +9.0V) to the SX850 pin PL1-4.

5. Connect the PC ground (pin 5 on a 9 way connector or pin 1 on a 25 way connector) to the SX850 0V connection PL1-1.

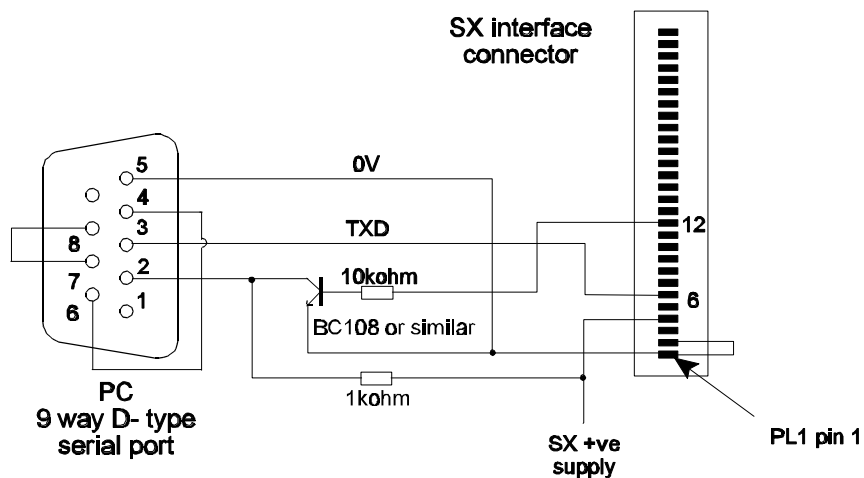6. Connect the SX850 'STBY' input PL1-2 to SX850 0V pin PL1-1.

Figure 1 Connection details (9 way D-type shown)

RUNNING THE PROGRAM

The SX programming software is supplied as an executable file, SXWIN103.EXE. Associated with the file is a default data file, DFLT.WXP. The software can be run from the floppy disk or copied to the local hard drive. It is best to create a subdirectory for the 2 files so that future saved configuration files are stored in a known place.

SCREEN FUNCTIONS

To run the software use the Windows "RUN" command or double-click on SXWIN103.EXE from within "Explorer".

When run, the main screen will be displayed. The top line items are drop-down menus used to access all the functions.

The bottom status line shows text notes on whatever is highlighted by the cursor.

The main area of the screen displays the frequency table of the DFLT file data. As parameters are changed, the table is updated.

Top Level Menu Items

File

When the cursor is positioned over "File" a drop-down menu is displayed. The description of each item follows:

Load Parameters   This brings up a directory listing of the SXWIN directory. WXP files only are displayed, unless selected otherwise. To change directories click on the ↓ next to the directory box. When the correct file is displayed either double-click on the file name, or position the cursor over the file name and press the "ENTER" key.

Save Parameters   A similar dialogue box is displayed as for "Load Parameters". If the directory is correct, highlight the .WXP text and type in a file name. Left click on "OK" or press the "ENTER" key.

Import Parameters This software allows the older DOS parameter files to be imported. Select a .WXP file and double-click or press "ENTER".

Print   This prints the frequency table as shown on the screen. The default Windows printer will be used.

Exit   Exits the program.

Parameters

Some of the fields in this drop down menu are fixed by the SX hardware and so cannot be modified. The parameters are as listed below:

Default Freq.   This can only be modified if the number of channels is set to 80. It is used to fill the frequency table to be sure that the radio can only be used on valid frequencies. Left click on the frequency to bring up a data entry box for the inputting of the frequency (in MHz). When the correct frequency has been entered click on the "OK" button. The table will be automatically updated.

Intermediate Freq.   This is fixed by the selection of the SX150 or the SX450 (see "PIC code version"). For the SX450 and SX850, the frequency is set at + 45 MHz, and for the SX150, 45MHz.

Reference Osc.   When highlighted, the following frequencies are displayed:
                              8.00   MHz
                              10.00 MHz
                              12.50 MHz
                              12.80 MHz

                       This should be set to 12.5MHz for the SX850.

Comparison Freq.   When highlighted, the following synthesiser comparison frequencies are displayed:
                              5.00   kHz
                              6.25   kHz
                              7.50   kHz
                              10.00 kHz
                              12.50 kHz
                              15.00 kHz
                              25.00 kHz (not selectable)

                       The default setting is 12.5 kHz. This should not be changed without consulting Wood & Douglas as the synthesiser hardware characteristics are designed for this frequency.

Prescaler Ratio   Fixed at 64.

PIC code version   When highlighted, SX150 and SX450 are displayed. For the SX850, the SX450 version should be selected.

Special IF offsets   Standard

No of Channels   When highlighted, 80 and 256 are displayed. Which programming mode is selected depends on how the unit is to operate. When set to 80, individual frequencies can be set. When 256 is selected only sequential channels can be set using a start and channel stop.

Channel Steps   Left click to bring up a data entry box. Each step is set by the synthesiser comparison frequency (normally 12.5 kHz), eg 2 steps will set a 25 kHz channel spacing. Only used if 256 channels have been selected.

LINK

These parameters control the serial interface between the PC and the SX.

Transmit   Sends data to the SX850 unit.

Receive   Reads data from the SX (for SX150 type transceiver only). Ensure the hardware connections are made as shown in the section on setup.

Change Channel   A left click brings up a dialog box. Enter the channel number and then click on "OK" or press the "ENTER" key.

View EEPROM   This is only available for the SX150 transceiver. The contents of the SX PIC non-volatile storage area is displayed. Click anywhere to return to the main screen.

Port   Allows COM port 1 or 2 to be selected for the transfer of data.