MFRSR Checkout

I. Purpose:

Describes the MFRSR procedure for checkout.

II. Cautions and Hazards:

None.

III. Requirements:

None.

IV. Procedure:

A. Steps:

1. Turn power on ATZ…etc
2. Press Return a few times until “Hello.”
3. Type “Langley!” Press return.
4. H_0_Irradiance! Press return.
5. U_0 Press Return. Follow Prompts (_=Space)
6. I_$A0_0_15_4 Press return
7. N_4
8. L_0_[LAT]_[LONG] Press Return *Case Sensitive*
9. G_1 Press Return

B. To Stop – G_0

1. BAUD-1200
2. PARITY-None
3. Stop Bit-1
4. COmPORT-1

V. References:

None.

V. Attachments:

Local communications Lap Top (talking) to the MFRSR data logger.

Connect a Lap Top computer to the logger using a 9 pin D to 9 D cable supplied by Yankee. See Fig. 3. Connect to the 9 pin D on the MFRSR Logger and COM port 1 on the Lap top.

If you are using 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 any IBM & Clones Xtalk, Smart Term and Pro-Term work well. For the MAC Smart-Term, VersaTerm and White Knight work well with the MFRSR.

Under Terminal Accessories
Select "Commications".

Baud rate Select "1200" Baud.
Data Bits select "8".
Stop Bits select "1".
Parity Select "None".
Flow Control Xon/Xof Optional.

You can save this File As MFRSR.TRM.

Set up the Logger with the Head and Motor connected.

Turn on the logger wait 15 seconds. What you should see on your Lap top is;
AT&F
ATE0
ATQ1
AT&C1
ATS0=1
AT&W0
This is the modem setup preamble coming from the logger. TWP and SGP aren't using modems but on power up the logger will output this preamble.

To wake up the logger (get its attention) give it a series of carriage returns. It will respond with

Hello:
Hello:

Type in the user password Sesame! = SGP Pass word (Battelle made MFRSR) or Langley! = 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:

Hello: Langley! password will not show on you computer screen as you type.

The logger response to proper login is;

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?> 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 Michalsky! For SGP Battelle made MFRSR.
?> H 0 Irradiance! For TWP Yankee made MFRSR. → Arcs I

As you type in the system manager password it is echoed and you can back up and correct mistakes befor entering - carriage return.

Entering correct time is not needed to run the Analog "A $nnnn" command. The (A $nnnn) command will display a continousley scan of all 32 channels. This command is very usefull for doing calibration of the second stage detector amplifiers located on the loggerboard. Provides a very quick look at all channels and the voltages present on each channel. The values are displayed as decimal counts. Note that if the unit (A/D) is properly calibrated 1 count = 1 millivolt.

A $nnnn The command values sets the scanning rate the larger the number the slower the scanning. (A $9999 will give the slowest rate A 0 will be the fastest rate and does go very fast. The Yankee MFRSR has a 12MHz clock and the Battelle MFRSR has a 4 MHZ clock.

Now do a

A $9999 enter/carriage return.
what you will see is 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

If you want to run the MFRSR as a shadowband instrument then we need to enter
Time
Lat Lon
Number of detetor filters
Initialize and Go commands

Set time by
U 0 yyyy mm dd hh mm ss one string
Set Lat Lon
L 0 45.66 119.23 (example) use local or acutal site lat lon.
Number of filter detectors
N 7
Ini command
I $A0 0 0 20 1 This is a complicated command string. Look in Yankee or Battelles manuals for more info. This command has five parts.

1. $FLAGS = 8 bit variable sets mode
2. $ALLAUX = 32 bit register which chans record all the time
3. $DAYOAUX = 32 bit registor which chans record day time only.
4. SI = Sample interval in seconds 15 or greater for MFRSR shadowband operation.
5. RI = Samples per average or number of samples that will be averaged befor data is stored in the data buffer.

Type the GO command
G 1 The Band will start and search for home position.

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

Then every 20 second it will do a data run - Band will start, make three stops and go back to home position.

Note: when the G 1 command is given the data buffer will be cleared.

G 0 Stops the data taking and the next G 1 clears all data buffers and restarts.

This is where I stop for now:
The Battelle manual and the Yankee manual realy explain all of the commands for the MFRSR. I will most likely make mistakes so won't attemp to re-explain the commands. The above should get anyone started and be able make the MFRSR go through its routine and do A $nnn 32 channel scans for system all channel checks and calibration runs for the 2nd stage detor amplifiers.
John