

Reviewer Program

Description

The Vmed Reviewer program is included with each Vmed wireless monitoring product and is also available free to any interested person in order to facilitate ECG interpretation by third party consultants. The Reviewer program performs the following functions:

- ❖ Provides a patient database where information recorded from Vmed wireless monitoring products may be stored automatically.
- ❖ Allows archived ECG sweep, patient and episode data to be recalled for review, editing, measurement and printing.
- ❖ Provides for the electronic measurement of ECG complexes
- ❖ Allows real-time playback of previously recorded ECG sweep data.
- ❖ Makes available, through the Help menu, a table of normal ECG measurements for cats and dogs and guidelines for measuring ECG complexes.
- ❖ Provides an easy method of summarizing and storing ECG measurements, vital signs and diagnostic notes.
- ❖ Provides an easy way of sending email transmission of stored reports.
- ❖ Automatically documents and stores vital signs every 5 minutes.

NOTE: At the present time, files cannot be integrated with practice management software programs. Check the Vmed website for future software updates that may make this possible.

Modes of Operation

ECG and related data are stored automatically in one of three available modes.

Record modes are selected in the PC-Vet Configuration window:

1. Continuous Event Recording (Typically used in surgery monitoring)

- ❖ Records vital signs only on event (Print command, alarm activation, or change of record mode).
- ❖ Does not record ECG sweep
- ❖ Records Vital signs every five minutes.

NOTE: This is the default mode for the VetGard patient monitor

2. Event Initiated ECG Sweep Recording (Typically used in ECG exams)

- ❖ Vital signs and 30 second ECG sweep are recorded on event (Print command, alarm activation, change of record mode). *NOTE: This is the factory default mode for the PC-Vet.*

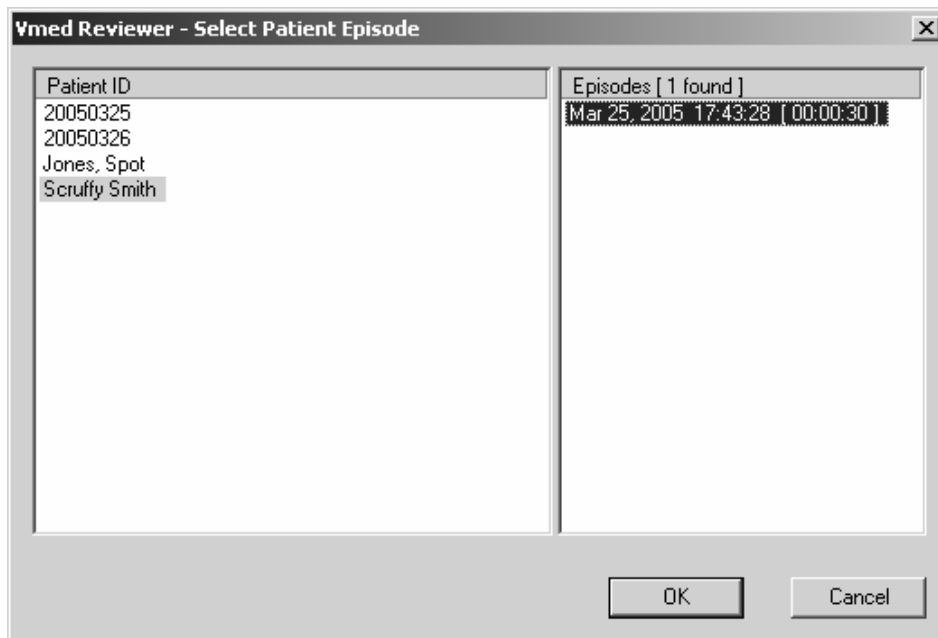
3. Continuous ECG Sweep Recording (Typically used in long-term monitoring)

- ❖ Continuous recording of ECG sweep and event initiated vital signs for the life of the batteries (about 50 hours).
- ❖ Activated by pressing the Record icon on the PC-Vet toolbar. (See Display toolbar on page 42)

NOTE: This mode selection overrides and supersedes any previously selected mode.

Using the Reviewer Program

1. Click the Reviewer icon on the desktop and the Reviewer window will open:
2. Click “File” then “Patient episode on the upper toolbar and the window below will open:



NOTE: Patients are filed alpha-numerically. If a patient is not pre-identified, patient files are stored numerically by year, month, day and time. Patient data can be entered prior to, during, or after the monitoring procedure and edited by using the Reviewer toolbar. Episodes are identified by date and time of the event.

3. Highlight the patient of interest and then the episode as above and press OK and the next screen will appear:



NOTE: This screen summarizes the patient file for the episode selected along with cursor measurement of the QRS complex. The measurements selected have been dropped into the diagnostics notes and comments box. Note the red rubber band vector and the measurement crosshairs above.

Using the electronic cursor measurement feature:

1. First click on the complex you wish to measure in the “Measurements” box at the top of the screen. *Note: For a description of each complex, click on the “Help” menu in the upper toolbar.*

2. Next, left click the mouse at the beginning point of your measurement, then drag the mouse to the right and up if amplitude is to be included. Note the red rubber band in the above illustration. Place the blue crosshair at the end of the interval and the top of the amplitude and release the mouse button. The one step measurement will result in an interval and amplitude calculation if appropriate for that complex. *NOTE: For best accuracy increase the gain of the signal before beginning the measurement procedure.*

3. Repeat the procedure in step 2 for each measurement.

4. Click the “Copy to Diagnostic Notes” box to drop your measurements into the diagnostics notes section of the report.

Upper Tool Bar Icons

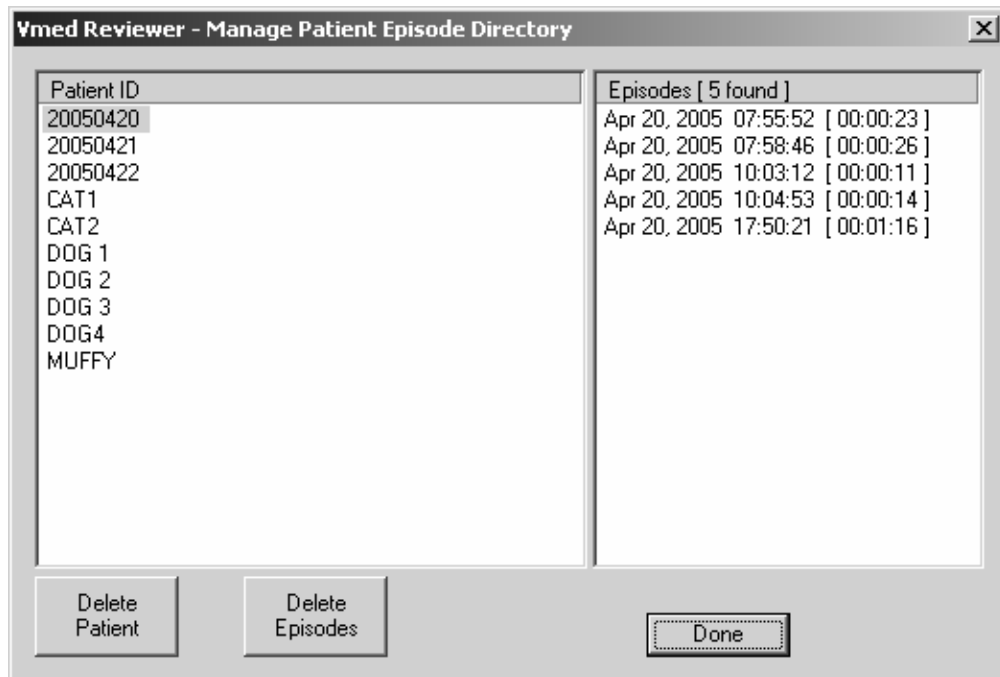
The screenshot displays the Vmed Reviewer software interface. The title bar reads "Vmed Reviewer - [MUFFY : Apr 14, 2005 09:31:07]". The menu bar includes File, Edit, View, Tools, Window, and Help. The toolbar contains various icons for file operations, zooming (50 mm/sec, x1.0), and playback controls. The main window is divided into several sections:

- EPISODE INFORMATION:** Episode Date: Apr 14, 2005 09:31:07; Episode Duration: 00:00:14; Patient Name/ID: MUFFY; Owner: Smitty; Species: Canine; Breed: Husky Mix; Age: 11; Sex: F; Weight: 85.
- MEASUREMENTS (click label to select measurement):** Elapsed Time, R-R Interval, P Wave, P-R Interval, QRS Complex, S-T Segment, T Wave, Q-T Interval. A "Copy to Diagnostic Notes" button is located below this section.
- ECG Waveform:** A grid-based display showing a continuous ECG trace. A red rubber band is visible on the waveform, indicating a measurement interval. Below the waveform, the text "*** Esophageal ECG Probe ***" is displayed.
- Vitals Table:** A table with columns for Event Date / Time, Elapsed, Event, HR, SpO2, PR, RR, and Temp. The first row shows: 04/14/2005 09:31:07, 00:00:00, Vitals, ..., ..., RR, 98.8 F.
- Diagnostic Notes / Comments:** A text area for entering notes, currently empty.

The status bar at the bottom shows "Ready" and "NUM".

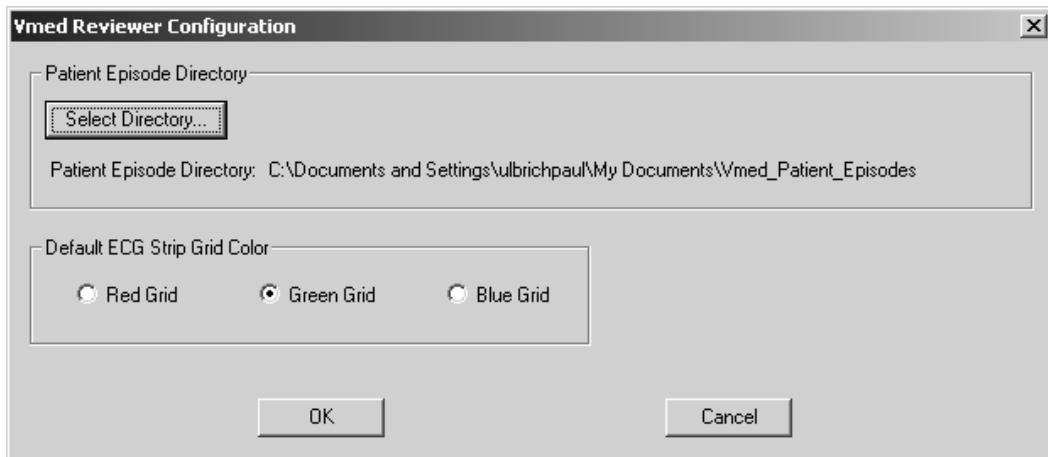
NOTE: The first row contains the command buttons like any Windows toolbar. The “Tools” button deserves some comment, however. The “Tools” command includes the following options:

- ❖ **Manage Patient Episodes:** Selecting this choice opens the screen below:



This screen allows you to remove unwanted patients and episodes. To delete a patient, highlight the patient and press the “Delete Patient” button. To delete an episode, highlight that episode and press the “Delete Episode” button. *NOTE: to delete episodes, you must first highlight a patient.*

- ❖ **Configure Vmed Reviewer** Selecting this option opens the screen below:



NOTE: This window allows you to select the directory where patient files are stored. The default directory is “My Documents” You can also change the color of the printed report grid as well as the grid color in the Reviewer.

The second row of the upper toolbar displays the icons listed below.
NOTE: Some of these icons are duplicates of commands that appear under the “File”, “Edit” and “View” menus.

- **Open Episode:** Opens patient and episode window
- **Save Episode:** Saves the information on the window displayed
- **Email Episode:** Opens the Email window with the file as an attachment

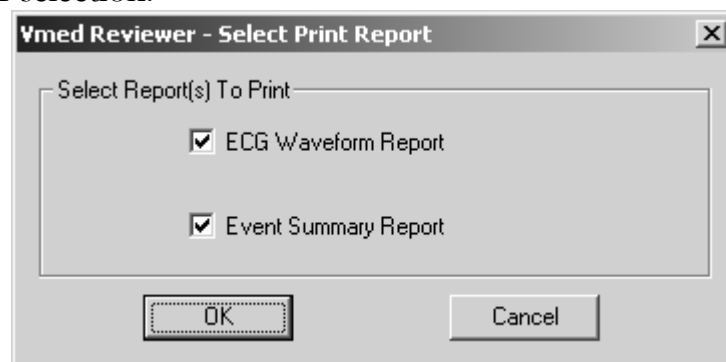
NOTE: If your computer is equipped with MAPI capable email like Outlook or Outlook Express, you can email the report using this button. Otherwise, the appropriate file may be opened from the “My Documents”>”Vmed Episode” file. Select the patient and episode of interest and select “Send To”> “Email Recipient” or drag and drop the file directly into your email “Attachments box”.

- ❖ **Edit Clinic/Vet information:** Opens Clinic/vet window for any changes

NOTE: The controls described below are only visible if you have selected an episode that includes an ECG sweep, otherwise these icons will be grayed out.

- **Change Sweep Speed:** Select chart sweep speed in drop down window
- **Change Gain Setting:** Select desired ECG gain from drop down window. Again, it is best to increase the gain setting in order to obtain more accurate cursor measurements.
- **Add “R” Wave Markers:** Places triangular marker over each “R” wave to help identify this complex.
- **Up/Down Arrows:** Changes the position of QRS complex displayed in the sweep area and brackets the sweep to be printed. Use this control to show the entire sweep complex in the window before printing.
- **Episode time display:** The time that the episode was recorded is displayed here.
- **Video Controls:** for the real-time playback of recorded sweep and to stop, start and scroll the ECG record.
- **Print Command:** Prints to any printer connected to the computer being used.
- **Question Mark:** Displays the version of the your Reviewer program

NOTE: You can print one or both of the following reports from the Reviewer toolbar: The following window will open when the print command is initiated allowing you to make your selection:



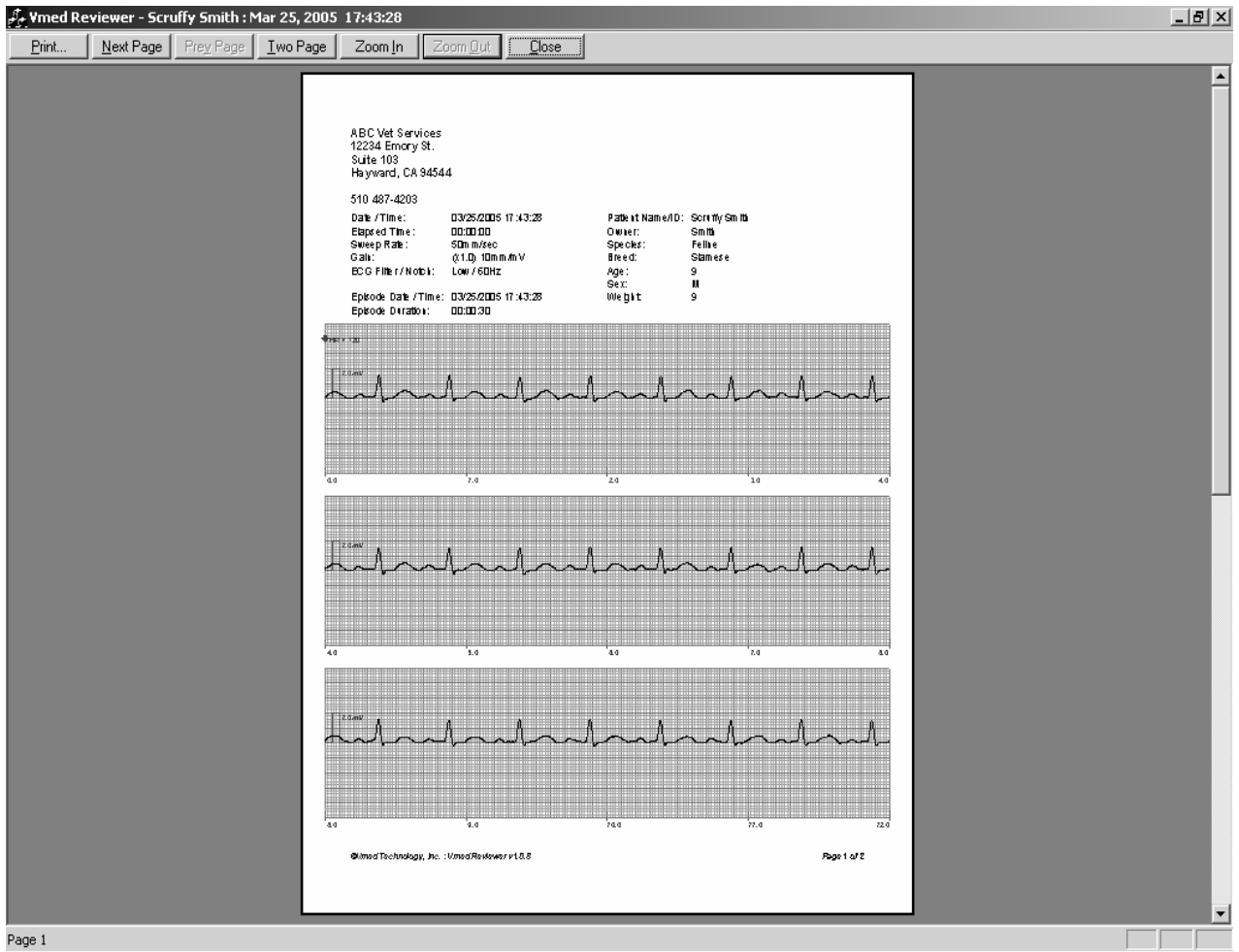


Figure 1 ECG Waveform report printed from the Reviewer

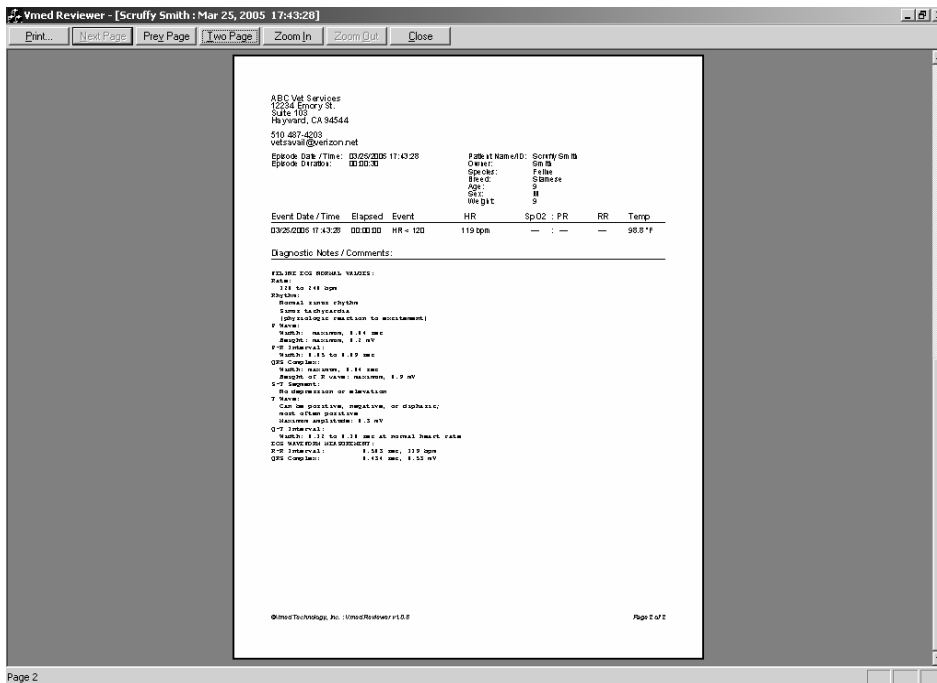


Figure 2 Event Summary Report includes vital signs, measurements and clinical comments.

NOTE: Selecting “Help” from the Reviewer upper toolbar allows you to open a window for assistance in defining and measuring ECG complexes and to display a table of normal measurements for feline and canine patients. These selections are shown below:

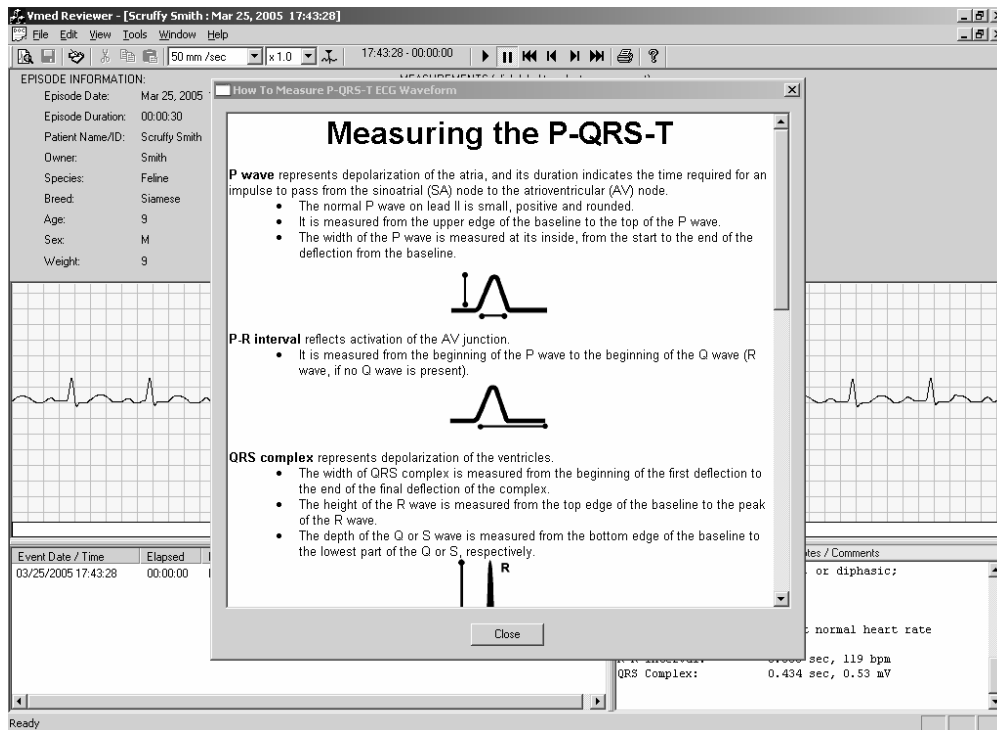


Figure 3 Instructions for measuring ECG complexes from the “Help” menu

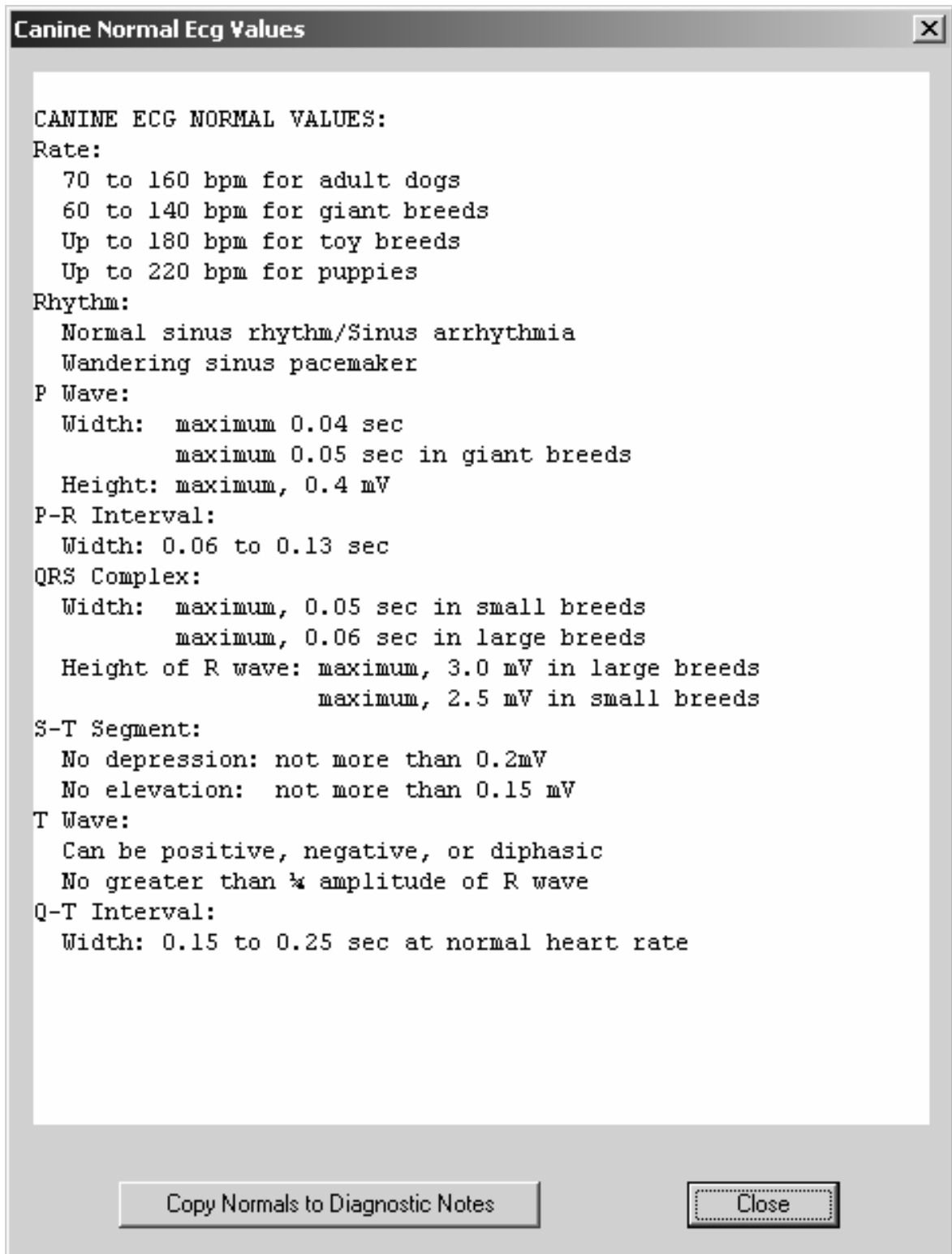


Figure 4 Table of Normal ECG measurements for canine patients from the "Help" menu.

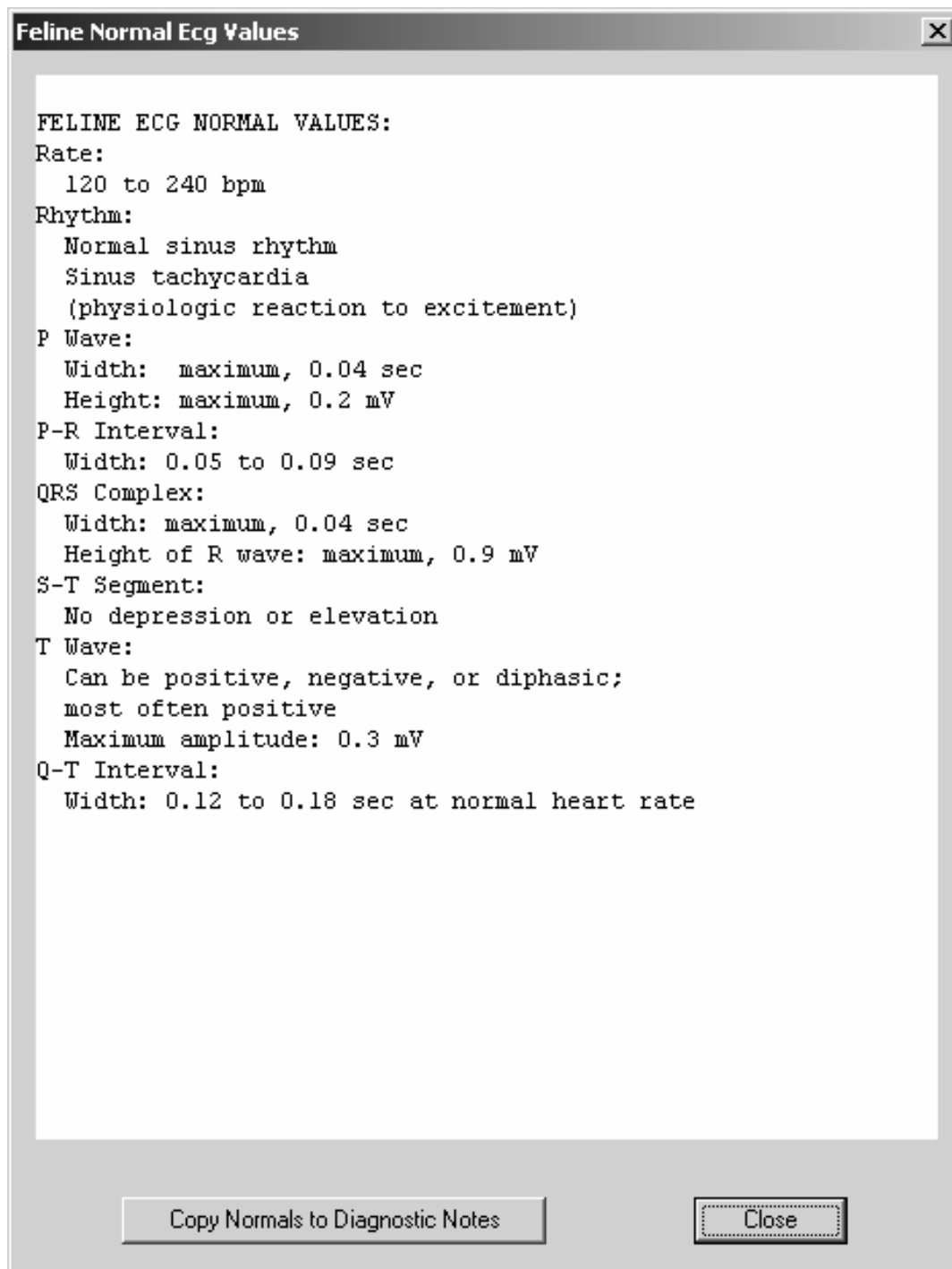


Figure 5 Table of Normal ECG measurements for feline patients from the “Help” menu

Information in Tables 7, 8 and 9 from *Electrocardiography for the Small Animal Practitioner*, Larry P. Tilley, DVM, Diplomate, ACVIM (Internal Medicine), Naomi L. Burtnick, MT (ASCP). “Made Easy Series”, Teton New Media.

