Short Instructions for SDR33 Setup

This section is intended as a quick reminder of the steps you need to perform. It assumes you are familiar with the way in which the SDR33 works. It is well worth your time to become familiar with the SDR33, it can make your surveying much more efficient.

There are two small "camera" batteries. These should be installed first. Make sure you get them in the correct way. Then install two 9v batteries. Always make sure that you have a spare set of 9v batteries before you go to the field. The camera batteries will maintain data stored in memory if the 9v batteries run out, but they cannot run the SDR33. Never be store batteries in the data recorder since it will constantly draw power from them, even when off, to maintain memory. Remove all batteries when done with the data in the recorder. *Check that you have downloaded all data before you remove the batteries!* The best method is to manually delete the surveying jobs. You can only delete a job if it has been downloaded.

You should run through the following setup each time you use the SDR33. People using the data recorder before you may have used different settings.

Systematically move down the Function menu, starting with the *Job Menu item*. Check that each field is the way you want it. I would suggest checking the settings even if you were the last person to use the data recorder.

Turn the data recorder on. If you do not get to the screen with the Functions menu, either press the button, or press the F1 key (this is the FUNC softkey). The following is a rundown of the Function menu items. The options for each field are explained in the SDR33 manual. Below are suggested settings, and where appropriate I have made some suggestions on which settings to use.

Job

Specify a job name, or select a pre-existing job name. To select a pre-existing job, just highlight the name and press OK. To define a new job, press the "New" softkey (F1).

- When defining a new job, you will be asked to fill out the following items
- *Job*: Specify a name
- *S.F.*: Leave this set at 1.00000000000. This scale factor can be used to reduce you measurements to a plane coordinate system.
- *Point Id*: Usually use "Numeric". This used 4-digit numbers to distinguish between points.

- *Record elev*: You usually want the elevation. Set field to "Yes"
- *Atmos crn*: Set to "No"
- *C and R crn*: Set to "No"
- *Sea Level crn*: Set to "No"
- REMEMBER: use the ENTER key (bottom left corner) after you change a field. The OK key will enter a field and often assume you are then done with that menu.
- After defining a job, you will be able to enter a comment. To skip this, just press OK.

Instrument

Make sure the SDR33 is connected to the total station. Under Model type, select SET 2-way, and press OK. The SDR33 will then get the serial number and current setting s from the Total Station. It will also check the measurement modes being used by the SDR33.

Job Settings

- *Job:* Job name will be here
- *Atmos crn:* Set to "Yes".
- *C and R crn:* Set to "No".
- *Sea Level crn:* Set to "No".

Configure Reading

- *Type*: Total Stn
- *Auto pt num:* The number displayed here is the next automatic point number that will be used. It is usually set to 1000. I suggest using point numbers less than 1000 to indicate instrument points, and greater than 1000 to indicate surveyed points. If you are "Plane table" mapping with the total station, then you may want to set this number to 2, and use 1 as your first instrument point.
- *Topo view stored*: Set to "OBS". This stores the observations - horizontal angle, vertical angle, and slope distance.
- *Combine F1/F2:* Generally set to "No". If it is set to yes, the SDR33 will force you to take a F1 reading, then a F2 reading. It will then average the values and inform you if the difference between reading is greater than any tolerances you have set.
- *# dist rdgs:* Generally leave as "1". This is the number of distance reading the instrument will take. If greater than one, the distances are averaged. If you are

only measuring angles then you can set this value to 0. This disables the EDM for normal readings.

- *Trackin*g: Generally "No". If set to "Yes" then the EDM constantly takes measurements.
- *Code list active*: Generally "No", unless you have developed a code list.
- *Info blocks*: Set to "0". This is the number of comment block associated with each reading.
- *Code fields:* Set to "0".
- *Recip Calc*: Set to "Prompted"

Tolerances

This screen lets you specify tolerances. If you have the SDR average F1/F2 readings, or when it compares a backsight reading with previous values, if the new values differ by more than the tolerances, you will be warned, and asked what you want to do.

- *Type*: Generally "Total Stn"
- *Tol H.obs*: Generally 30 sec
- *Tol V.obs*: Generally 30 sec
- *Edm tol (mm)*: Generally 5 mm
- *Edm tol (ppm)*: Generally 3mm

Units

- *Angle:* Generally use "Degrees"
- *Dist:* Generally use "Meters". This is the 1990's …
- *Pressure:* Generally use "Millibar". This is the same as hPa. The digital barometers we have use hPa.
- *Temp:* Generally use "Celsius". Our thermometers are in °C.
- *Coord:* Generally use "N-E-Elev". This is how coordinates are given.
- *Other grades:* Generally use "%"
- *Sideslope grade:* Generally use "%"
- *Sta..ing:* Generally use "10+00"
- *Decimals shown:* Generally use "3"
- *Zero azimuth:* Generally use "North"

Communications

See handout on downloading data.

Date and Time

Here you want to set the current time and date. The TimeOut is the time in minutes after which if there had been no keyboad activity the SDR33 will turn itself off. The Timestamp is the time increment between the SDR33 saving the current time in the data recorder. It is best to set 0, this turns off the Timestamp feature. If you happen to be trying to record a reading at the same time that the SDR33 is saving a timestamp you can have problems.

- *Date*: Current date
- *Time:* Current time
- *Time out:* Suggest 10
- *Timestamp:* Suggest 0

Job deletion

Use this menu item to select jobs for deletion. You cannot delete a job that has not been downloaded.

Calculator

The SDR33 has a built-in HP style calculator.

Feature code list

This allows you to have abbreviations for commonly used terms. If you have the *Code List Active* item in the Configure Menu set to yes then the SDR will insert the test associated with the abbreviation when making notes associated with a point. This is also used to identify different types of features you survey in. Plotting software can be configures to look at the feature and plot different symbols for that feature.

Hardware

This gives you a summary of the current hardware. Use this menu to change contrast, check batter condition, turn on the backlight, and change the volume level. The SYSTEM softkey gives you version numbers, and an idea of how much memory has been used, and how much is still available.

Upgrade

This option allows programs to be sent from a PC to the data recorder.

User program

The user can write their own programs for processing or collecting data using the data recorder. This allows you to load and run one of these programs.

Language

This should always read: English US.