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USERS MANUAL
FOR THE
RAPID SCORING SYSTEM (RSS)

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LIST OF ACRONYMS

AC	Alternating Current
DC	Direct Current
ID	Identification
LCD	Liquid Crystal Display
PC	Personal Computer
RF	Radio Frequency
RSS	Rapid Scoring System

1.0 SCOPE. This document provides information on the setup and operation of the Rapid Scoring System (RSS).

2.0 System Overview. The RSS consists of a single base station, thirty hand held remote interactive modules and a software package which executes on a personal computer (PC) with a Windows95/98 operating system. The software package will also run on a Macintosh PC. The software package is designed to communicate over a local area network with a server running the software included. The handheld units communicate over a wireless Radio Frequency (RF) link to a base station and utilize rechargeable batteries for “no wires” operation. Figure 1. illustrates the RSS operation.

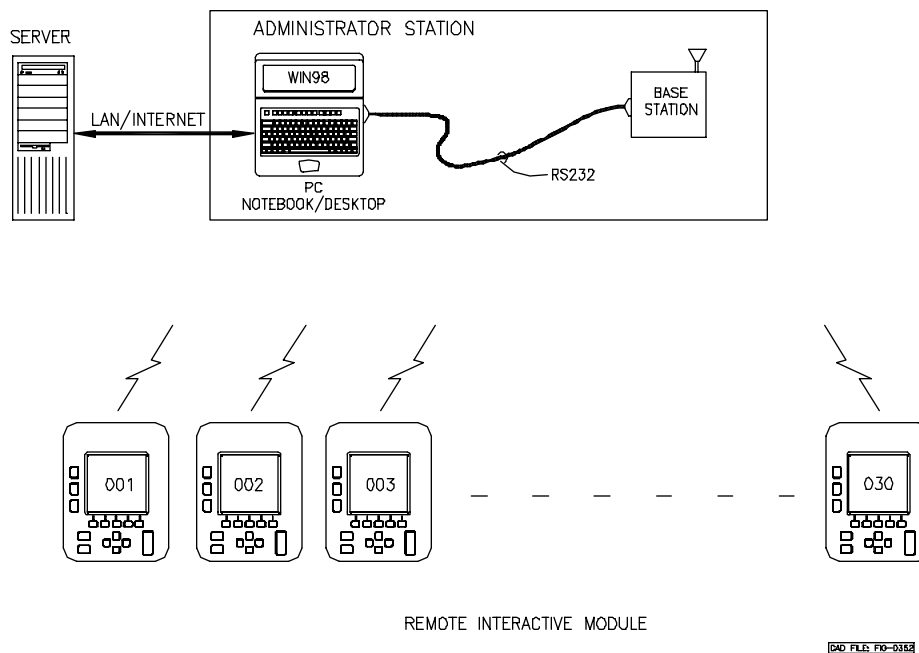


Figure 1. RSS Operation

2.1 Base Station Description. The base station controls message traffic flow between the PC and the remote units. Note that the base station is a modified version of the remote. An RS232 interface, Alternating Current (AC) wall adapter and a different software package are the only differences between the base station and remote units. The Liquid Crystal Display (LCD) display and keypad are used for diagnostic test and status display on the base station. Figure 2 illustrates the features of the base station.

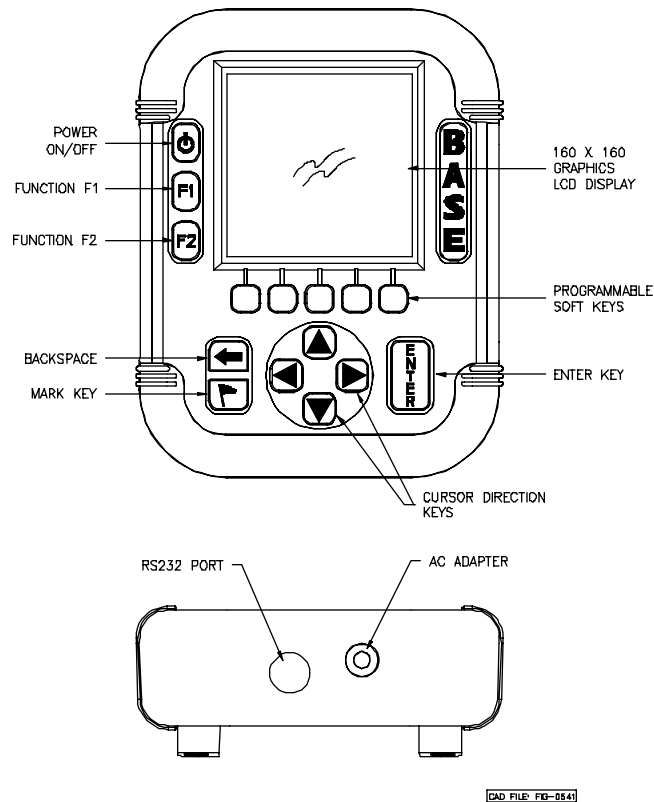


Figure 2. RSS Base Station

The base station contains software to collect and distribute information between the remotes and the server. The software has two main functions; first the software manages the radio frequency traffic between the devices and the PC. In addition, this software writes records to and receives records from a local version on the base station. The local version is the middleware that takes information and reads/writes data into the master server.

2.2 Base Station Set Up. Connect the supplied RS232 cable to the base station circular DIN connector at the bottom of the unit. Connect the other end of the RS232 cable to the serial port of the PC. Connect the direct current (dc) jack on the end of the AC adapter cable into the bottom of the base station. Connect the AC adapter into an AC wall outlet. Press the power button to power the unit on. A second key press to the

power switch will turn the unit off. The base station will display connection status to the PC RS-232 link and status of the RF links, on the PC display, indicated by a flashing circle for each remote which is responding to the base station. This base unit display is shown in Figure 3.

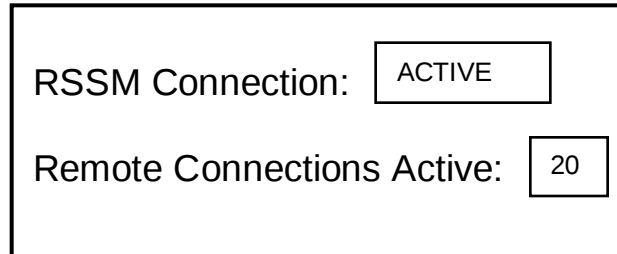
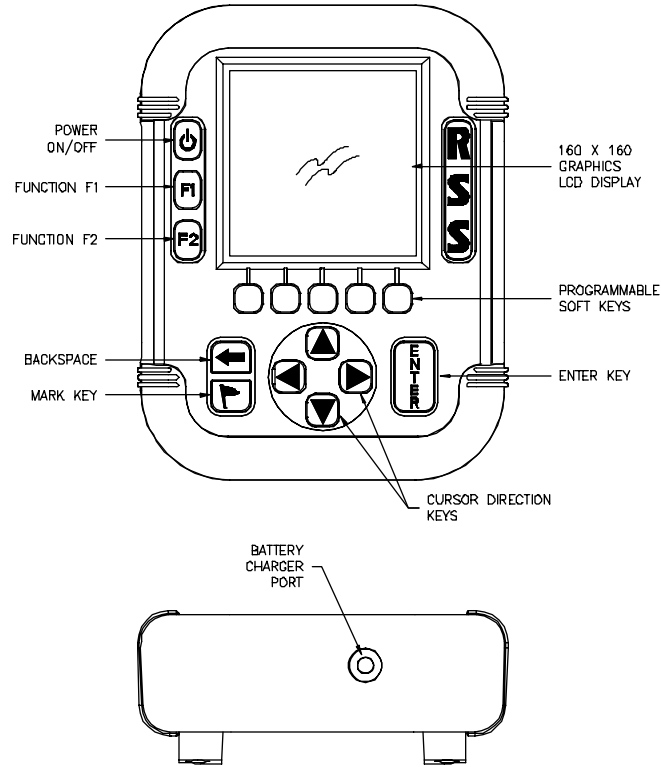


Figure 3. Base Station Display

2.3 Remote Interactive Module Description. The remote provides the data entry point for the user of the RSS system. The LCD graphics display, the programmable soft keys and cursor keys allow the user to quickly enter data for transmittal to the server. Figure 4 shows the remote features. Table I below explains the keypad assignments.



[CAD FILE: FID-0540]

Figure 4. Remote Features

Table I. Keypad Functions	
KEY	FUNCTION
Power	applies power to unit
F1	programmable function key
F2	programmable function key
S1-S5	programmable soft keys , for answer selection
Backspace	move cursor to previous position
Flag	mark undecided answer
up arrow	cursor up
right arrow	cursor right
down arrow	cursor down
left arrow	cursor left
enter	execute

To turn the unit on, press the power key. To turn the unit off, press the power key again. Note that during operation the power off function is disabled until the allotted time has elapsed or enabled by the base station.

2.4 Remote Operation. The remote units operate in concert with the base station, therefore the base station must be powered on and communication established with the server prior to remote activation. When the remote user turns on the unit the device requests the user to enter his or her personal User Identification (ID) and password using the virtual keyboard display. Upon completion of this information, the ID and password are sent to the server. Upon recognizing the user the server will pass back the options the user is assigned. The user then scrolls the list of options and selects the appropriate one. Once the option is selected, the server sends the selected items to the user.

Periodically the Base station will poll the devices and collect information. The information entered by the user will be retrieved and temporarily stored by the base station. In addition, information about the user and the device number the user is operating can be displayed on the personal computer display.

When the user has completed the operation, the user will command the remote to deliver any remaining or updated information to the Base Unit. This information will be passed through to the master server for immediate evaluation. Once the information is processed by the master server, the administrator will have the ability to sign on directly to the master server to review results on-line and/or print reports.

2.5 Battery Charging. The remote units are shipped with battery packs installed but uncharged. The battery charger is capable of bringing a battery pack from completely discharged to fully charged in approximately 3 hours. The remote utilizes NiMH batteries in a 3 cell configuration. The remote provides a low battery indication when the batteries reach 20% of capacity. Battery life is dependent upon operator use. The battery charger is connected to the remote with a two-foot cable. One end of the cable has a 3 pin connector which inserts into the battery charger. The other end of the cable has a single prong audio jack connector which is inserted into the bottom of the remote. The remote is not powered on during charging. While charging the battery charger will illuminate a red LED. When charging is complete the green LED will illuminate and the red LED will extinguish. The battery charger and cable are shown in Figure 5.

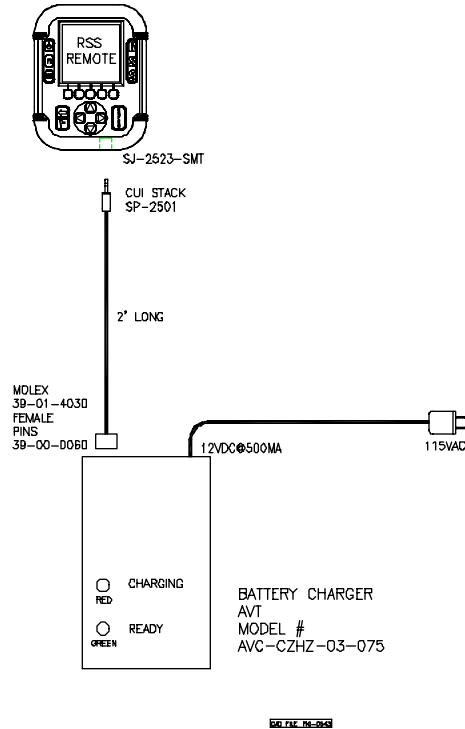
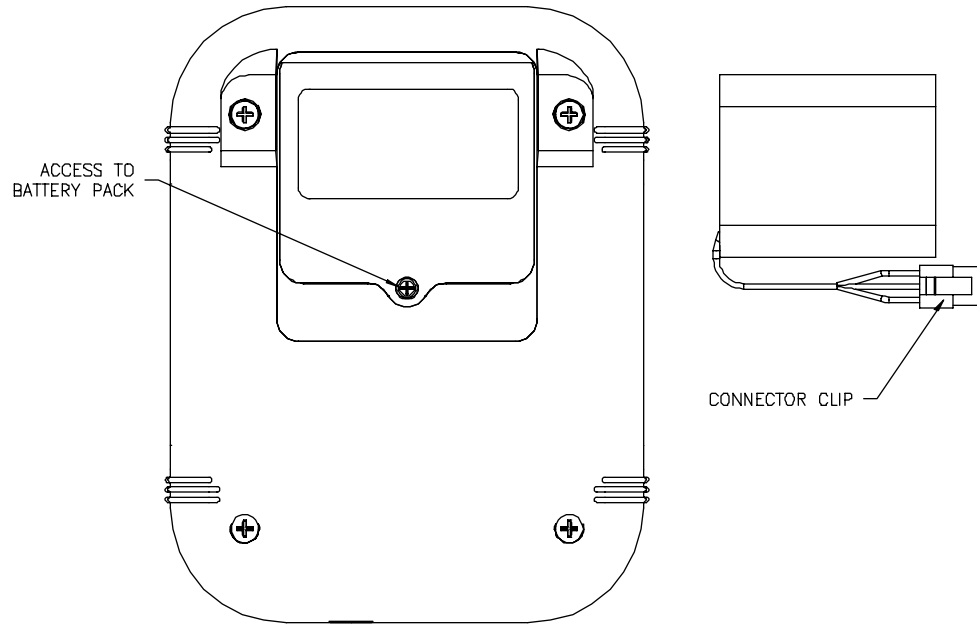


Figure 5. Battery Charger

2.6 Battery Pack Replacement. In the event that a battery pack will not remain charged and needs replacement then refer to Figure 6. Place the remote on a flat surface with the display face down exposing the battery pack compartment on the rear of the remote. Remove the battery cover screw with a cross tip screw driver. Press down on the battery pack connector clip on the pack in the unit. Gently remove the battery pack connector clip and remove the battery pack. Insert the new battery pack connector clip onto the mate within the unit ensuring that the clip snaps into place. Put the battery pack into the battery compartment. Replace the battery cover and re-install the battery cover screw.



CAD FILE: FIG-0542

Figure 6. Battery Pack Replacement