

SOKKIA SET C

On-board traversing

The SETCII series instruments have an IC card available for data storage. The IC card, along with the Point Replace feature, allows the surveyor to run a traverse without the need of entering new coordinates or station numbers at each set-up. The surveyor needs only to create a job file and enter initial station and backsight data. Following this process, the traverse can be completed by simply taking observations and moving the instrument.

Summary

When performing a traverse using the IC card, follow these steps:

- 1.0.0 Set up the card
 - 1.1.0 Configure instrument to record/retrieve data through the card
 - 1.2.0 Format the card if it has never been used
 - 1.3.0 Create new job on card
- 2.0.0 Enter preliminary job information
 - 2.1.0 Enter instrument data
 - 2.2.0 Enter station data
 - 2.3.0 Enter backsight data
- 3.0.0 Run the traverse
 - 3.1.0 Observe backsight
 - 3.2.0 Observe sideshots (if any)
 - 3.3.0 Observe next traverse station
 - 3.4.0 Move instrument to the next station
 - 3.5.0 Observe previous station as backsight
(Continue beginning with 3.2.0 until traverse is complete)
- 4.0.0 Download the data to a computer
 - 4.1.0 Downloading to Map software

Detailed Instructions

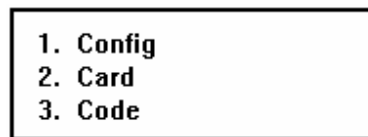
Level the instrument over the first traverse point, turn the power on and index the instrument.

1.0.0 Set up the card

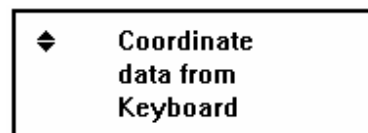
1.1.0 Configuring the instrument so that data is recorded and retrieved through the card.

1.1.1 Turn the instrument on and index the circles

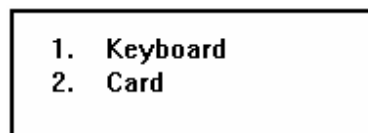
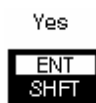
1.1.2 Press the Menu key



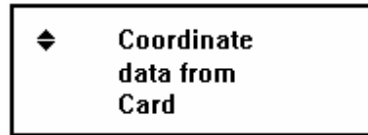
1.1.3 Press the 1 key to select Config



1.1.4 When “Coordinate data from” screen appears press the Ent key



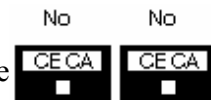
1.1.5 Press the 2 key to select Card



While in the Configuration menu set up the instrument as follows:
(refer to section 1.2 of the Systems 01 training manual or chapter 24 in the instrument manual)

- Set the Units as follows:
 1. Distance - meters
 2. Angle - degree
 3. Temperature & Pressure - °F & inch Hg
- Set the Curvature and Refraction (C+R) correction to Yes (0.14 is standard)
- Set the Vertical Angle format to Zenith
- Set the Coordinate format to N, E, Z
- Set the Tilt correction to Yes
- Under the Recording options choose the following:
 1. Send data to - Card
 2. Set code - Set
 3. Set target ht - Set

1.1.6 Press the CE-CA key twice to return to the basic mode



1.2.0 If using a new card, it must be formatted.
(refer to Systems 01 manual section 3.2 or section 21.2 of the instrument manual)

1.3.0 Create a new job named TRAV01 on the card.
(refer to Systems 01 manual section 3.3 or section 21.4 of the instrument manual)

2.0.0 Entering preliminary job information

2.1.0 Entering the instrument data

This feature will record the instrument name, serial number and software version on the card.

Press function
keys to select
operation

2.1.1 From the basic mode screen press the REC key

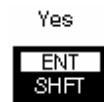


◆ Select
Instr ID
Yes / No [exit]

2.1.2 Scroll through the list using the arrow keys



2.1.3 When “Instr ID” appears press the Ent key



2.2.0 Entering the station data

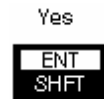
This feature records on the card the date, instrument station number, instrument station code, instrument height, temperature, atmospheric pressure, instrument station coordinates, curvature and refraction correction, prism constant and automatic tilt angle correction.

◆ Select
Station data
Yes / No[exit]

2.2.1 Scroll through the list using the arrow keys



2.2.2 When “Station data” appears press the Ent key



Date yy.mm.dd
94.07.20

2.2.3 Enter the date and press the Ent key

Yes



Stn point
No. 1000

2.2.4 Input the station number of the occupied point and press the Ent key

Yes



◆ KLMNOPQRST
 press 012 34 56789
 Cd CP

2.2.5 Scroll through the list using the arrow keys
 Use the number keys to enter the desired code.
 If no code is desired ignore this screen and continue.



2.2.6 Press the Ent key when finished with the code

Yes



Instr
Ht. 1.88m

2.2.7 Input the height of the instrument and press the Ent key

Yes



1. 0 set
 2. Temp & Press
 3. ppm value

2.2.8 Set the atmospheric correction using one of three methods:

No correction (0 set)



OR

Temperature and pressure (Temp & Press)



OR

Parts per million value (ppm value)



N	1000.000
E	1000.000
Z	100.000

2.2.9 Input the station coordinates where instrument is set up and press the Ent key

Yes



Record End

“Record End” will flash briefly then...

◆ **Select
S, V, H
Yes / No (exit)**

No

2.2.10 Press the CE-CA key to return to the basic mode



**Press function
keys to select
operation**

2.2.11 Press the Menu key



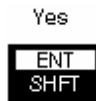
1. Config
2. Card
3. Code

2.2.12 Press the 2 key to select Card



Job TRAV01
Yes / No (select)

2.2.13 Press the Ent key to choose job TRAV01

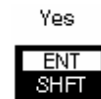


◆ Card
data write
Yes / No (exit)

2.2.14 Scroll through the list using the arrow keys



2.2.15 When “data write” appears press the Ent key



N	1000.000
E	1000.000
Z	100.000

Yes

2.2.16 Enter the station coordinates and press the Ent key



Point No.	1000
--------------	------

Yes

2.2.17 Enter the appropriate point number and press the Ent key



◆	KLMNOPQRST
press	012 3456789
Cd	CP

Yes

2.2.18 Press the Ent key when finished with the code



Data OK ?	
Yes / No	

Yes

2.2.19 Press the Yes key to confirm



Pt	1000
Record End	

The Record End screen will display briefly then...

N	0.00
E	0.00
Z	0.00

2.3.0 Entering the backsight data

The backsight data can be entered using either an azimuth or coordinates.

If the coordinates are entered, the instrument can calculate the azimuth. If a zero azimuth is entered, the instrument will assume that direction to be North. **Choose one of the following procedures.**

Input backsight coordinates

N	1500.000
E	1500.000
Z	100.000

- 2.3.1 Type in the coordinate value and press the Ent key after each entry

Yes



- 2.3.2 Continue to enter the coordinate data like the station coordinate shown above (2.2.17).

- 2.3.3 Press the CE-CA key repeatedly to return to the basic mode screen

No



Press function keys to select operation

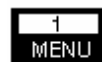
- 2.3.4 Press the S-O key

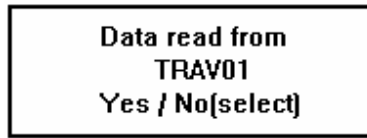
Yes



- | | |
|----|-----------|
| 1. | Station |
| 2. | Backsight |
| 3. | S-O point |

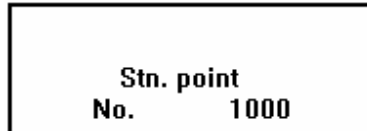
- 2.3.5 Press the 1 key to select Station coordinate entry





2.3.6 Press the Yes key to read station coordinates from TRAV01

Yes

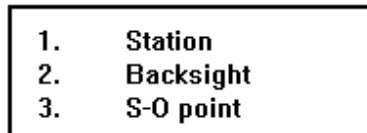


2.3.7 Type in the proper station number and press the Ent key

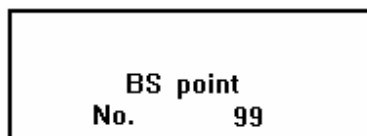
Yes



The station coordinates will display briefly then...



2.3.8 Press the 2 key to select Backsight coordinate entry

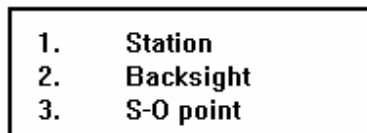


2.3.9 Type the number for the backsight and press the Yes key

Yes

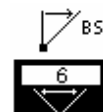


The backsight coordinates will display briefly then...



2.3.10 Point the instrument at the backsight and press the Backsight Azimuth key

Yes

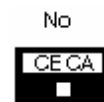


ZA	90°00'00"
HAR	45°00'00"

The instrument calculates the azimuth between the station and the backsight using the entered coordinates.

Input backsight azimuth

- 2.3.1 Press the CE-CA key repeatedly to return to the basic mode screen



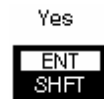
Press function keys to select operation

- 2.3.2 Press the Horizontal Angle key



H angle
HAR 45.0000

- 2.3.3 Point the instrument at the backsight, enter the azimuth and press the Ent key



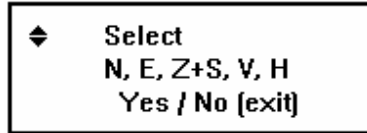
ZA	90°00'00"
HAR	45°00'00"

3.0.0 Running the traverse

Note: Throughout this section the observations are referred to as backsights, sideshots and foresights. Follow the same procedure for taking each of the observations but remember to take them in the proper order (backsight, sideshots, foresight).

3.1.0 Reading the backsight

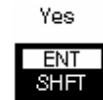
3.1.1 Press the REC key



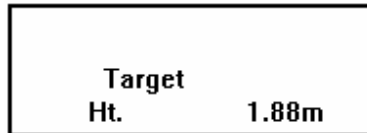
3.1.2 Scroll through the list using the arrow keys



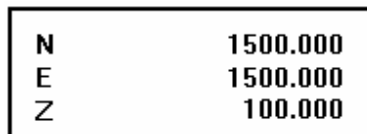
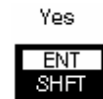
3.1.3 When “N, E, Z+S, V, H” appears press the Yes key



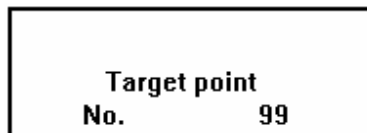
This selection will record coordinates and the raw observation to each point. When the instrument is moved to a new set-up it will need the coordinates from the previous foresight.



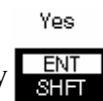
3.1.4 Input the target height and press the Ent key



3.1.5 The coordinates will display briefly then...



3.1.6 Enter the Target point number and press the Ent key



◆	KLMNOPQRST
press	0123456789
Cd	BS

3.1.7 Enter the code and press the Ent key

Yes



◆	Select
	N, E, Z+S, V, H
	Yes / No (exit)

3.2.0 Reading the sideshots

If there are any sideshots, continue to take readings following steps 3.1.3 to 3.1.17.

3.3.0 Reading the next traverse station (foresight)

Read the next traverse station as the last observation before moving. Follow steps 3.1.3 to 3.1.17 to take the reading.

3.4.0 Moving the instrument to the next station

Turn the power off and move the instrument to the next station. Level the instrument over the new station, turn the power on and index the circles.

3.5.0 Observing the previous station as the backsight

3.5.1 Press the Program key



1.	Resection
2.	Collimation
3.	Pt. Replace

3.5.2 Point the instrument at the backsight and



choose 3 for Pt. Replace

This function replaces the current station and backsight coordinates with the previous foresight and station coordinates respectively.

Stn pt replace?
Yes / No (exit)

3.5.3 Press Yes to verify this change

Yes

ENT
SHFT

ZA 91°30'00"
HAR 270°20'10"

3.5.4 Press the REC key to enter new station data

0 SET

0
REC

◆ Select
Station data
Yes / No(exit)

3.5.5 Scroll through the list using the arrow keys

EDM ↙
-/+ ▲ ▢ ▼
RCL S-O

3.5.6 When "Station data" appears press the Yes key

Yes

ENT
SHFT

3.5.7 Enter the new station data as indicated in steps 2.2.3 to 2.2.9.

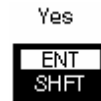
3.5.8 Sight the previous instrument station as the backsight

◆ Select
N, E, Z+S, V, H
Yes / No (exit)

3.5.9 Scroll through the list using the arrow keys



3.5.10 When “N, E, Z+S, V, H” appears press the Yes key to take the measurement



Continue beginning with step 3.2.0 taking measurements and moving the instrument until the traverse is complete.

4.0.0 Download the data to a computer

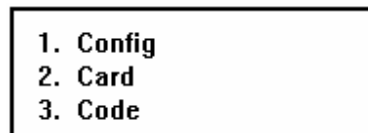
Map, Link or Comms Plus Software is needed for downloading the data from the IC card to the computer. Refer to one of the following manuals:

Map Reference Manual (version 5.5)	pages 9-11
Link Reference Manual (version 5.5)	pages 7-9
Comms Plus (version 1.01)	pages 23-29

4.1.0 Downloading to Map (or Link) software

4.1.1 Connect the proper cable (6350-32 or 6350-33) from the DATA OUT port on the instrument to a COM port on the computer. Or use the SCR2 Card Reader by connecting the cable from the card reader to a COM port on the computer and go to 4.1.7.

4.1.2 Turn the instrument on and press the Menu key



4.1.3 Press the 2 key to select Card



◆ Card
Job / file
Yes / No [exit]

4.1.4 Press the Yes key

Yes



1. create
2. select
3. delete

4.1.5 Press the 2 key to choose select



Job TRAV01
Yes / No [select]

4.1.6 Press the Yes key to select the desired job

Yes



◆ Card
Job / file
Yes / No [exit]

4.1.7 Scroll through the list using the arrow keys



◆ Card
comms
Yes / No [exit]

4.1.8 When “comms” appears press the Yes key

Yes



The instrument is ready to communciate

4.1.9 From the main menu in Map (or Link) software choose “SDR Menu”.

4.1.10 Select “Receive SDR file”.

4.1.11 Enter the COM port number that is connected to the cable and make the following settings:

Baud rate of transfer	9600
Parity	None
Input Device	Card reader

4.1.12 Select F1 to receive the SDR file

The downloading is now complete.