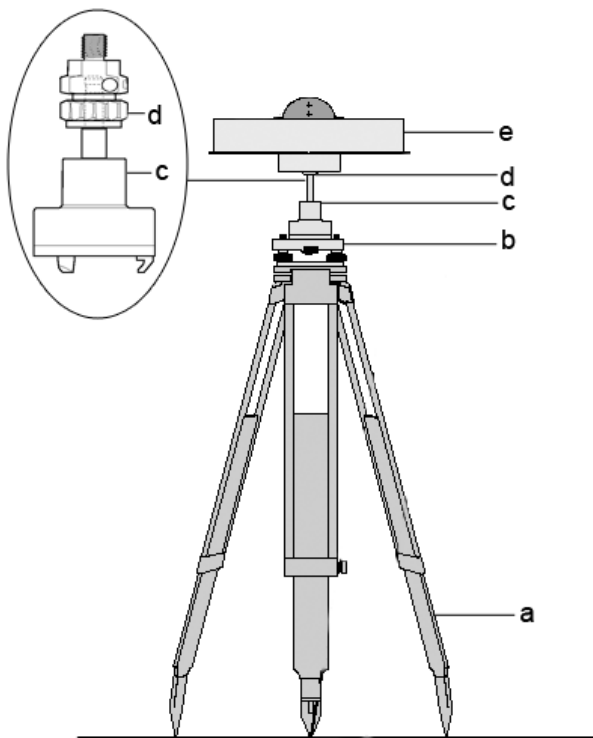


STATIC BASESTATION WITH REAL-TIME TRANSMITTER OPTION

1



Set up the tripod (a)

Mount and level the tribrach (b) on the tripod using the built-in bubble

Ensure the tribrach is over the known point (usually an OS Passive Station marker) by looking through the optical sight

Place and lock the carrier (c) into the tribrach

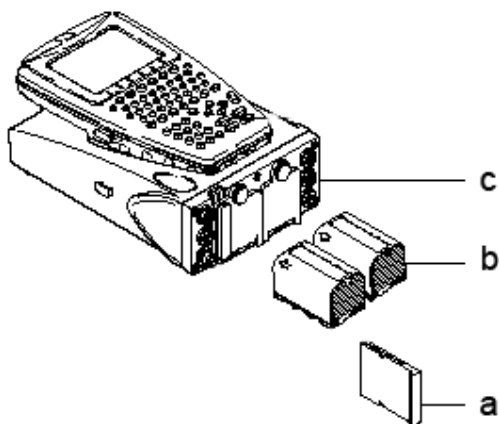
Screw the adapter (d) into the base of the antenna (e)

Loosen the locking ring of the adapter (d) and slide down onto the carrier (c)

Press the button on the side of the adapter (d) to allow it to drop all the way onto the carrier (c)

Finally tighten the locking ring on the adapter (d)

2



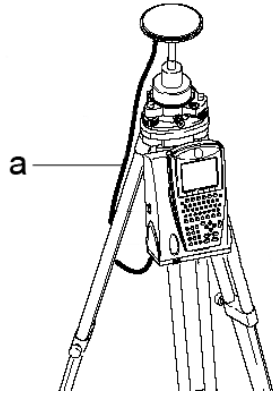
Unscrew the left hand battery holder on the receiver (c) and insert the Compact Flash card (a). **CAUTION: The arrow must face into the unit and the label with the arrow on it must face towards the right**

Insert one GEB121 Lithium-Ion battery (b) into the compartment (press in and then up to lock in place) and screw the door closed

Open the second battery compartment, place another GEB121 battery (b) into it and screw it closed

The battery compartments are spring loaded, to remove a battery, press the battery into the unit and down, it will then spring out

3

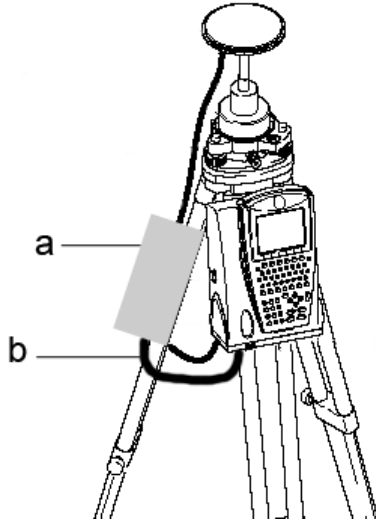


Hook the receiver onto one of the tripod legs

Connect the antenna to the receiver socket marked 'ANT' using the antenna cable (a)

The connectors are identical at each end, be careful not to cross-thread them when lining them up

4



You may be supplied with an external high-capacity battery (a) to increase the available recording time

Clip the battery (a) to one of the tripod legs

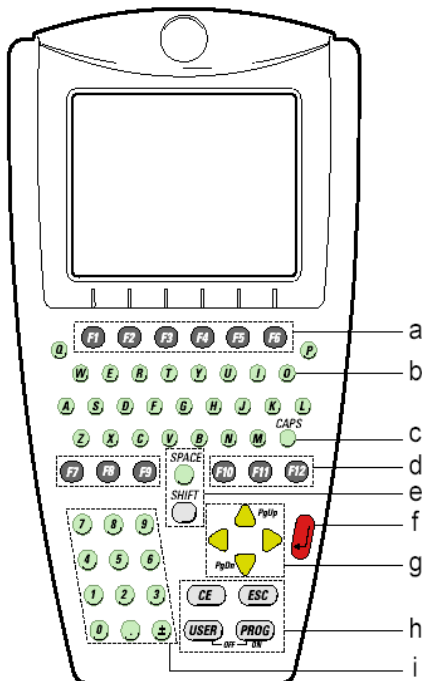
Use the 1.8m 5-pin grey battery cable (b) to connect the battery to the socket marked 'PWR' on the receiver

Alternatively you may use any 12V power source (e.g. car battery) by using the GEV71 external cable plus the 5-pin cable and supplied adapter.

CAUTION: Be sure to use the correct polarity (RED=positive, BLACK=negative)

Use the supplied tripod adapter to mount the blue radio transmitter to one of the tripod legs. The aerial comes in two sections, screw both to the top of the radio transmitter.

5



Turn on the unit by pressing the PROG key (h)

The system will take a few moments to boot up

Once complete you should see the main menu icons on the screen

- a) Function keys F1-F6
- b) Alpha keys
- c) **CAPS**
- d) Hot keys F7-F12
- e) **SPACE, SHIFT**
- f) **ENTER**
- g) Arrow keys
- h) **CE, ESC, USER, PROG**
- i) Numeric keys

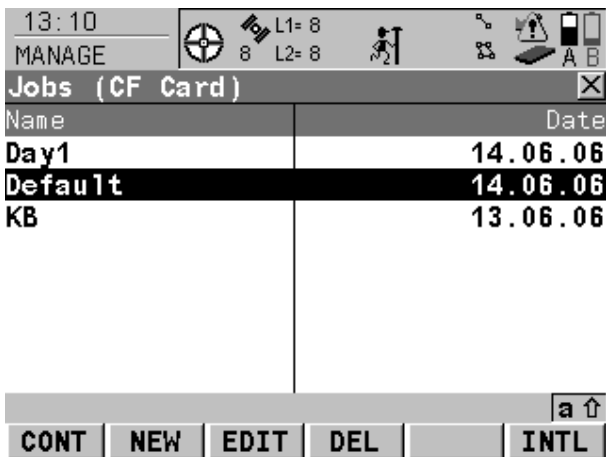
6



To move around the menu system use the arrow keys on the keypad followed by the ENTER key or F1 (CONT)

You can also use the numeric keys to jump straight to a numbered menu item

7



Before starting a new survey, it is recommended to delete any previous jobs from the memory card to ensure the maximum amount of free space

CAUTION: Be sure to backup your data from the card before deleting jobs

From the main menu select MANAGE then JOBS

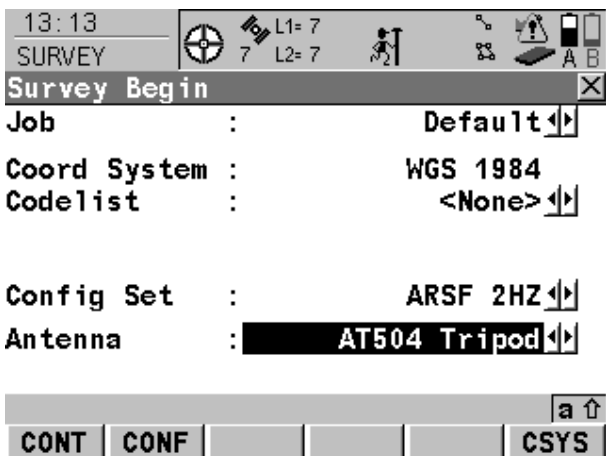
A list of jobs (surveys) on the card is displayed

Highlight each job that you wish to remove and press F4 (DEL)

To confirm the deletion press F6 (YES)

To return to the main menu press F1 (CONT)

8



From the main menu choose SURVEY

Create a Job to save the survey data into

Highlight the Job and press ENTER

A list of Jobs on the memory card is displayed (should only contain the Default job if you have followed step 7 above)

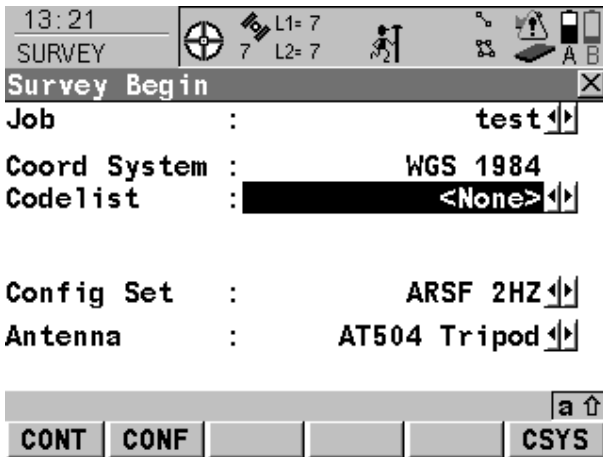
Press F2 (NEW) to create a new Job

Type in a name and optional description of the Job (press ENTER to finish typing a line)

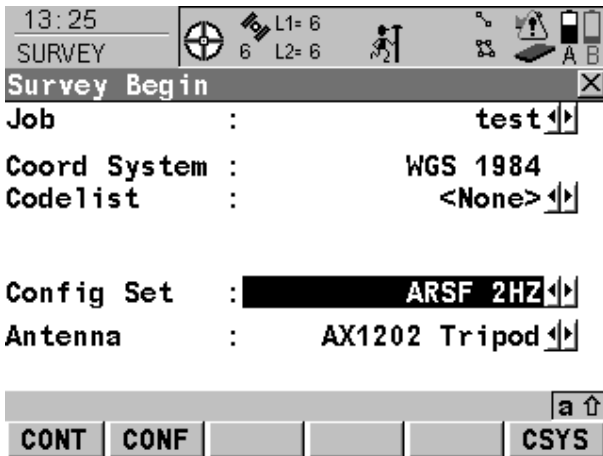
Press F1 (STORE) to save the Job details

Your new Job should be highlighted, press F1 (CONT) to select this as the current Job

9



10



Coord System must read WGS 1984

To change the system, press F6 (CSYS) and select WGS 1984

Codelist should read <None> (we do not need codelists)

To change the codelist, highlight the codelist and either use the left and right arrow keys to cycle through the list or press ENTER to view the entire list and select <None>

The system should be pre-configured by the GEF with suitable parameters for use with the ARSF flights (see **separate Configuration Guide** for details)

For ARSF flights, the normal configuration is ARSF 2HZ (*you may have been given a different name, for instance one matching the name of your site*).

This specifies a 2Hz (0.5 second) data recording rate

Select the Config Set by highlighting the line and either using the left and right arrow keys or pressing ENTER to see a list of all the configuration sets

If you do not have the ARSF 2HZ configuration, you will need to create it

To create a new configuration, highlight the Config Set line and press ENTER

Press F2 (NEW) and use the **separate Configuration Guide** to fill the correct details into each page

13:32 SURVEY L1=7 L2=7

Survey Begin

Job : test

Coord System : WGS 1984

Codelist : <None>

Config Set : ARSF 2HZ

Antenna : **AT504 Tripod**

CONT CONF CSYS

CAUTION: You must select the correct antenna at this stage of the survey

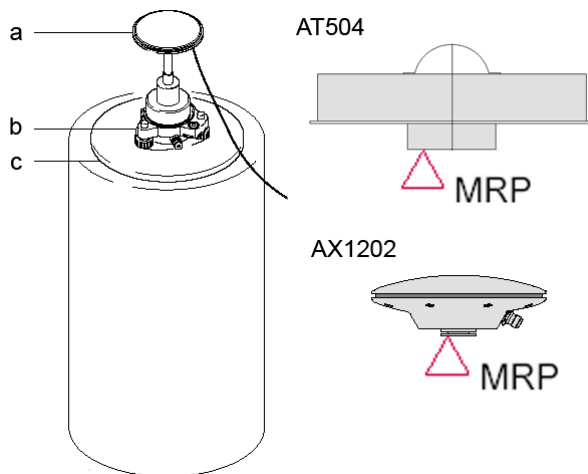
You may be supplied with an AT504 Choke-Ring Antenna or a smaller AX1202. The model of antenna can be checked by reading it from a plate attached to the side or underneath the antenna.

Note there are two models of AX1202, a Glonass version is labelled AX1202 GG. Please ensure you select the correct version.

At the same time as selecting the correct antenna, you must select whether it is mounted on a Tripod or Pillar (no tripod)

When using a tripod with a Leica Height Hook, all the extra height offset of 0.36m is added for you. You just need to measure to the white line of the height hook.

If you need to place the antenna directly onto a pillar, see step 12 otherwise skip to step 13



Place the tribrach (b) directly onto the OS pillar or plate (c)

Antenna (a) height will need to be measured manually from the Mechanical Reference Plane (MRP) to the benchmark on the pillar (c)

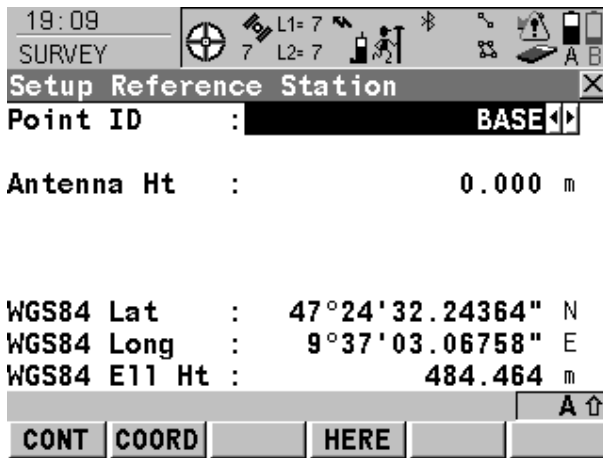
Each antenna has a different MRP

For the AT504 it is the bottom of the metal housing

For the AX1202 it is the underside of the metal ring

CAUTION: Do not select Tripod as the mounting type when measuring manually to the MRP as the software will add in 0.36m of unwanted height

13



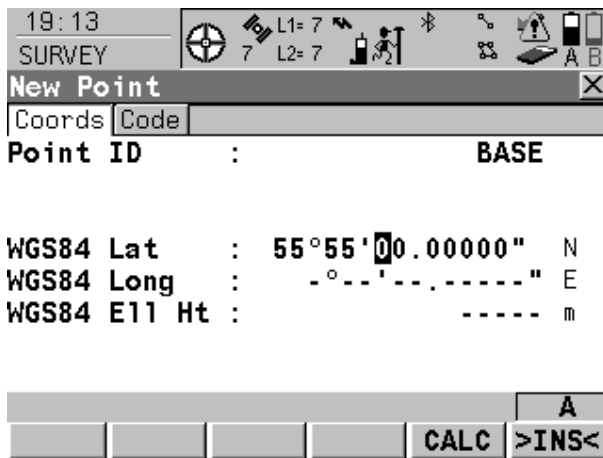
Press F1 (CONT) to continue to the first survey screen.

Because we are using radios in a real-time mode, the unit needs to know where it is situated.

If you are on a known survey point, you should type in the correct WGS84 coordinates (see step 14).

If you are on an unknown temporary marker, see step 15.

14



While the Point ID is highlighted, press the red ENTER key to view a list of points.

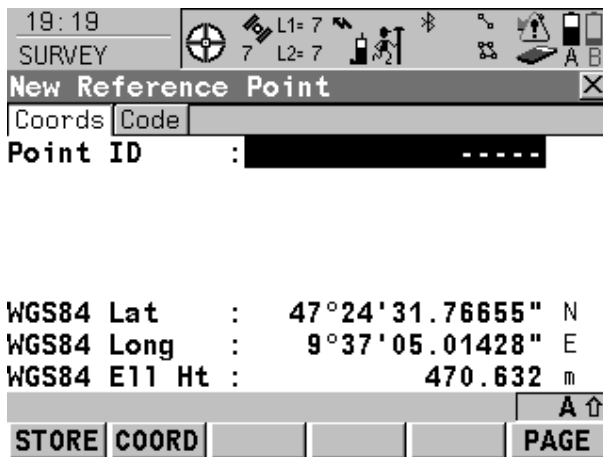
Press F2 (NEW) to create a new point. Enter a name for your base point.

You may need to press F2 (COORD) to change to WGS84 coordinates. Use the cursor keys to move to the Lat, Long and Ht values and enter the correct coordinates.

Press F1 (STORE) when finished.

Skip to step 16.

15

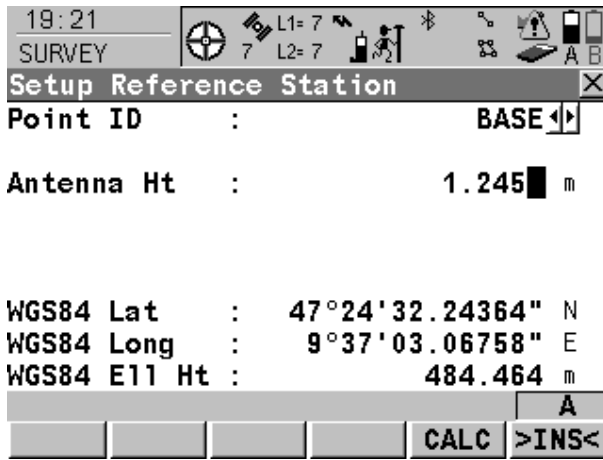


If this is the first time you have visited this temporary marker, you can use the F4 (HERE) key to save the current GPS position as a new point. As long as you have locked on to the satellites and the position indicator is visible, this should give you a precision of a few metres for this point.

Type in a name for the point then press F1 (STORE).

If you have visited this site before, you should not press HERE again. Instead, either type in the coordinates that were generated last time (see step 14 for how to enter these coordinates), or you may make use of the F3 (LAST) key if this site was the last place the GPS was used. This retrieves the last set of coordinates.

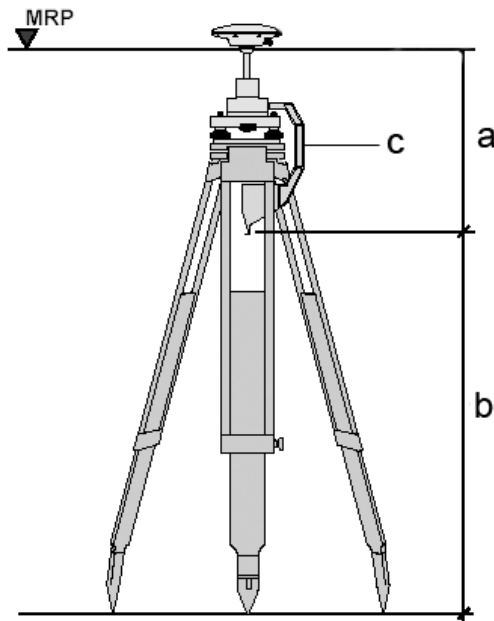
16



We now have to enter the height of the antenna. This must be entered each time we enter the survey. If you are using the tripod with the height hook, use the built-in tape measure and read to the white line on the hook (see step 14).

If the antenna is not on a tripod, you must measure from the MRP (see step 12) of the antenna to your reference point on the pillar (or whatever object you are sitting on) and enter that number here.

17



Insert the height hook (c) into the hole in the side of the carrier

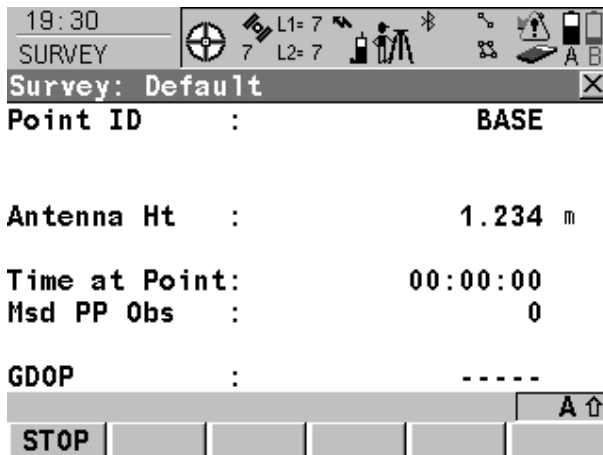
Pull the tape measure out from the height hook down to the ground.

The height reading to be entered (b) can now be read from the white mark on the height hook.

CAUTION: The tape reads in centimetres but you must enter the reading as metres

The offset to the MRP (a) is 0.36m and **will be added automatically to the height you have measured (b)** as long as you have correctly chosen **Tripod** in step 11

18



You should see the icon of a person with a pole change to a person standing next to a tripod with a line above it.

This confirms that the unit is recording static data

The Time at Point counter will increase as will the Msd PP Obs (Measured Post-Processed Observations) at a rate of 2 every second

The arrow above the radio icon should flash one per second and the TX light on the blue transmitter should also flash once per second.

If you wish to lock the keyboard at this point to stop inadvertently ending the survey, hold the SHIFT key down for a few seconds until the unit beeps and displays the message 'Keyboard Locked'.

19



Once the ARSF flight has left the survey area, unlock the keypad (if you locked it in step 16) by holding down SHIFT. **CAUTION: Once you release the SHIFT key, you may need to press it once more until you see the word STOP above the F1 key**

Press F1 (STOP) to stop the survey, you should be taken back automatically to the main menu.

You can now turn the unit off by pressing both USER and PROG buttons simultaneously

Disconnect all cables and pack away the equipment

CHECKLIST

- 1 Tripod secure and levelled over the survey marker?
- 2 Antenna mounted properly on the adapter?
- 3 Antenna cable securely attached?
- 4 Freshly charged batteries inserted plus external battery where applicable?
- 5 Memory card emptied of all old data (backed up!)?
- 6 Correct configuration set in use (ARSF 2HZ)?
- 7 Correct antenna type set?
- 8 Tripod or Pillar mounted?
- 9 Point ID entered and height recorded?
- 10 Satellites received and recording started successfully?



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