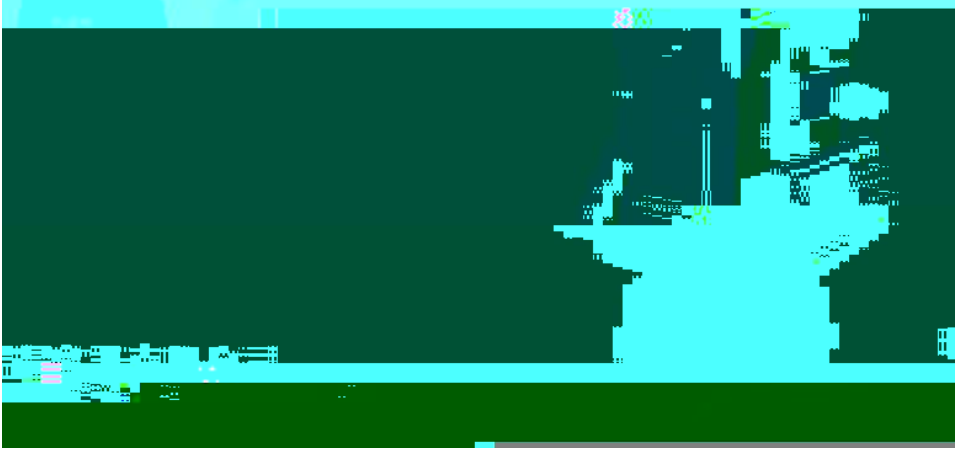
瑞得仪器

-820系列 | ELECTRONIC TOTAL STATION

瑞得全站仪RTS

操作手册

OPERATION MANUAL



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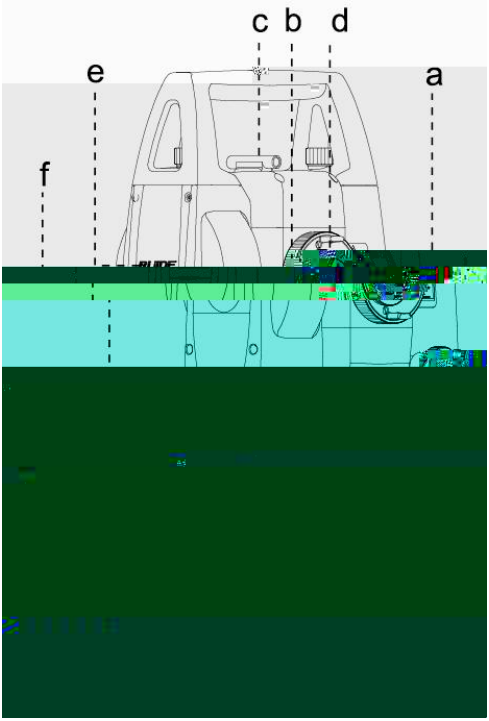
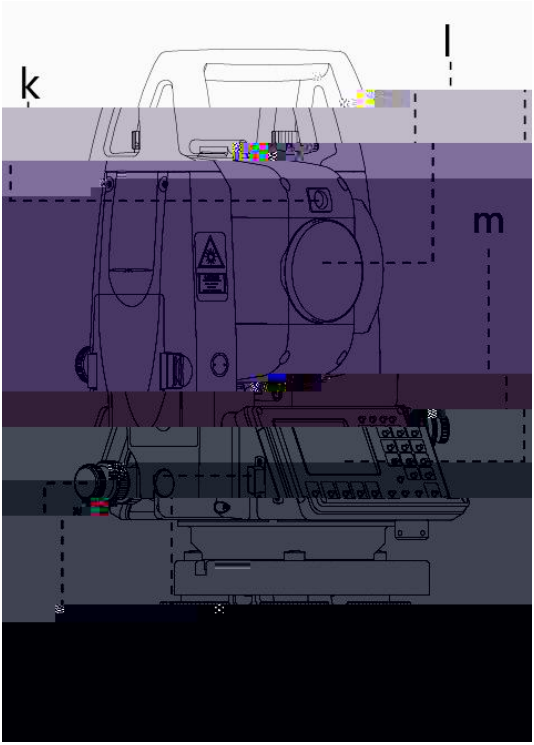
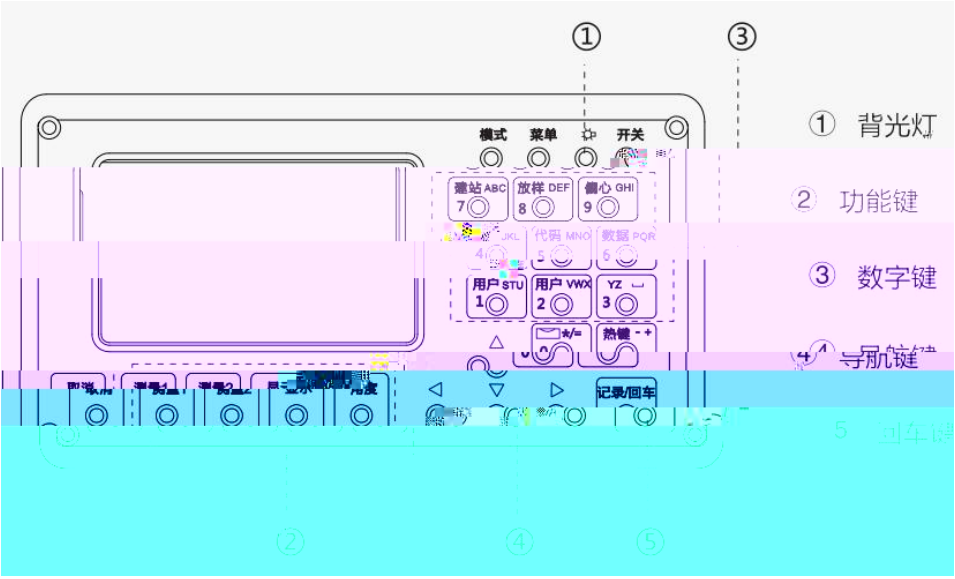
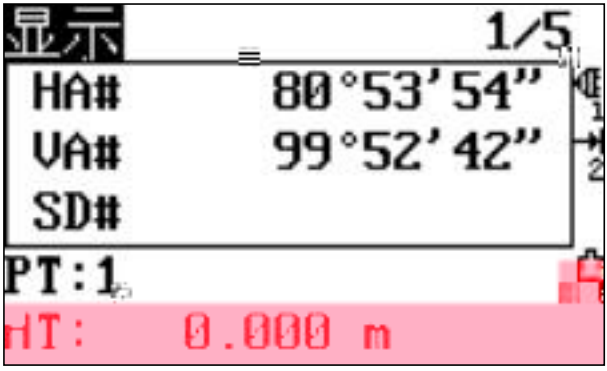
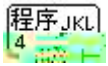

c
b
d
e
a
f


k
l
m


①
③
模式
菜单
开关
建站 ABC 7
放样 DEF 8
偏心 GHI 9
用户 STU 1
用户 VWX 2
YZ 3
热键
记录/回车
① 背光灯
② 功能键
③ 数字键
④ 导航键
⑤ 回车键

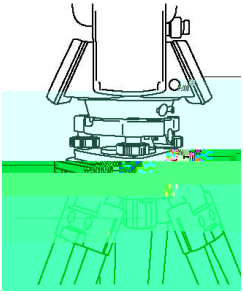

显示
1/5
HA#
80°53'54"
VA#
99°52'42"
SD#
PT:1
HT:
0.000
m

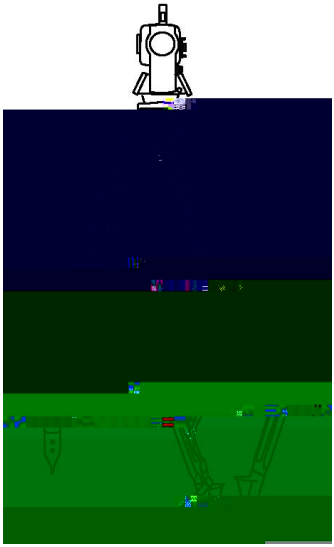
偏心 GHI
9

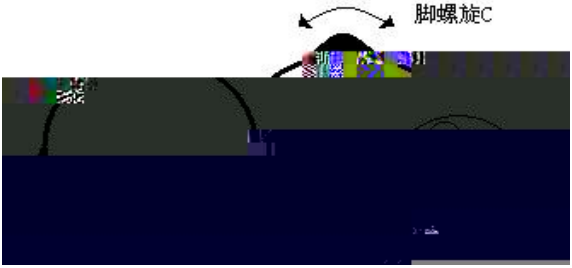

程序 JKL
4

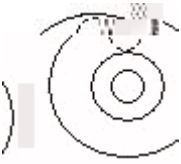
代码

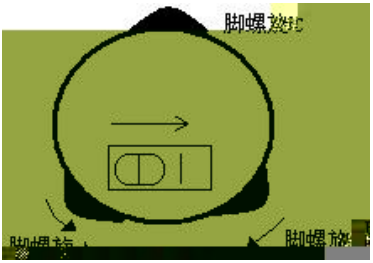
◀ ▶	
⬇ ⬆	

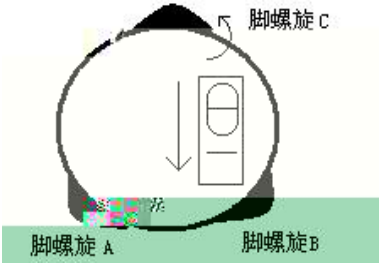


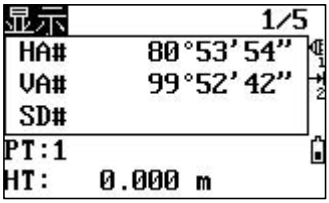



脚螺旋C

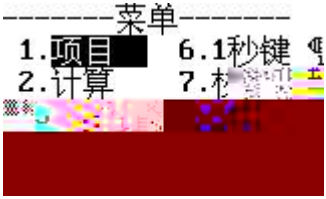



脚螺旋C

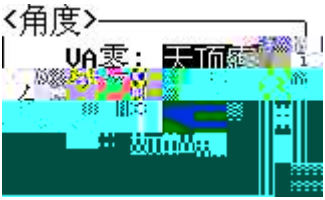

脚螺旋 C
脚螺旋 A
脚螺旋B


显示 1/5
HA# 80°53'54"
VA# 99°52'42"
SD#
PT:1
HT: 0.000 m

可进行测量
电池电量不多，应当对电池


--------菜单--------
1.项目
6.1秒键
2.计算

--------设置--------
1.角度
6.放样
2.距离
7.单位
3.坐标
8.记录
4.电源
9.其他
5.PPM
10.蓝牙


<角度>

比例尺:1.000000
T-P改正:开
海平面:关
c&R改正:0.14
测程:2000 m

<坐标>

顺序：NE

标记：

AZ零：北

<电源>

主机关闭：30分钟

EDM关闭：

温度、气压

温度：20.0 C

气压：1013.2 h

ppm= 0.0

开 关

<放样>

增加点：0

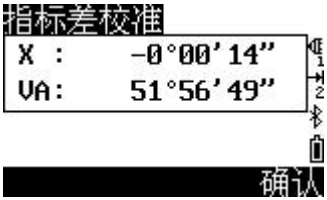
<单位>

角度：度

距离：米

温度：

气压：


指标差校准
X : -0°00’14”
VA: 51°56’49”
确认

指标差校准
X : -0°00’13”
VA: 51°56’
*请转动F2
确认

用棱镜仪器加常数
: 0.0 mm
不用棱镜仪器加常数
: 0.0 mm

<日期>
日期:2019.09.19
时间:13:48:01

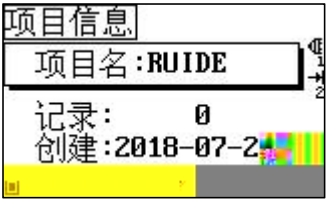
2019-09-19 13:48:17
机身号:11111111
MAIN: 001-19.09.06
EDM : 234-116
ANG : 040-002
TILT: 107-004
T&P : 101-108

删除项目
项目名:RUIDE
*确定吗?
放弃
确认

7-23
180724-1 18-0
7-24
*RUIDE 18-0
删除 控制 信息

控制项目<开>
项目名:180724-1
*设为控制项目吗

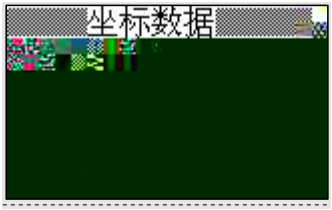
控制项目<关>
*关闭控制项目吗
放弃

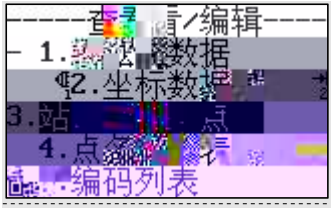

项目信息
项目名:RUIDE
记录: 0
创建:2018-07-2

测量数据
CO,Temp:20.0 C Pre
ST,1
F1,2,
SS,2,
删除 编辑 搜索

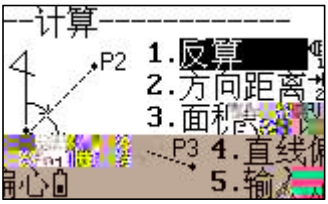
删除原始数据
SS:2
*确定吗?
取消
确认

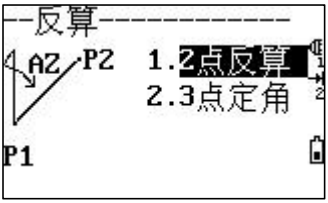
搜索原始数据
1
类型:所有
PT:
CD:
列表

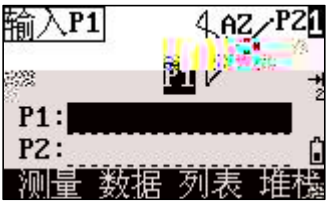

坐标数据

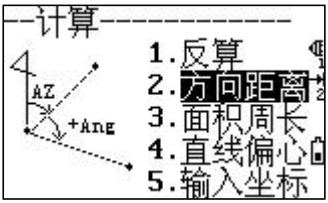

1.
2.坐标数据
3.站
4.点
编码列表

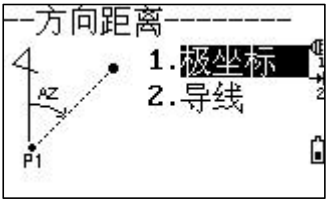
测站数据

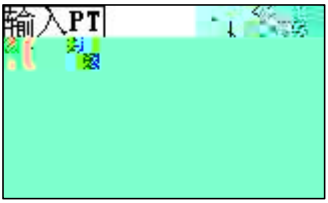

--计算----------
P2
1.反算
2.方向距离
P3
4.直线
5.输

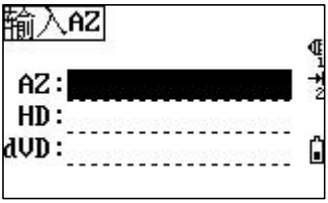

--反算----------
AZ
P2
1.2点反算
2.3点定角
P1

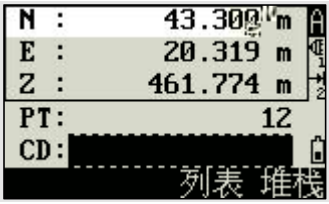

输入P1
AZ
P2
P1
P1:
P2:
测量 数据 列表 堆栈

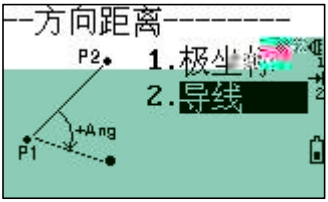

--计算----------
AZ
+Ang
1.反算
2.方向距离
3.面积周长
4.直线偏心
5.输入坐标

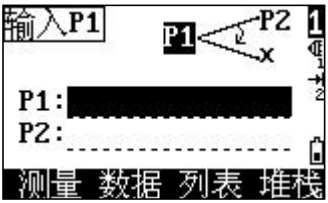

--方向距离---------
AZ
P1
1.极坐标
2.导线

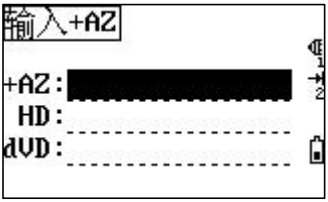

输入PT


输入AZ
AZ:
HD:
dVD:

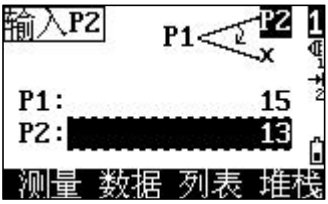

N : 43.300 m
E : 20.319 m
Z : 461.774 m
PT: 12
CD:
列表 堆栈

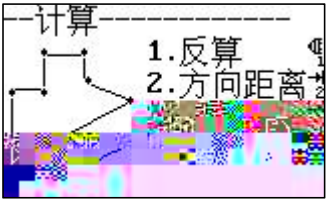

--方向距离--------
P2
1.极坐标
2.导线
+Ang
P1


输入P1
P1
P2
x
P1:
P2:
测量 数据 列表 堆栈

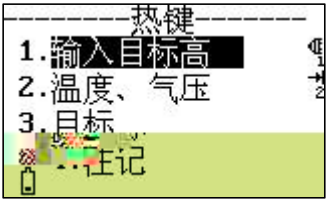

输入+AZ
+AZ:
HD:
dVD:

N : 10.9

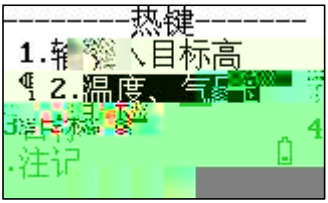

输入P2
P1
P2
P1: 15
P2: 13
测量 数据 列表 堆栈


--计算----------
1.反算
2.方向距离

参与


热键
1.输入目标高
2.温度、气压
3.目标
.记

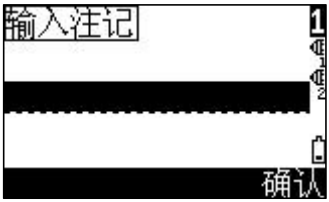
输入目标
HT: 1.500 m
堆栈

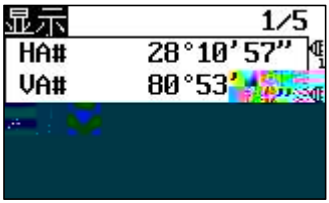

--------热键--------
1.
、目标高
2.温度、
注记

温度、气压
温度: 20.0 C
气压: 1013.2 h
m= 0.0
开 关

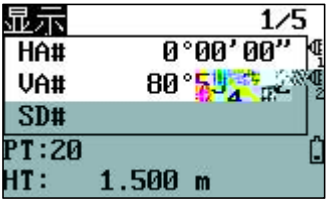
1<P, -30, - >
2<P, -30, - >
3<P, -30, - >
4<P, -30, - >
5<P, -30, - >
编辑
设置

目标:棱 镜
常数: -30mm
HT:


输入注记
确认


显示
1/5
HA#
28°10’57”
VA#
80°53’

HA#
28°10’58”
1.
4.F1/F2
2.输入
5.保持
3.复测


显示
1/5
HA#
0°00'00"
VA#
80°
SD#
PT:20
HT:
1.500 m

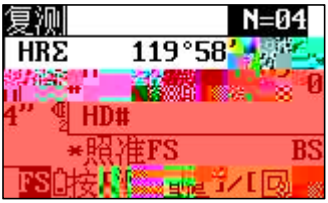
HA输入
HA:
50°00'00

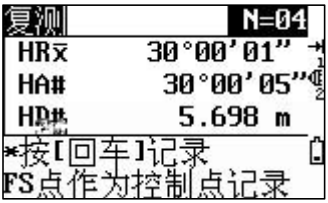
$\overline{X}$ $\sum \div N$

A_Z $\overline{X}$

$\overline{X}$

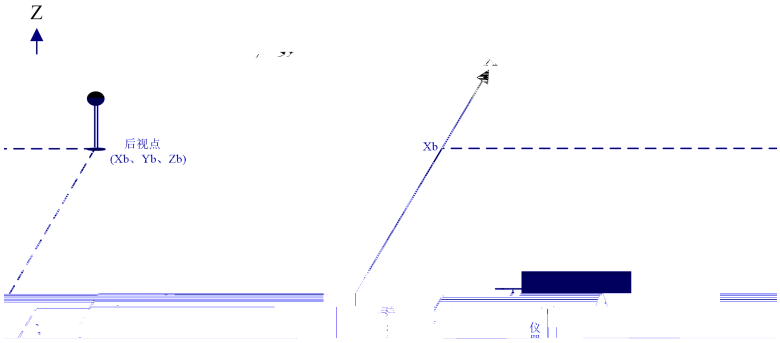
$\sum$


复测
N=04
HRΣ
119°58'
HD#
*照准FS
BS


复测
N=04
HR
30°00'01"
HA#
30°00'05"
HD#
5.698 m
*按[回车]记录
FS点作为控制点记录

F1/F2观测
dHA: -179°59'57"
dVA: 105°34'51"
dSD:
放弃
CP
确认

建站ABC
7


Z
后视点
(Xb、Yb、Zb)
Xb

输入站
ST:
HI: 1.200 m
CD:
列表 堆栈

后视
1.坐标
2.角度

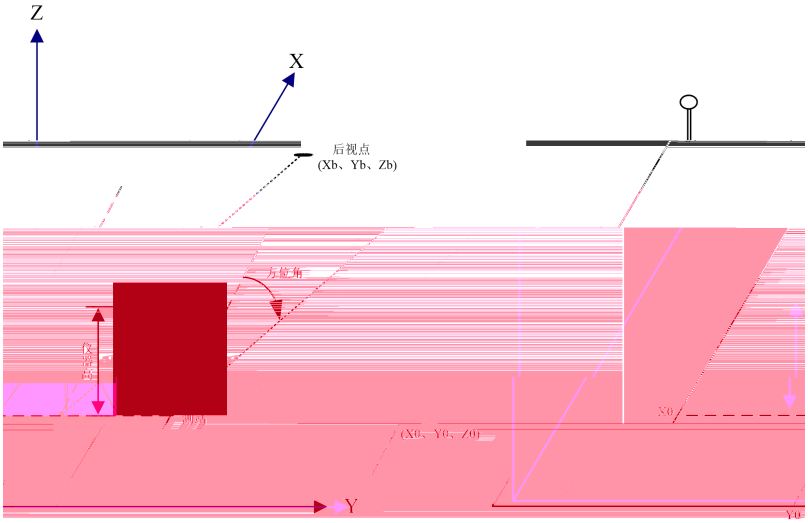
输入后视点
1
6
HT: 1.500 m

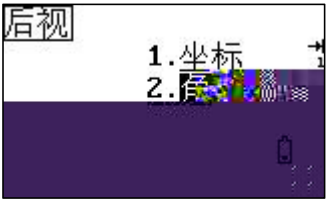
205°11'51"
HD#
SD#
观测

205°11'51"
HD# 5.701 m
SD# 6.6

@

[redacted]


Z
X
后视点
(Xb、Yb、Zb)
方位角
(X0、Y0、Z0)
Y


后视
1.坐标
2.

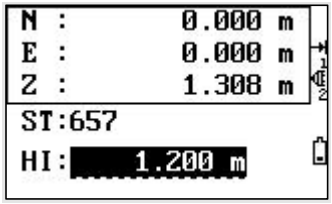
输入后视点
B
HT: 1.500 m
CD:
列表 堆栈

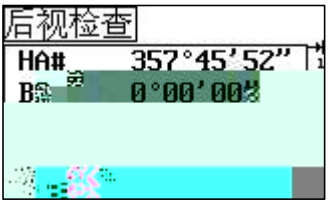
输入后视角度
AZ:

后交 <照准点01>
HA# 12°43'53"
HD# 6.001 m
按[回车]到下一点
F2

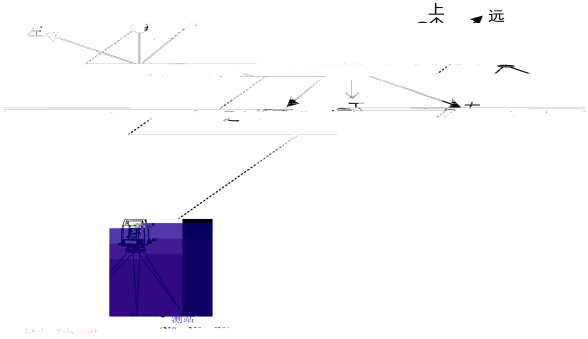
输入PT
PT:
列表 堆

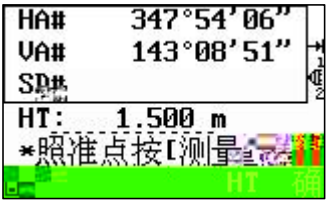
水准点
HA#
359°22'55"
VD#
HD#
F


N :
0.000 m
E :
0.000 m
Z :
1.308 m
ST:657
HI:
1.200 m

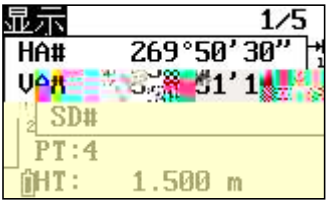

后视检查
HA#
357°45'52"
B
0°00'00"

偏心 GHI
9


上
远

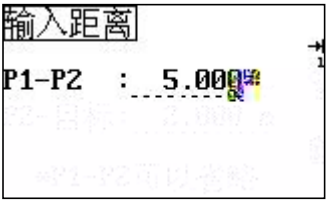

HA#
347°54'06"
VA#
143°08'51"
SD#
HT:
1.500 m
*照准点按[测量
HT

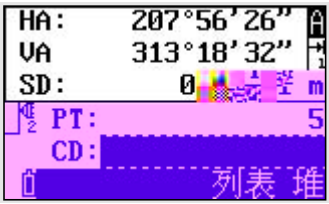
距离偏心
左右:
上下:
*(+)=右(-)=左


显示 1/5
HA# 269°50'30"
SD#
PT:4
HT: 1.500 m

PT:
HT: 1.500 m
CD:
列表 堆

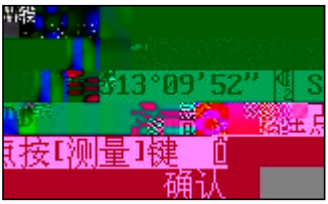
Z棱镜杆 <第1点> 1/5
HA# 268°15'22"
VA# 336°51'19"
SD#
*照准点按[测量]键
确认

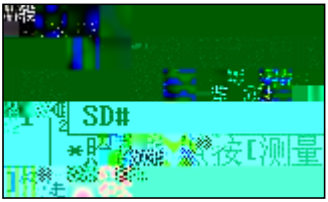

输入距离
P1-P2 : 5.000


HA: 207°56'26"
VA 313°18'32"
SD: 0
m
PT:
5
CD:
列表 堆

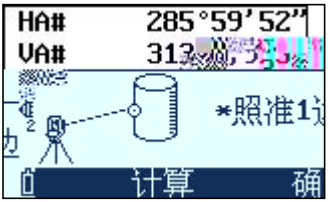
输入平距
HA# 273°03'32"
VA# 313°09'50"
HD: 0.000 m
*照准点按[回车

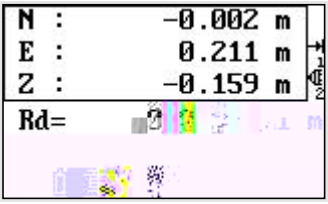
PT:
HT: 1.500 m
CD:
列表 堆

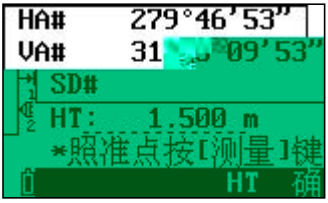

313°09’52”
确认

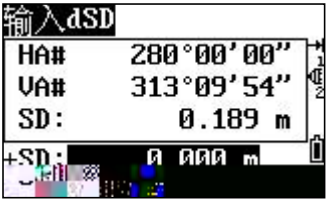

SD#

HA:
VA: 313°09’53”
SD: 0.206 m
HT: 1.500 m
+SD

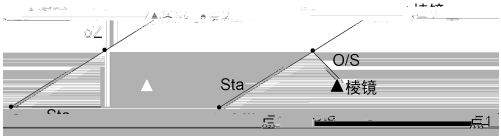

HA#
285°59'52"
VA#
*照准1
计算
确


N :
-0.002 m
E :
0.211 m
Z :
-0.159 m
Rd=

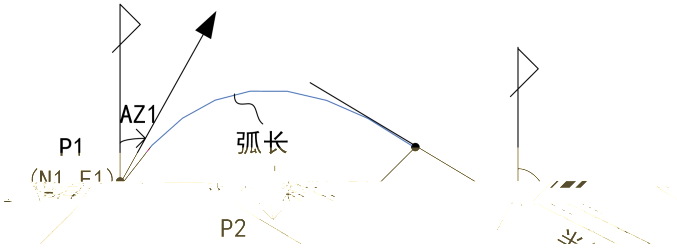

HA#
279°46'53"
VA#
SD#
HT:
1.500 m
*照准点按[测量]键
HT
确


输入dSD
HA#
280°00'00"
VA#
313°09'54"
SD:
0.189 m
+SD:
m

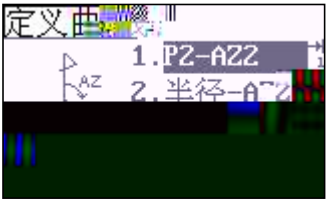
平面图：

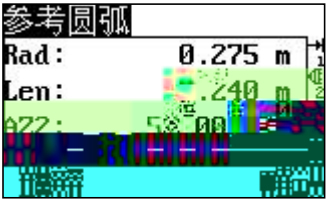


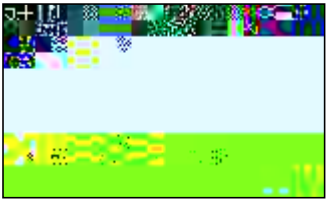
纵面图：

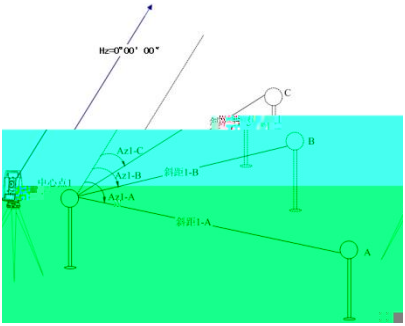

AZ1
P1
弧长
P2

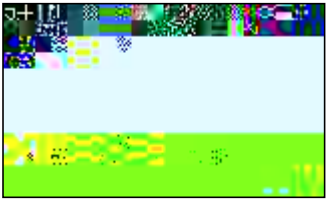
曲线起始点
P1:
AZ1:
测量
列表
堆栈

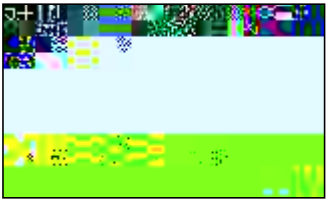

1.P2-AZ2

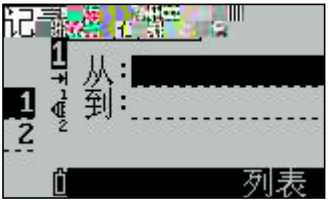

参考圆弧
Rad:
0.275 m
Len:

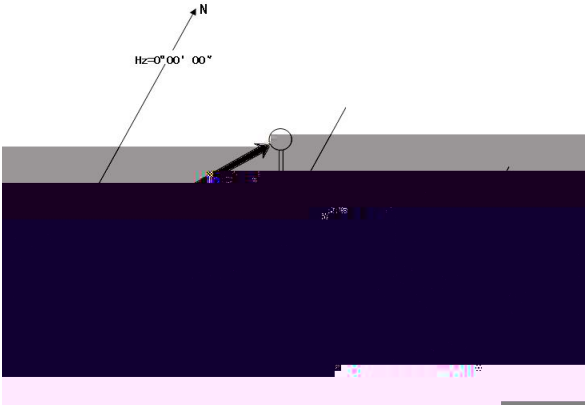


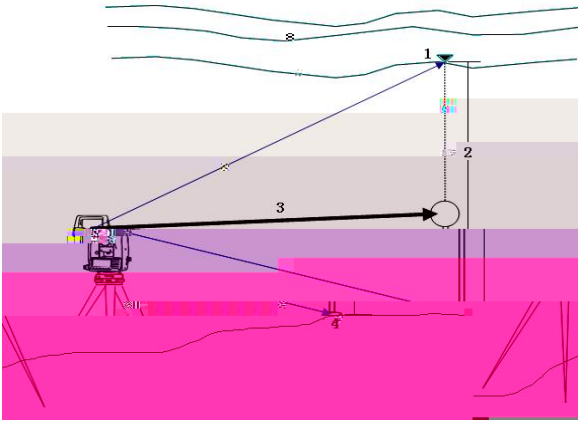

Hz=0°00' 00"
C
B
A
Az1-C
Az1-B
Az1-A
斜距1-B
斜距1-A

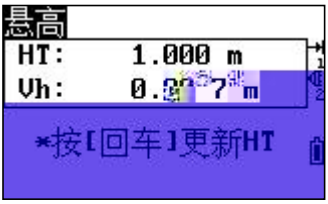


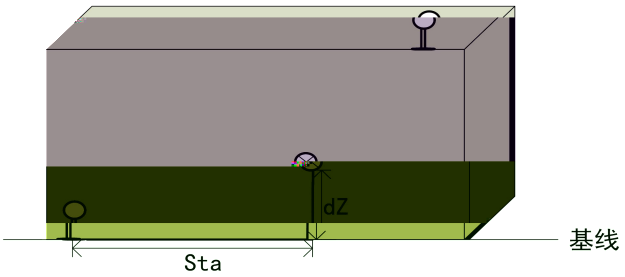


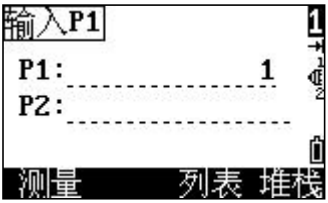

记
1
从:
1
到:
2
列表


N
Hz=0°00' 00"


1
2
3
4

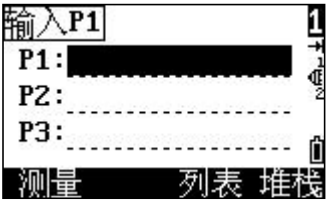

悬高
HT: 1.000 m
Vh: 0.0
m
*按[回车]更新HT

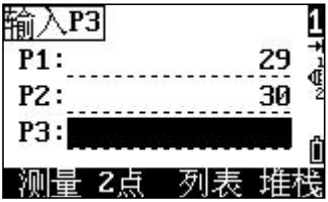

dZ
基线
Sta

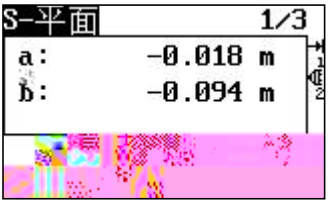

输入P1
P1: 1
P2:
测量
列表 堆栈

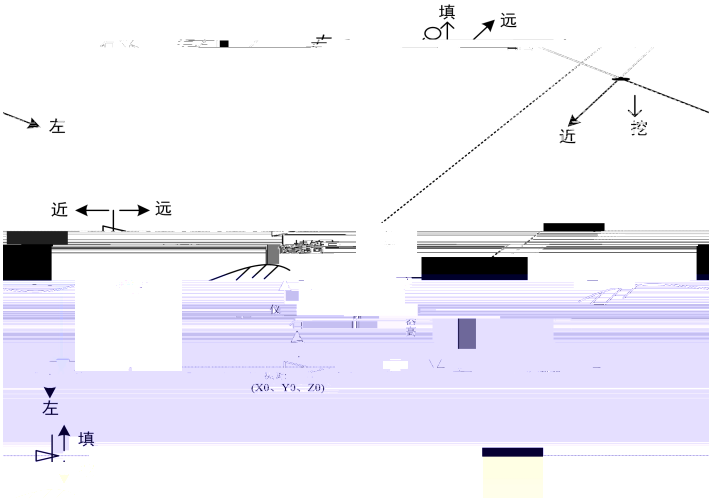
V-平面 1/3
STA: 0.018 m
dZ: 0.081 m
*STA:是沿P1-P2线
到P1

目标

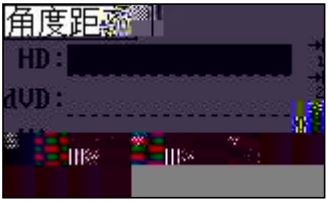

输入P1
P1:
P2:
P3:
测量
列表
堆栈


输入P3
P1: 29
P2: 30
P3:
测量
2点
列表
堆栈

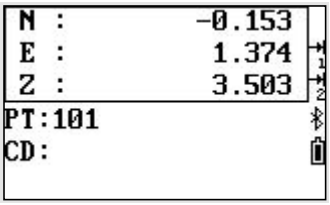

S-平面
1/3
a:
-0.018 m
b:
-0.094 m


填
远
左
近
挖
近
远
仪
(X0、Y9、Z0)
左
填

放样DEF
8

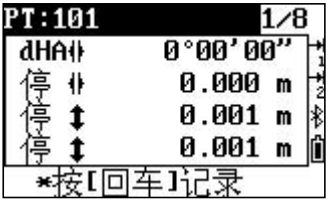

角度距离
HD:
dVD:

输入PT
PT:
Rad:
CD:
从/到 列表 堆栈

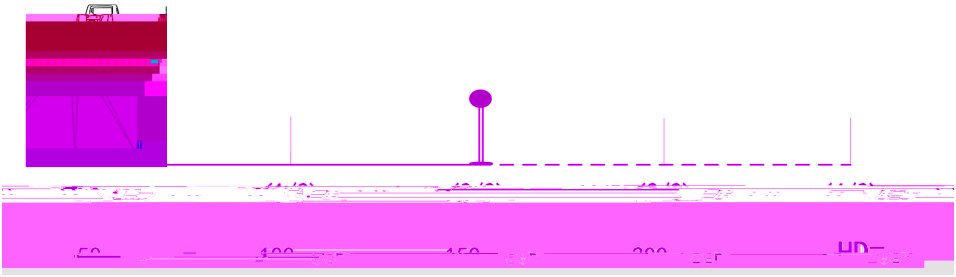

N : -0.153
E : 1.374
Z : 3.503
PT:101
CD:

PT:101
dAZ 0°00'02"
*照
准点按[测量]键
确认

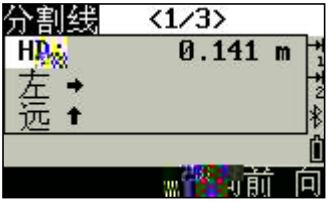
PT:101 1/8
dHA 0°00'01"
停 0.000 m
远 0.002 m
填 0.001 m
*按[回车]记录

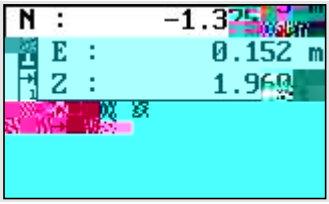

PT:101
1/8
dHA
0°00’00”
停
0.000 m
停
0.001 m
停
0.001 m
*按[回车]记录

N :
-0.153 m
E :
1.375 m
Z :
3.503 m
PT:
106
CD:
列表
堆栈



分割线

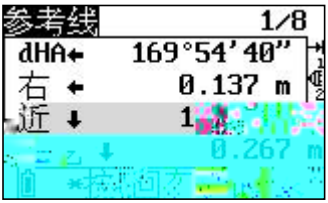

分割线
<1/3>
0.141 m
左
远
前
向


N : -1.325
E : 0.152 m
Z : 1.960

输入P1
P1:
P2:
测量
列表 堆栈

输入偏心
STA:
O/S:
dZ:
*到P1点的纵向距离

参考线
dAZ← 168°20'50"
HD# 0.783 m
*照准点按[测量]键
确认

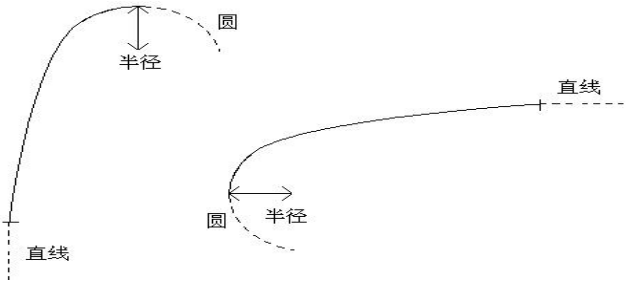

参考线
1/8
dHA←
169°54'40"
右 ←
0.137 m
近 ↓
0.267 m

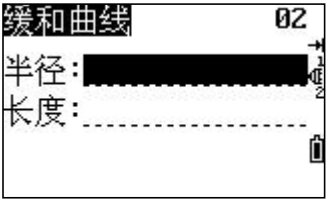
N :
-0.090 m
E :
-0.610 m
Z :
2.025 m
PT:
8
CD:
列表 堆栈

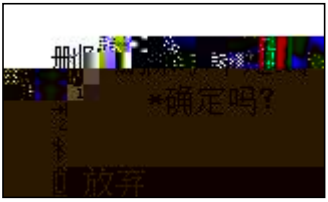
道路
1.水平定线数据
2.垂直定线数据
3.建站
4.道路放样

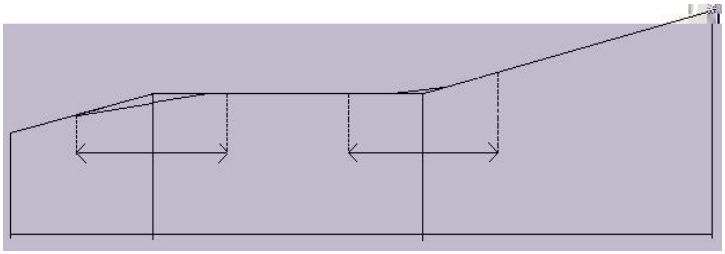
起始点 01
桩号: 0.000
N : 0.000 m
E :

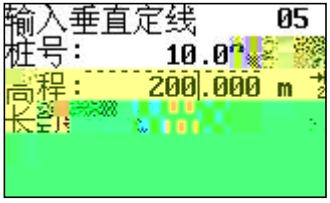
输入水平定线 01
桩号: 1.000 m
方
0°00'00"
直线 圆弧 缓曲 交点

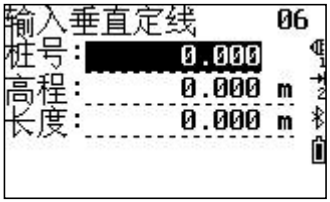

圆
半径
直线
圆
半径
直线

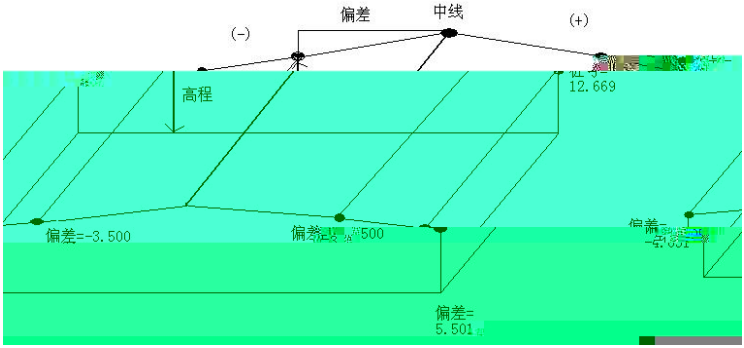

缓和曲线
02
半径:
长度:


确定吗?




输入垂直定线 05
桩号: 10.0
高程: 200.000 m

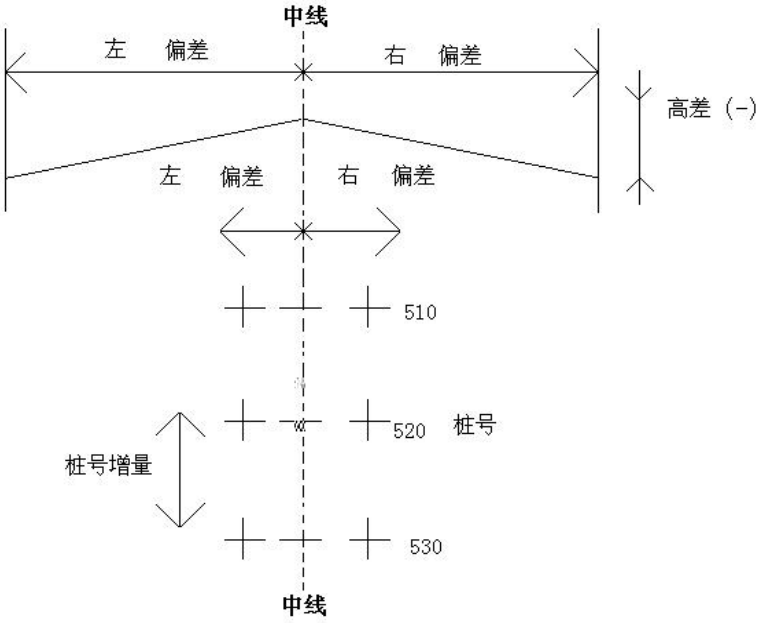

输入垂直定线
06
桩号:
0.000
高程:
0.000 m
长度:
0.000 m

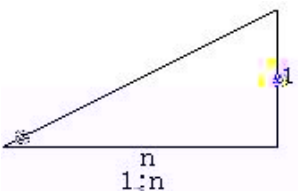

偏差
中线
(-)
(+)
高程
12.669
偏差=-3.500
偏差=
5.501

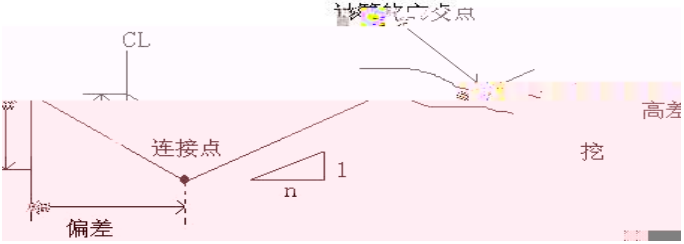
输入站
ST:
HI: 0.000 m
CD:
桩号
列表
堆栈

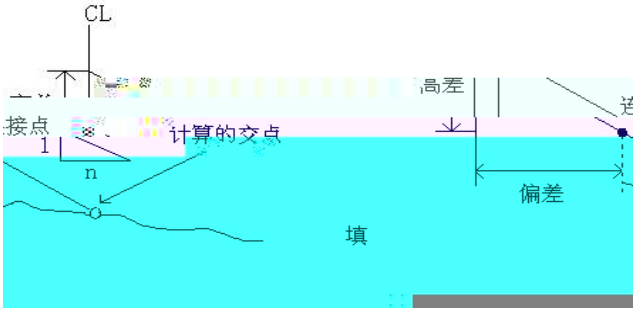
输入站
0.000
OF: 0.000 m
点名

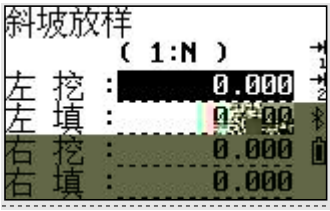
后视
1.坐标
2.角度

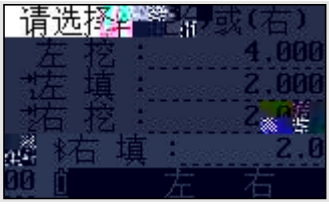

中线
左 偏差
右 偏差
高差（-）
左 偏差
右 偏差
510
520
桩号
桩号增量
530
中线


1
n
1:n


CL
连接点
1
n
偏差
挖
高差

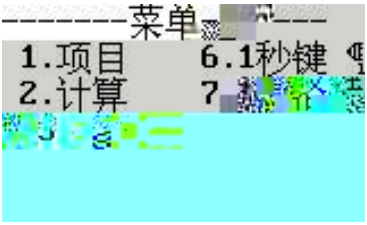

CL
接点
1
n
计算的交点
高差
偏差
填

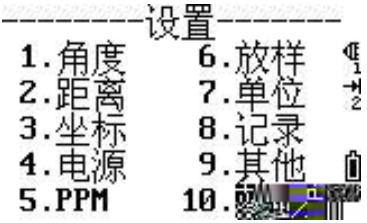

斜坡放样
(1:N)
左 挖 : 0.000
左 填 :
右 挖 : 0.000
右 填 : 0.000

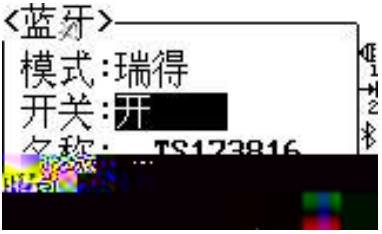

请选择
或(右)
左 挖 : 4.000
左 填 : 2.000
右 挖 :
右 填 : 2.0
左
右

斜坡

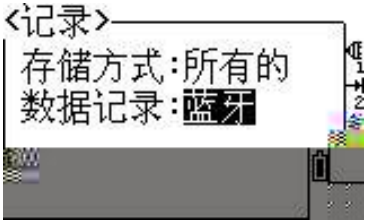
斜坡

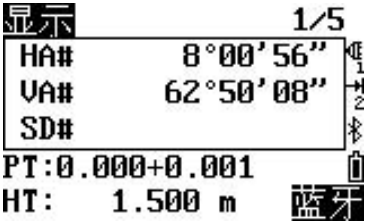

菜单
1.项目
2.计算
6.1秒键
7

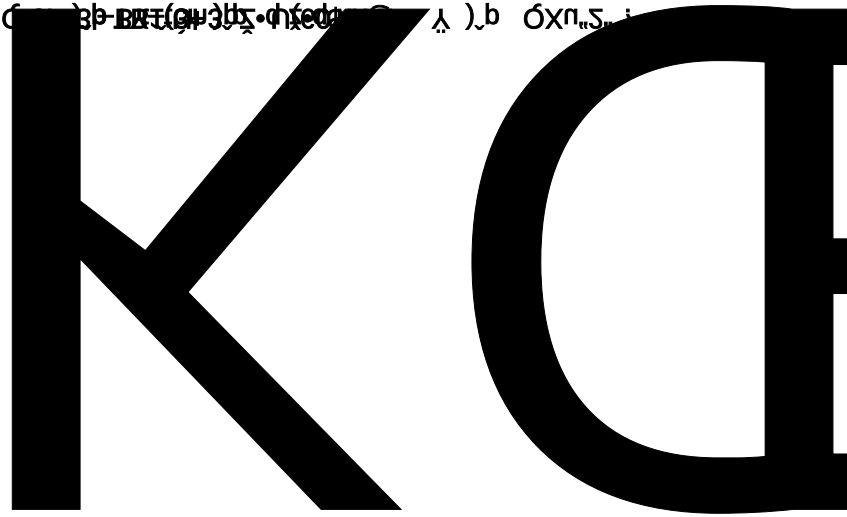

设置
1.角度
2.距离
3.坐标
4.电源
5.PPM
6.放样
7.单位
8.记录
9.其他
10.


<蓝牙>
模式:瑞得
开关:开

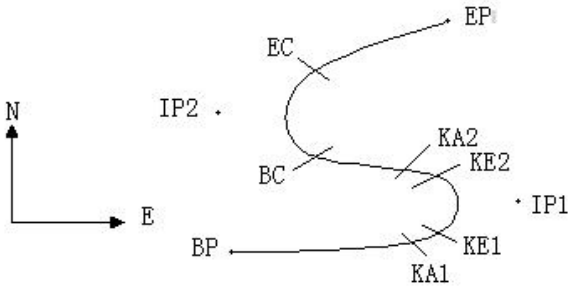
--------设置--------
1.角度
2.距离
3.坐标
4.电源
5.PPM
6.放样
7.单位
8.记录
9.其他
10.蓝牙

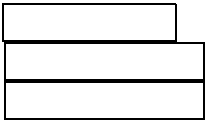

<记录>
存储方式:所有的
数据记录:蓝牙

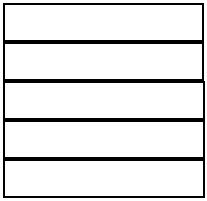

显示
1/5
HA#
8°00'56"
VA#
62°50'08"
SD#
PT:0.000+0.001
HT:
1.500 m
蓝牙

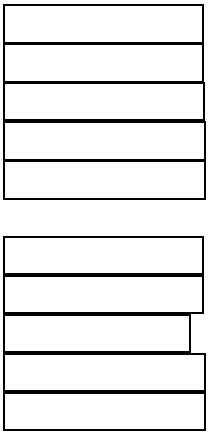


: RTS-822


EP
EC
IP2
N
KA2
KE2
BC
IP1
E
BP
KE1
KA1







Δ

$\Delta = - (1-\cos\tau)$

$\Delta = 6.777 - 100(1-\cos 18$

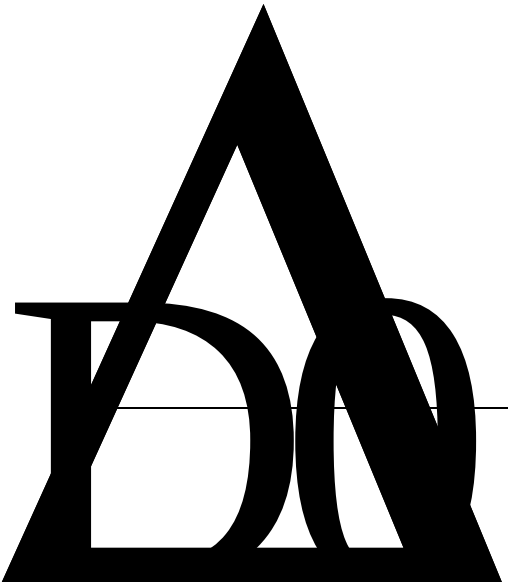
=

$\Delta_1 = \Delta_2$

$= - \sin\tau$

$_1 =$ $_2$

$_1$ —— $_2$ $_1$co) $_1$



$\Rightarrow \alpha_1 =$

$_1 =$

$= \quad \cdot \tan(\frac{}{2}) =$

$= \quad _2 - \quad \cdot \cos \alpha_2$

$= \quad _2 - \quad \cdot \sin \alpha_2$

$= \quad _2 - \quad \cdot \cos \alpha_3$

$= \quad _2 - \quad \cdot \sin \alpha_3$

α_2

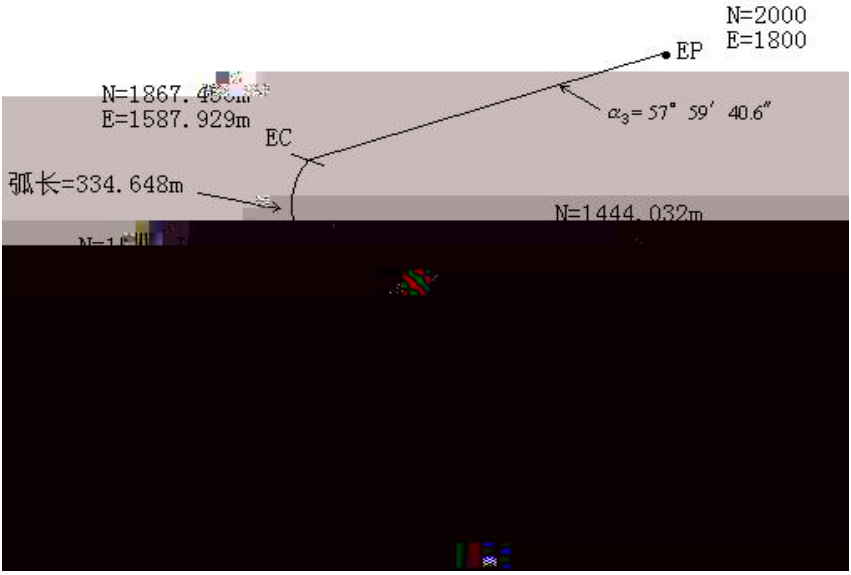
α_3

$=$

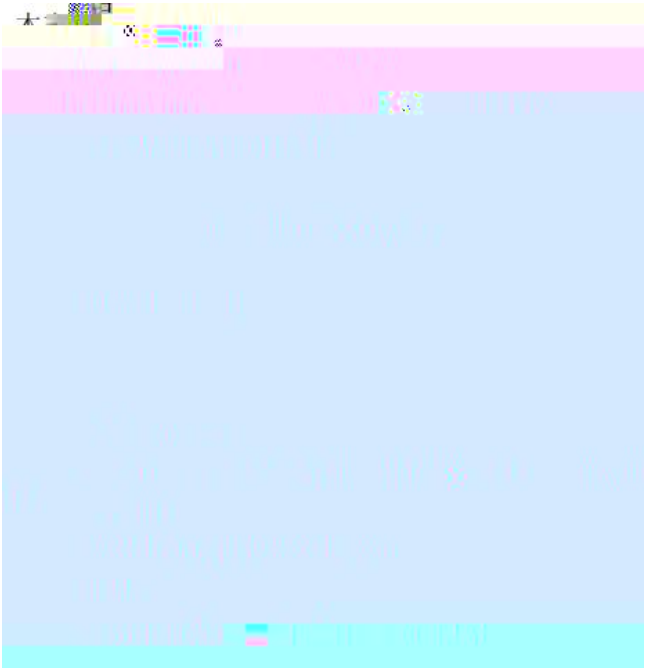
$=$

$=$

$=$



$$\sqrt{(1249.872-1100.000)^2+(1574.553-1050)^2}=545.543$$

$$=\sqrt{(1575.068-1444.032)^2+(1536.058-1637.976)^2}=166.005$$

$$\sqrt{(2000\ \ 1867.456)^2\ \ (1800\ \ 1587.929)^2}=250.084$$