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RESET - RSR Local Communications Procedure

I. Purpose:

This procedure describes the steps necessary to connect a terminal emulation program to the MFRSR. This communication is used to check sensor data, adjust date and time, or to check the homing band.

II. Cautions and Hazards:

None.

III. Requirements:

- Laptop computer with terminal emulation program and 9-pin connection.
- Knowledge of MFRSR set-up and operation.

IV. Procedure:

A. Steps:

1. Connect a laptop computer to the logger using a 9-pin D to 9 D cable supplied by Yankee. (See Figure 1, 9 Pin D Connector). Connect to the 9-pin D on the MFRSR Logger and COM port 1 on the Laptop.
2. In windows on your lap top, select and set the following:
 - Under **Accessories** select "**Terminal.**"
 - In **Terminal** select "**Settings.**"
 - Select "**Terminal Emulation.**"
 - Select **DEC VT-100 (ANSI)**. [May not be the best emulation to use but it works for me.] For and IBM & Clones, Xtalk, Smart Term and Pro-Term work well. For the MAC Smart-Term, VersaTerm and White Knight work well with the MFRSR.
3. Under Terminal **Settings**, Select "**Communications.**"
Set the following:
 - Baud rate Select "1200" Baud.
 - Data Bits select "8."
 - Stop Bits select "1."
 - Parity Select "None."

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- Flow Control Xon/Xof (Optional).
4. Save this File As MFRSR.TRM.
 5. If not already powered "ON," turn ON the datalogger and wait 15 seconds. What you should see on your Laptop is

AT&F

ATE0

ATQ1

AT&C1

ATS0=1

AT&WO

6. This is the modem setup preamble coming from the logger. (TWP and SGP are not using modems but on power-up the logger outputs this preamble.)
7. To wake up the logger (get its attention) give it a series of carriage returns. It will respond with

Hello:

Hello:

8. Type in the user password: **Langley!** Then press "Enter." (TWP Password, Yankee made MFRSR). As you type in the password it will not be echoed, so if not correct you will get another prompt: **Hello:**

Note: Password will not show on your computer screen as you type.

The logger response to proper login is

MFSRS Rev 7(j) L, Harrison 1/27/95 (this shows the date of the software version)

?> The question mark indicates the time is wrong which happens every time logger is turned on. There is no battery backup on the logger board to keep the current time.

?> Type in the **system manager password.**

?> **H 0 Irradiance!** Then hit "Enter." (For TWP Yankee made MFRSR.)

9. As you type in the system manager password, it is echoed and you can back up and correct mistakes before entering - carriage return.
10. The **A \$nnnn** command displays a continuously scan of all 32 channels. This command is very useful for doing calibration of the second stage detector amplifiers located on the loggerboard. It also provides a very quick

look at all channels and the voltages present on each channel. The values are displayed as decimal counts.

Note: If the unit (A/D) is properly calibrated 1 count = 1 millivolt.

Note: A **\$nnn**: the command values sets the scanning rate. The larger the number the slower the scanning. A **\$9999** gives the slowest rate; A **0** is the fastest rate and does go very fast. The Yankee MFRSR has a 12 MHz clock.

Note: Entering correct time is not needed to run the **Analog A \$nnn** command.

11. Now type **A \$9999**, and then "Enter." You will see the following:

```

1915  0   1   1   0   2   1   0 input channels 0-7
2185  1   2   1   1   1   0   2 input channels 8-15
   0   1   1   2   2   2   1   1 input channels 16-23
   1   1   0   1   0   0   1   0 input channels 24-31

```

The above scrolling will continue until **enter** is pressed on your lap top.

When running the Logger in the shadowband mode, the first nine (9) channels are generally dedicated to shadowband data and with the MFRSR Detector Head connected and doing a **A \$nnn** command the channel assignments displayed are as follows:

Chan 0 = Filter Detector Head Temperature.

Chan 1 = " " #1 signal.

Chan 2 = " " #2 "

Chan 3 = " " #3 "

Chan 4 = " " #4 "

Chan 5 = " " #5 "

Chan 6 = " " #6 "

Chan 7 = " " #7 "

Chan 8 = Logger Board Voltage (DC supply voltage).

Chan 9 = Not assigned ----- any 0-1/3.6/4v input.

Chan 10= " ----- any 0-1/3.6/4v input.

Chan 11= " ----- any 0-1/3.6/4v input.

Chan 12= " Aux amplifier 0 IC 27.

Chan 13= " Aux amplifier 1 IC 28.

Chan 14= " Aux amplifier 2 IC 29.

Chan 15= " Aux amplifier 3 IC 30.

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If you want to run the MFRSR as a shadowband instrument then enter Time, Lat Lon, Number of detector filters, Initialize, and Go commands.

12. Set time by: (universal time) **U 0 yyyy mm dd hh mm ss**, hit ENTER (one string, then type ENTER).
13. Set Lat Lon. **L 0 45.66 119.23** (example) use local or actual site lat lon. Again, press enter.
14. Number of filter detectors: **N7**
15. In command: **I \$A0 0 0 20 1**

Note: This is a complicated command string. Look in Yankee or Battelle's manuals for more info. This command has five parts:

- **\$FLAGS** = 8-bit variable sets mode.
- **\$ALLAUX** = 32-bit register which changes record all the time.
- **\$DAYOAUX** = 32-bit register which changes record day-time only.
- **SI** = Sample interval in seconds 15 or greater for MFRSR shadowband operation.
- **RI** = Samples per average or number of samples that are averaged before data is stored in the data buffer.

16. Type the "GO" command: **G 1** (The Band will start and search for home position.)

Then this displays the following:

Homing the Band....(pause) Done.

Then every 20 second it performs a data run - band starts, makes three stops, and goes back to home position.

Note: When the **G 1** command is given the data buffer is cleared.

17. Stopping the band:

G 0 (Stops the data taking);the next **G 1** clears all data buffers and restarts.

18. Refer to Yankee manuals for a complete listing of MFRSR command.

V. References:

1. J. Schmelzer, email communication 3/16/95, "Local Communication Lap Top..."

VI. Attachments:

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None.