AR3000 Scanner Control System

Version 1.00

Users Manual

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AR3000 Scanner Control System

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Hardware requirements

An MS-DOS PC with at least 256K of available memory, one
floppy disk drive, one serial port, and DOS 2.0 or later.

                       Installation

First make a backup copy of the diskette and put the master
in a safe place.

For floppy based systems no further installation is required
and you may use the backup copy in either drive 'A' or 'B'.

For hard disk systems, place the backup diskette in the
diskette drive and issue the following commands:

A:INSTALL If installing from drive A

              or

B:INSTALL If installing from drive B

You will be prompted for the source drive and then the
drive/directory where you wish to have the software in-
stalled. The default is A, for the source drive, and
C:\AR3000, for the destination drive/directory.   You may
change the source drive to B and the destination to any
drive/directory you desire.

           Connecting the Computer to the AR-3000

Connect the DB25S 25 pin connector to a serial port on the
computer. Connect the DB25P to the back of the AR-3000.

                 Connecting the Tape Recorder

Connect the 2.5mm plug to the remote jack on the tape re-
corder.   Connect one of the 3.5mm jacks to the external
speaker jack on the back of the AR-3000 and the other end of
the cable to the auxilary or microphone input jack on the
tape recorder.

Notes:

If your computer has 9 pin serial port connectors, then you
will need a 9 pin to 25 pin serial cable adapter.   The
adapter can be obtained from most computer stores.   When
selecting a tape recorder, look for one which has a trans-
port that starts quickly in order to avoid missing audio
from the beginning of each call. Almost any recorder that
has a voice activated option will work well.

Operation

Turn the computer on and wait for the DOS prompt. Next turn on
the radio. If you are using a floppy based system, insert the
backup diskette in the floppy drive. If you are using a hard
disk system, change directories to the one specified in the
installation step above. Make sure the system date and time are
set correctly as they will used by the software when logging
calls. Type AR3000 and press the Enter key.

The copyright screen will appear and the software will attempt to
establish communication with the radio. If communications cannot
be established, a message will appear indicating that the attempt
was unsuccessful and that the logging and other commands to the
radio have been disabled. If communication is not established
and the radio is connected properly, see Installation on page 1-
1. Then proceed to the configuration screen and ensure that the
correct communications port has been selected (see Configuration
on page 8-1).

The next screen to appear is the Scanner Control System main
menu. From this screen all of the available options and addi-
tional screens may be selected. These options and screens are
described in detail in the following chapters.

The bank data, supplied with the software, is preloaded with the
frequencies that the factory programs into the radio prior to
shipment. If you have programmed your own frequency data into
the radio and wish to update the bank data automatically, proceed
to the B)ank Maintenance screen and use the U)pload option.
Remember to use the S)ave command when you are finished to update
the disk file. See pages 5 - 1 and 5 - 2 for more information on
Bank Maintenance.

General Conventions

Each of the screens has a header, body, and option select sec-
tion. Upon entering a screen, the cursor will stop at the Select
prompt in the option select line. Entering the letter code of
the desired option, or pressing one of the special keys described
in appendix A, selects the option. Pressing F1 will display a
help message at the bottom of the screen. See appendix A for an
explanation of the function and special key assignments.

Scanner Control System

   (B)ank Maint   Enter 'B' to select the Bank Maintenance screen.

   (F)req Maint   Enter 'F' to select the Frequency Data Base Main-
                    tenance screen.

   Process Lo(g)   Enter 'G' to select the Log Processing screen.

   L(o)gging   Enter 'O' to select the Scanner Logging screen.

   (L)ink   Enter 'L' to Link the current bank to the list of
                    banks to be scanned.

   (U)nlink   Enter 'U' to remove the current bank from the list
                    of banks to be scanned.

                    The list of linked banks is stored as part of the
                    bank data. Pressing Link or Unlink sets the bank
                    edit flag.   If you Quit the AR3000 program and
                    have not saved the bank data the following prompt
                    will be displayed. Changes made in Banks, Abandon
                    Changes (Y/N). Press 'Y' to abandon the changes
                    or 'N' to save the changes.

   Spect(r)a   Enter 'R' to select the Spectra Graph screen.

   (M)anual   Enter 'M' to switch from scan or search mode back
                    to the manual mode.

   (S)can   Enter 'S' to select the scan or search mode.

   (T)une   Enter 'T' to tune the radio to a frequency.   The
                    cursor will move to the frequency column of the
                    box in the center of the screen. Enter   the de-
                    sired frequency, modulation and attenuator set-
                    ting.   The software will tune to the frequency
                    upon completion of the entry. If the frequency
                    entered is on file in one of the banks or in the
                    frequency data base, the description will be
                    displayed.

   (D)elay   Enter 'D' to toggle delay on or off.   When the
                    Delay function is on and a call completes, the
                    program will wait for the number of seconds speci-
                    fied for 'Delay time' before stepping to the next
                    frequency. The Delay time may be set from 1 to 59
                    seconds in the configuration screen.

Scanner Control System

(W)ait   Enter 'W' to toggle the Wait function on or off.
                When the Wait function is on and a call is re-
                ceived, the program will step to the next frequen-
                cy after the number of seconds   specified   for
                'Wait time' if the call has not terminated. The
                Wait time may be set from 1 to 59 seconds in the
                configuration screen.

Loc(k)   Enter 'K' to toggle the 'lock' for the current
                frequency.

Scan Banks

                When 'locked' the frequency will be skipped while
                scanning. In manual mode the frequency may be
                selected by using the up and down arrow keys.

Search Banks

                Up to 500 frequencies may be locked out when using
                a search bank. Once locked, the frequency will be
                skipped in both manual and scan modes. The lock
                table is cleared if you edit the search bank or if
                you select a different search bank. Note: The
                Re(v)iew Locks function is the only way to unlock
                a locked search bank frequency.

P)riority   Enter 'P' to toggle the 'priority' function on or
                off. When priority is on, bank 1 will be scanned
                after each successive bank that is scanned.

Re(v)iew Locks Enter 'V' to Review the frequencies that are
                locked out in the current bank. Entries may be
                unlocked by entering 'N' or left locked by press-
                ing Enter.

(C)onfig   Enter 'C' to select the Configuration screen.

E(x)it   Enter 'X' to leave the program and return to DOS.
                If the Bank, Frequency Data Base, or Configuration
                data has been changed but not saved, a prompt will
                appear indicating which items have been changed,
                and ask if you wish to abandon the changes. Enter
                'Y'es to exit the program without changes saved or
                'N'o to have the data saved prior to returning to
                DOS.

Bank nn   Enter a number from 1 to 32 to select a bank.

Down Arrow   Selects the next frequency.

Up Arrow   Selects the previous frequency.

Page Down   Selects the next bank.

Page Up   Selects the previous bank.

Scanner Logging System

The logging system uses the signal strength data returned by the
AR3000 to determine call activity. The software logs the serial
number, frequency, mode, attenutator setting, description, date,
time in, time out and signal strength for each call received.
When a frequency is logged, the software scans the bank and
frequency data base for a matching entry. If a match is found
the description of the frequency will appear in the log.   Each
new entry appears at the bottom of the window and the previous
entries are scrolled up one line. The following is a description
of the column headers at the top of the window.

       S/N   The serial number assigned to the call.

       Frequency   The frequency.

       M   Mode - N for narrow FM, W for Wide FM, A for AM, U
                     for upper sideband, L for lower sideband or C for
                     CW.

       A   Attenuator - 'Y'es or 'N'o attenuator

       Description   The description entered in bank maintenance or the
                     frequency data base for this frequency.

       Date   The date the call was received.

       Time In   The time when the call started.

       Time Out   The time when the call was completed.

       SS   The signal strength of the call received.

When the AR3000 program is first started, it uses the default
file name AR3000.LOG. If the file already exists, new data will
be appended to the end of the file. If you wish to use a differ-
ent file name, go to the Log Processing screen and use the F)ile
option to change file names. The serial number starts at one and
is incremented by one for each call received. The serial number
is reset to one if you delete, rename, or change log files.

The cursor does not sit at the Select option in this screen. However, options may be selected at any time by pressing the letter of the desired option. Since each of the options is a single keystroke, you do not need to press the Enter key.

C)apture   Press 'C' to toggle the capture function on and
                off. When capture is on, each log entry is writ-
                ten to the current log file.

P)rinter   Press 'P' to toggle the printer on and off. When
                the printer is on, each log entry is printed upon
                completion of the call.

R)ecorder   Press 'R' to toggle the recorder function on and
                off. When the recorder is on, the recorder is
                turned on at the start of each call and turned off
                on completion.

S)tatus   Press 'S' to toggle the status line at the bottom
                of the screen on and off.

L)ineprinter   Press 'L' to change printers.

Loc(k)   Press 'K' to Lock out the current frequency.

A)log   Press 'A' to begin Autolog. The Autolog function
                logs the call and then locks out the frequency.
                When you have completed scanning the log will
                contain a single entry for each frequency re-
                ceived. Note: Autolog only works with search
                banks 17-32. If Autolog is on when you quit
                logging, the lockout table will be cleared.

D)elay   Press 'D' to toggle the Delay function on and off.

W)ait   Press 'W' to toggle the Wait function on and off.

Q)uit   Press 'Q' to leave the logging screen. You will
                be returned to the Scanner Control System screen.

F5   Press F5 to toggle the frequency display on/off.

Down Arrow   Selects the next frequency.

Up Arrow   Selects the previous frequency.

The current status of capture, printer, and the recorder are dis-
played in the status line at the bottom of the screen. The
status of Delay, Wait, and Autolog are displayed at the top of
the screen.

Spectra Graph uses the search banks, banks 17 thru 32, to do spectrum analysis. Up to 1000 discrete frequencies can be record-ed in memory at one time. The display shows 69 steps at a time and may be scrolled left or right in single step or half page increments. The graph may be scrolled both during and after the search. You may also print the graph at any time by pressing the Print Screen key. The description of the center frequency is displayed at the top of the graph if it is on file in the Banks or Frequency Data Base. The software graphs signal strength while performing the sweep/s and counts the number of times the frequency was active. After stopping the sweep you may press F7 to display a graph the counts. An asterisk in a column indicates the frequency was active but the count is less than the lowest value on the scale. Press F7 again to return to the signal strength graph.

Bank nn   Enter the bank number to search, 17 to 32.

PgUp   Moves the graph right a half page.

PgDn   Moves the graph left a half page.

Up Arrow   Moves the graph right one step.

Dn Arrow   Moves the graph left one step.

S)weep   Press 'S' for a single sweep of the frequency range.

R)epeat   Press 'R' for repeating sweeps of the frequency range.

C)um   Press 'C' for cumulative repeating sweeps of the range.

T)une   Press 'T' to tune the radio to the center frequency.

L)og   Press 'L' to log the center frequency information in the Log File. If an entry is logged for which no call was received the signal strength will be 32.

F5   F5 toggles the frequency display on and off.

F6   Change the search parameters.

F7   Toggles the graph from Signal Strength to Count mode.

Q)uit   Press 'Q' to leave the Spectra Graph screen. You will be returned to the Scanner Control System screen.

Bank Maintenance

There are 16 banks of 100 scan frequencies each and 16 banks each
containing 2 search frequencies. In addition to the frequency,
modulation, attenuator, and description, a title for each bank
may be entered. Also, any one of the 16 scan banks may be down-
loaded to or uploaded from any one of the 4 banks in the radio.

Bank nn   Enter the bank number to edit, Page Down to move to the
           next page, or Page Up to move to the previous page.

S)ave   Enter 'S' to save the bank data. All bank data is
           stored in a single file, and entering 'S' saves all 32
           banks.

E)dit   Enter 'E' to edit the currently displayed bank.

                         Scan Banks

           The cursor will move to the top of the screen and you
           may enter or edit the description for the bank.   After
           entering the bank description, the cursor will move to
           the first frequency in the bank. You may use the down
           arrow to move to the next frequency, the up arrow to
           move to the previous frequency, the page down key to
           move to the next page, the page up key to move to the
           previous page, the F8 key to copy data from the fre-
           quency data base or log, F4 to delete the entry, or you
           may enter a frequency between .1 and 2036 Mhz.   After
           entering a frequency, the cursor will move to the mode
           column which will be preloaded with a default modula-
           tion based on the frequency entered. If the default is
           acceptable, press Enter to move to the next column or
           enter the desired modulation type. In the Att column,
           enter 'Y'es for attenuator on or 'N'o for attenuator
           off.   In the Lock column enter 'Y' to lock out the
           frequency or 'N' for no lock out. Next enter the
           frequency description.

                        Search Banks

           After entering the bank number, select 'E'dit and the
           cursor will move to the beginning frequency column.
           Enter a frequency between .1 and 2036 Mhz. The cursor
           will move to the Ending Frequency column. Enter a the
           ending frequency of the range. Note that the ending
           frequency must be greater than the beginning frequency.
           The modulation will be defaulted based on the frequency
           entered.   Press Enter to accept the default or enter
           the desired modulation type. In the attenuator column,
           enter 'Y'es for attenuator on or 'N'o for attenuator
           off. In the Step column, enter the desired step incre-
           ment.   The step increments may range from .05 Khz to
           999.95 Khz in .05 Khz steps. Next enter a description
           for the bank.

The valid entries for modulation are 'N' for narrow FM,
'W' for wide FM, 'A' for AM, 'U' for upper sideband,
'L' for lower sideband or 'C' for CW.

Copying Data

> When you press F8 in the frequency column, the following prompt will be displayed.
>
> Copy from F)requencies or L)og _
>
> Enter 'F' to copy data from the Frequency Data Base or 'L' to copy data from the Log. After making your selection, the system will display a page of frequencies from the Frequency Data Base or the Log. Use the Page Up or Page Down keys to move to the desired page and then the Up Arrow or Down Arrow keys to move to the desired entry to copy. Press F8 to mark the entries you wish to copy. The number of entries that may be copied at one time is based on entry number you are at in the bank when F8 is pressed. The maximum number is 100 or the number of entries that will fill the bank. If you are not on the first empty entry in the bank, the copied entries will overwrite the existing entries. After you have marked the entries you wish to copy press 'C' to copy the entries or F10 abandon the copy.

P)rint   Enter 'P' to print the bank reports.   The following prompt will appear.

> I)ndex or B)anks _
>
> Enter 'I' to print the Bank Index Report or 'B' to print the Scan Banks Report. If B)anks is selected you will be prompted for the beginning and ending bank numbers.

U)pload   Enter 'U' to upload frequency data from the radio to the computer. You will be prompted to press F3 to set the radio on the desired bank and then Enter to process the upload.   If an uploaded frequency is on file in another bank or the frequency data base, the description will be automatically copied into the bank.

D)ownload   Enter 'D' to download frequency data from the computer to the radio. You will be prompted to press F3 to set the radio on the desired bank and then Enter to process the download.

O)rder   Enter 'O' to sort the bank. After entering 'O' the following prompt will be displayed.

> F)req, C)lass or D)escription
>
> Enter 'F' to sort by frequency, 'C' to sort by class, or 'D' to sort by description.

Q)uit   Enter 'Q' to leave the Bank Maintenance screen and

return to the Scanner Control System screen.

Frequency Data Base Maintenance

A frequency data base can hold up to 1600 frequencies and an
unlimited number of data bases may be created. In addition to
the frequency, modulation, and attenuator, a classification and
description for each frequency may be entered. The entries in
the data base may be sorted by frequency, classification, or
description and duplicate entries are allowed.

Page nn   Enter the page number to edit, Page Down to move to the
           next page or Page Up to move to the previous page.

S)ave   Enter 'S' to save the frequency data.

E)dit   Enter 'E' to edit the currently displayed page.

           The cursor will move to the first frequency of the
           page.   You may use the down arrow to move to the next
           frequency, the up arrow to move to the previous fre-
           quency, the page down key to move to the next page, the
           page up key to move to the previous page, the F8 key to
           copy data from the banks or log, F4 to delete the
           entry, or you may enter a frequency between .1 and 2036
           Mhz. If you enter a frequency, the cursor will move to
           the modulation column. The entry will be preloaded
           with a default modulation based on the frequency en-
           tered.   If the default is acceptable press Enter, or
           enter the desired modulation type. Next enter attenu-
           tor the setting, 'Y'es for on or 'N'o for off, and the
           cursor will move to the class column. Next enter a
           classification for the frequency and then the descrip-
           tion for the frequency.

           The valid entries for modulation are 'N' for narrow FM,
           'W' for wide FM, 'A' for AM, 'U' for upper sideband,
           'L' for lower sideband or 'C' for CW.

Frequency Data Base Maintenance

Copying Data

When you press F8 in the frequency column, the follow-
ing prompt will be displayed.

Copy from B)anks or L)og _

Enter 'B' to copy data from the Banks, or 'L' to copy
data from the Log. After making your selection, the
system will display a page of frequencies from the
Banks or the Log. Use the Page Up or Page Down keys to
move to the desired bank or log page, and then the Up
Arrow or Down Arrow keys to move to the desired entry
to copy.   Press F8 to mark the entries you wish to
copy. The maximum number of entries that may be copied
at one time is 32. If you are not on the first empty
entry in the data base, the copied entries will over-
write the existing entries. After you have marked the
entries you wish to copy, press 'C' to copy the entries
or F10 abandon the copy.

P)rint   Enter 'P' to print the Frequency Data Base Report.

O)rder   Enter 'O' to sort the data base. After entering 'O'
          the following prompt will be displayed.

          F)req, C)lass or D)escription

          Enter 'F' to sort by frequency, 'C' to sort by class,
          or 'D' to sort by description.

F)ile   Enter 'F' to change data bases or to create a new data
          base. The cursor will move to the file name at the top
          left of the screen and you may enter a new file name.
          If the file exists, it will be loaded and the first
          page will be displayed. If the file does not exist,
          the following message will be displayed.

          Filename.ext not found - Press Enter to Continue _

          Pressing enter will return you to the select prompt.

Q)uit   Enter 'Q' to leave the Frequency Data Base Maintenance
          screen and return to the Scanner Control System screen.

Log Processing

     P)rint   Enter 'P' to print the log report.

     E)xport   Enter 'E' to export the log in ASCII format.

                The log is stored in an internal binary format which is
                not useable by other programs.   The export option
                creates an ASCII file with fixed field and record
                lengths.   Each record is terminated with a carriage
                return and linefeed.   The file is created with an
                extension of .PRN and may be read by Lotus 123, dBASE,
                word processors, and many other DOS application pro-
                grams. The ASCII version of the log is approximately 5
                times larger than the internal version. When exporting
                large log files, make sure there is enough disk space
                available to hold the ASCII file.

     R)ename   Enter 'R' to rename the log file.

                When the AR3000 program is run, it uses the default
                file name AR3000.LOG. Use the rename option to save
                the log under a different file name.

     D)elete   Enter 'D' to delete the current log file.

                After entering 'D' to delete the log file, the follow-
                ing prompt will appear.

                Are You Sure (Y/N) _

                Enter 'Y'es to delete the file or 'N'o to return to the
                select prompt.

     F)ile   Enter 'F' to change log files or to start a new log
                using a different file name. The cursor will move to
                the file name at the top left of the screen and you may
                enter a new file name. If the file exists, it will be
                loaded and the first page will be displayed.   If the
                file does not exist, the following message will be
                displayed.

                Filename.ext not found - Press Enter to Continue _

                Pressing enter will return you to the select prompt.

     Q)uit   Enter 'Q' to leave the Log Processing screen and return
                to the Scanner Control System screen.

     Page Down Displays the next page of the log.

     Page Up   Displays the previous page of the log.

     Home   Displays the first page of the log.

End   Displays the last page of the log.

System Configuration

    E)dit   Enter 'E' to edit the configuration data.

    S)ave   Enter 'S' to save the changes you have made to the
                   configuration data.

    A)ctivate   Enter 'A' to activate changes in the configura-
                   tion.   The A)ctivate option is not required for
                   the S)eq or A)ll Linking option, see below.

    Q)uit   Enter 'Q' to quit and return to the Scanner Con-
                   trol System screen.

The following is a description of the configuration entries.

      COMn: Port (1-4) (default=1)

          Enter the communications port, COMn:, where n = 1 to 4.

      Baud Rate   (automatically set to 4800)

      Data Bits (automatically set to 8)

      Stop Bits (automatically set to 2)

      Parity   (automatically set to None)

      Printer Port (1-3) (default=1)

          Enter the printer device number 1 to 3.

      Color Monitor (default is based on installed video adapter)

          Enter 'Y'es for a color monitor or 'N'o for monochrome.

      Capture Default (default=OFF)

          Enter ON to have calls captured to disk while logging.

      Recorder Default (default=OFF)

          Enter ON to have calls recorded on the tape recorder.

      Printer Default (default=OFF)

          Enter ON to have the log printed as each call is re-
          ceived.

        Valid Call Time (default=0)

            Enter the time, in hundredths of a second, that a call
            must be active in order to be logged. This option may
            be used to filter chop from the log. The AR-3000 is so
            sensitive that frequencys are returned from calls of
            such a short duration that no audio will be heard or
            recorded. If you choose to use this option, a value of
            2 to 4 is recommended.

        Delay Time (default=5)

            Enter the time, in seconds, to wait after a call com-
            pletes.   When the Delay function is on and a call is
            completed, the program will wait the number of seconds
            specified   for 'Delay Time' before moving to the next
            frequency.   This function is toggled on and off from
            the Scanner Control screen and Logging.

        Call Wait Time (default=5)

            Enter the time, in seconds, to wait on an active call.
            When the Wait function is on and a call is received,
            the program will issue a 'down arrow' command after the
            number of seconds specified for 'Call Wait Time' if
            the call has not terminated. This function is toggled
            on and off from the Scanner Control screen and Logging.

        S)eq or A)ll Linking (default=S)

            S)equential linking allows groups of contiguous banks
            to be set up for scanning. For instance, if banks 1,
            2, and 3 are linked and banks 5, 6, and 7 are linked,
            starting a scan in banks 1, 2, or 3 would result in
            banks 1, 2, and 3 being scanned. Likewise, starting a
            scan in banks 5, 6, or 7 would result in banks 5, 6,
            and 7 being scanned. With A)ll linking in effect banks
            1, 2, 3, 5, 6, and 7 would be scanned.

        Bank File Name (default=AR3000.FRR)

            Enter the Bank File Name to use with the AR-3000.
            Multiple bank files may be created and maintained by
            entering the the desired file name. If configuration
            is S)aved, see above, the file name entered becomes the
            default for subsequent sessions.

        Squelch Level (default=1)

            Enter the signal strength required to break squelch.
            Any call received with a signal strength less than the
            level entered here will be ignored by the software.

System Configuration

Notes on communication ports.

      COM1: thru COM4: are supported as follows:

            Port   Address   Irq

            COM1:   03F8h   4
            COM2:   02F8h   3

            COM3:   03E8h   4
            COM4:   02E8h   3

            COM3:   02E8h   4
            COM4:   02E0h   3

      Since interrupt request lines are shared, only two ports on
      opposite Irq's may be active at any given time.

      The software attempts to find and correctly assign ports at
      the addresses given above. However, the port at 02E8h may
      not be resolved correctly since it may be assigned to either
      COM3: or COM4:. If COM3: is not assigned at 03E8h, and
      COM4: is not assigned at 02E0h, then it is impossible to
      determine if the port at 02E8h is COM3: or COM4:.   The
      software defaults the port to COM4: in this situation.

      You may use a serial port as COM3: at 02E8h by changing the
      Irq switch on the board to Irq 3, and selecting COM4: in the
      configuration screen.

Function and Special Key Assignments

     F1 - Help

     F2 - Re-establish communications with radio. Active at most all
          input prompts except in the Logging Screen.

     F3 - Steps the radio to the next bank.

     F5 - Toggles the frequency display on and off in Logging and
          Spectra Graph.

     F6 - Change search parameters when using a search bank.

     F7   Toggles between signal strength and count display modes in
          Spectra Graph. (used after sweep/s are completed)

     F10 Exit the current activity

     The following two function keys are only active in the frequency
     column of Bank and Frequency Maintenance.

     F4   Delete Frequency

     F8   Selects the copy option, which is used to import data from
          the Banks, Frequency Data Base, or Log File.   Once the
          screen you are copying from is displayed, use F8 to mark or
          unmark the entries to be copied.

     Data Entry

     Home   Moves to the first character of the entry, if at
                    the first character, moves the the first column,
                    if at the first column, moves to the beginning of
                    the page, if at the beginning of the page, moves
                    to the beginning of the Bank or Frequency Data
                    Base.

     Ctrl+Home   Moves to the beginning of the Bank or Frequency
                    Data Base.

     End   Moves to the end of the entry, if at the last
                    character of the entry, moves to the last column,
                    if at the last column, moves to the end of page,
                    if at the end of the page, moves to the end of
                    the Bank or Frequency Data Base.

     Ctrl+End   Moves to the end of the Bank or Frequency Data
                    Base.

Function and Special Key Assignments

   Left Arrow   Moves left a character, if at the first character
                   of the entry, moves left one column.

   Ctrl+Left   Moves left one column.

   Right Arrow   Moves right a character, if at the last character
                   of the entry, moves right one column.

   Ctrl+Right   Moves right one column.

   Insert   Toggles the insert/overstrike mode.   Default is
                   overstrike.

   Delete   Deletes the character under the cursor.

   Backspace   Deletes the character in front of the cursor.

   Up Arrow   Moves to the previous prompt or row.

   Down Arrow   Moves to the next prompt or row.

   PgUp   Moves back a bank or page.

   PgDn   Moves forward a bank or page.

   Alt+C   Clears the current field.

   Alt+E   Clears from the cursor position to end of field.

   Alt+R   Restores the current field.

   Alt+M   Marks the current field for paste/copy.

   Alt+P   Paste/copy to the current field.

Packing List and Log File Layout

    The following is the list of files supplied on the diskette.

    AR3000.EXE   The Scanner Control System main program.

    INSTALL.EXE   The hard disk installation program.

    AR3000.CFG   The system configuration file.

    AR3000.FRR   The Frequency Bank data file.

    AR3000.FDB   The default Frequency Data Base File.

    Following is the file layout of the exported ASCII log file.

    Position   Length   Description

       1   5   The serial number of the call.
       6   11   The received frequency.
      17   2   The modulation type.
      19   2   The attenuator setting.
      21   26   The frequency description.
      47   9   The date received.
      56   9   The time the call started.
      65   9   The time the call ended.
      74   3   The signal strength.
      77   2   The carriage return/linefeed.

Please fill in the following registration form.

Company _____

Contact _____

Address _____

City _____ State ____ Zip _____

Phone _____ Serial Number _____

Signature _____ Date _____

_____

Clip and Mail to:

<div align="center">

Gesmundo Computing & Design, Inc.
10301 E. M89   Suite 303
Richland, MI 49083-9347

</div>