





	109	
13.1	109	1.1
13.2	110	
13.3	111	
13.4	112	1.
13.5	113	2.
13.6	2C	114	3.
13.7	(i)	115	4.
13.8	116	
13.9	118	5.
13.10	ATR PS	120	6.
13.11	121	
13.12	K	122	7.
13.13	123	8.
13.14	124	9.
13.15	124	
	125	10.
14.1 NTS-591R10	125	
	127	11.
1	127	12.
2	128	13.
			14.

1.2

()

3R

ASER 3R

Class 3R

GB7247.1-2012

Class 3R

Class 3R

()

a

b

c

d

(*)

e

f

g

*

Class 3R

1000m (3300ft)

Class 1(

)

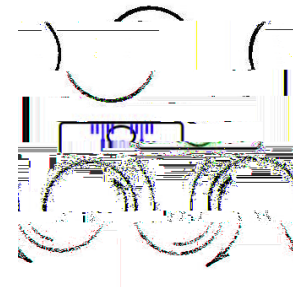
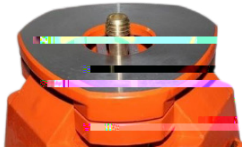
()

Class 3R

(GB7247.1-2012)

1.3

1.4



1
1)

2)

3)

4)

A B

A B

4

90°

A B

C

5)

6)

:

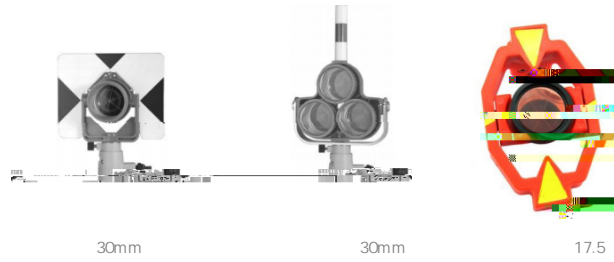
± 4



X	X	
Y	Y	
[-]
[-X]	X
[-XY]	XY

5

1.6

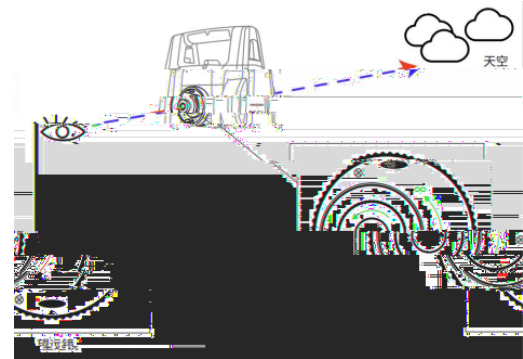


1.7

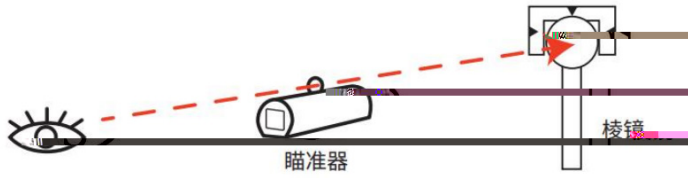
()
180°

180°

1.8



1.9

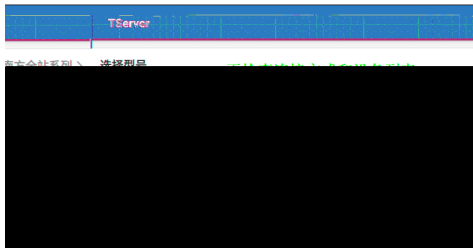


1

2.1 Tsever



TSever



Tsever
552 582 591

1

TSever

4G WIFI

4G WIFI

2

36

TServer

36

1

2

TSever


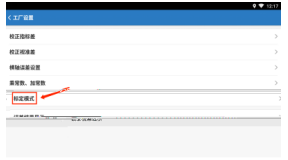
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TSever

12

2.2 NTS-591R10

NTS-591R10

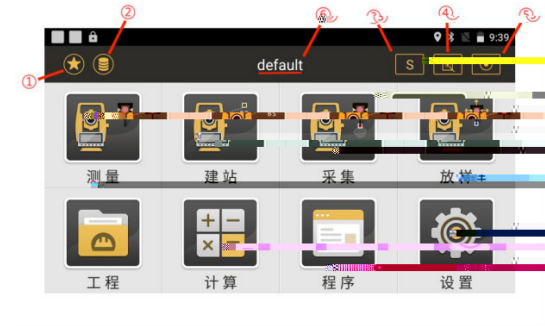
Tsever		
		

35~50m		
5	PS+ATR	

23

V	
V%	
HR	
HL	
R/L	HR HL
HD	
VD	
SD	
N	
E	
Z	
m	
ft	
dms	
gon	
mil	
PSM	mm
PPM	
ATR	
PS	

24



ATR+PS ATR

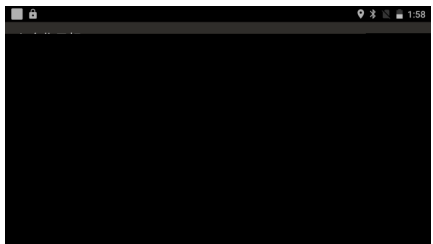
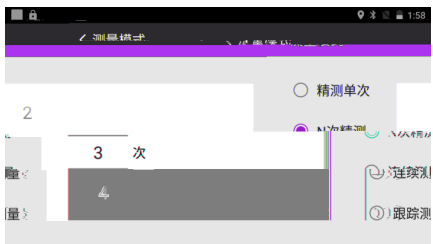




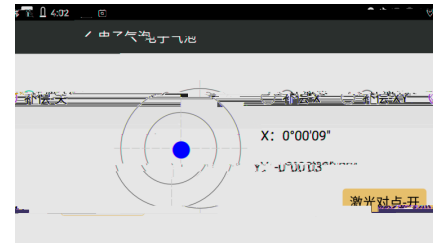
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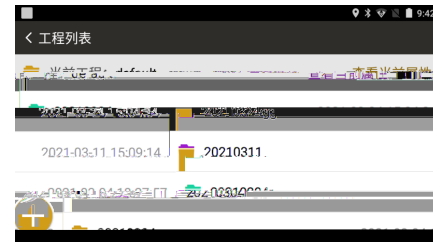
N



X XY



default



3.1

/ HR

V
HR/HL
N
E
Z e

/

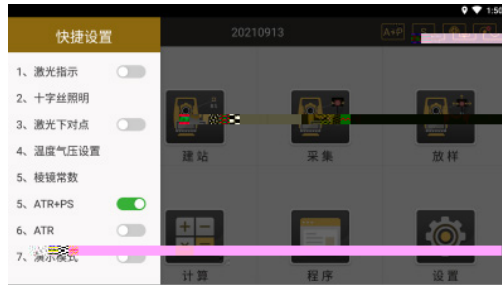
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3.2ATR

()

3.3 ATR PS +

4.1



ATR PS

ATR

PS 360°

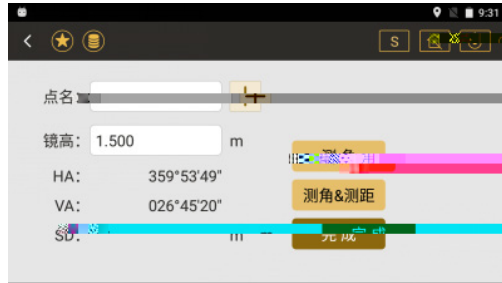
ATR

NTS-500



1) 2)		





HA
VA
SD
[]
[&]
[]

4.2



VD

[]
[]

4.3



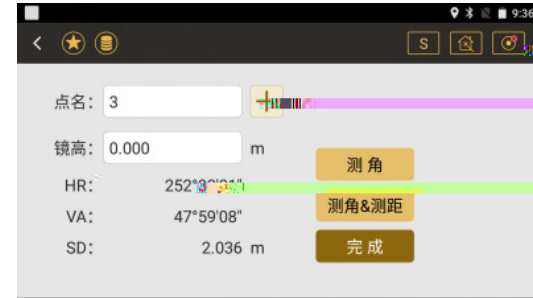
HR
dHA HR HR
[]



dN
dE
dZ
dSD

4.4

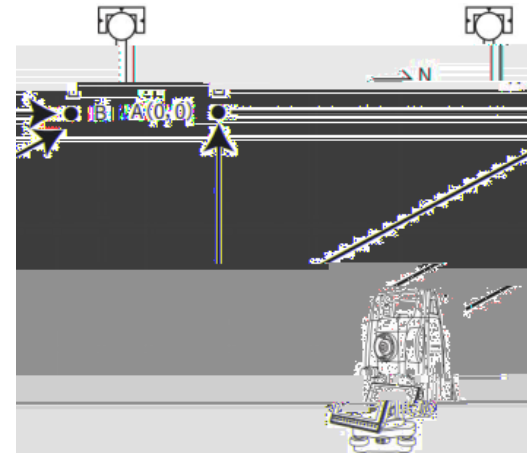
15 165

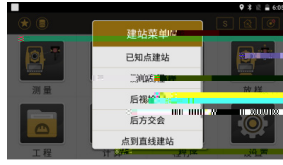


[N] ()
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&														
	【计算】	 <table border="1"> <thead> <tr> <th>测量</th> <th>数据</th> <th>图形</th> </tr> </thead> <tbody> <tr> <td>序号</td> <td>名称</td> <td>N E</td> </tr> <tr> <td>1</td> <td>1</td> <td>2563758.155 455329.721</td> </tr> <tr> <td>2</td> <td>2</td> <td>2563378.000 455329.721</td> </tr> </tbody> </table>	测量	数据	图形	序号	名称	N E	1	1	2563758.155 455329.721	2	2	2563378.000 455329.721
测量	数据	图形												
序号	名称	N E												
1	1	2563758.155 455329.721												
2	2	2563378.000 455329.721												
	【前往建站】	 <table border="1"> <thead> <tr> <th>测站点</th> <th>残差</th> </tr> </thead> <tbody> <tr> <td>N: 0.001 m</td> <td>dZ: 0.002 m</td> </tr> <tr> <td>E: 0.002 m</td> <td>dHD: -0.005 m</td> </tr> <tr> <td>Z: -0.003 m</td> <td></td> </tr> </tbody> </table>	测站点	残差	N: 0.001 m	dZ: 0.002 m	E: 0.002 m	dHD: -0.005 m	Z: -0.003 m					
测站点	残差													
N: 0.001 m	dZ: 0.002 m													
E: 0.002 m	dHD: -0.005 m													
Z: -0.003 m														

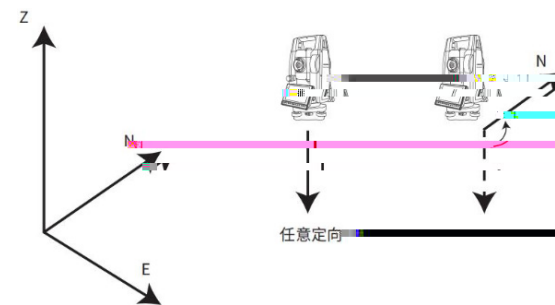
4.5



		
--	--	---

A	A	
B	【测量(B)】	
A-B	【下一步】	
	【建站设置】	

4.6



[+]

[+]

HA

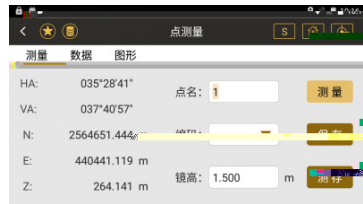
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5.1

N E Z

HA
VA
HD
VD
SD

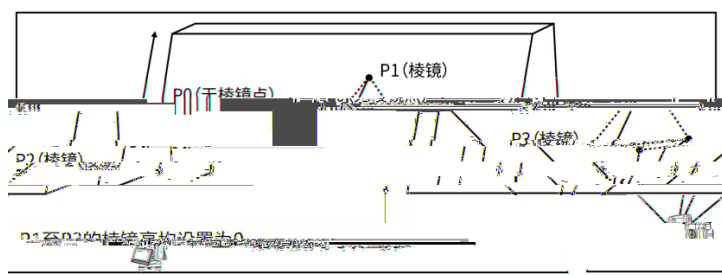


[]
[]
[]
{ }
{ }

5.2

5.3

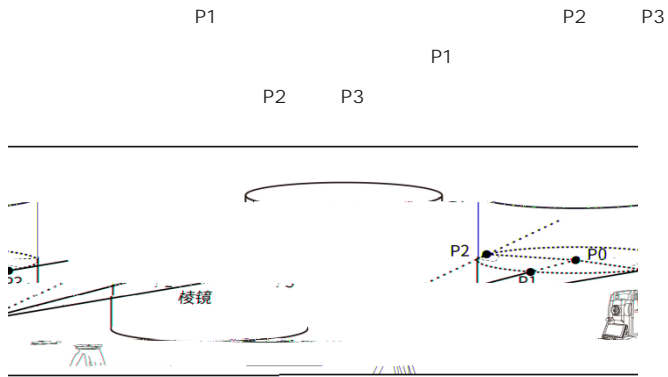
4



- []
- []
- []
- []
- { }
- { }

A		
B		
C		

5.4



A

B

- []
- []
- []
- []
- []
- []

A		
B		

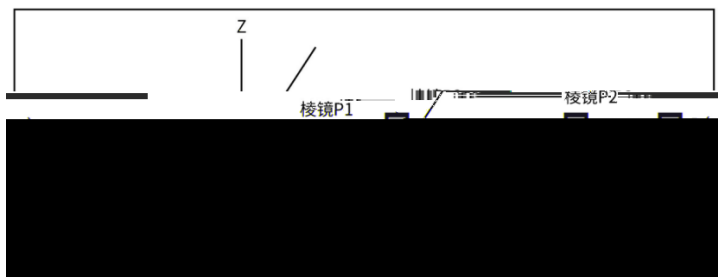
5.5

5.6

HR	dHD	dSD	dVD
		[]	
		[]	
		[]	
	A	AB AC	
	AZ		
	dHD		
	dSD		
	dVD		

5.7

5.8



P1

P2

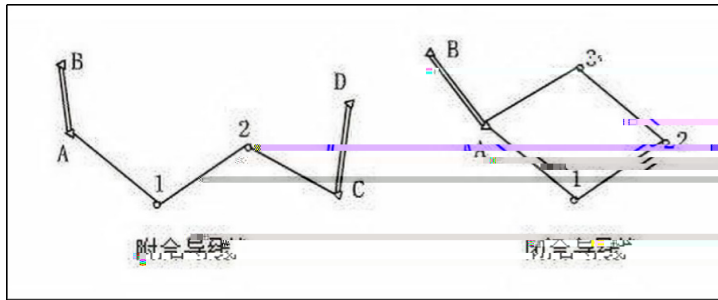
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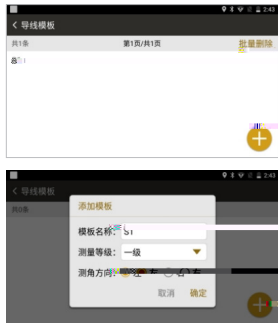

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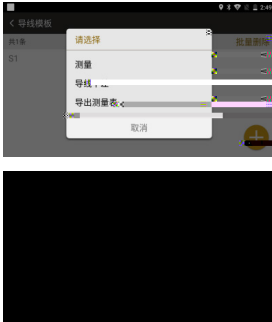
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P1		
P2		

5.9



+	+																													
	+	 <table border="1" data-bbox="552 1037 806 1181"> <thead> <tr> <th>名称</th> <th>类型</th> <th>编号</th> <th>N</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>测量点</td> <td></td> <td>1.2108</td> </tr> <tr> <td>2</td> <td>测量点</td> <td></td> <td>0.8463</td> </tr> <tr> <td>3</td> <td>测量点</td> <td></td> <td>0.2711</td> </tr> <tr> <td>4</td> <td>测量点</td> <td></td> <td>-0.1910</td> </tr> <tr> <td>5</td> <td>测量点</td> <td></td> <td>-0.6844</td> </tr> <tr> <td>6</td> <td>测量点</td> <td></td> <td>-1.5482</td> </tr> </tbody> </table>	名称	类型	编号	N	1	测量点		1.2108	2	测量点		0.8463	3	测量点		0.2711	4	测量点		-0.1910	5	测量点		-0.6844	6	测量点		-1.5482
名称	类型	编号	N																											
1	测量点		1.2108																											
2	测量点		0.8463																											
3	测量点		0.2711																											
4	测量点		-0.1910																											
5	测量点		-0.6844																											
6	测量点		-1.5482																											

	+													
3														
		 <table border="1" data-bbox="1564 721 1836 877"> <thead> <tr> <th>站号</th> <th>角度</th> <th>距离</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>测角</td> <td>测距</td> </tr> <tr> <td>3</td> <td>测角</td> <td>测距</td> </tr> <tr> <td>4</td> <td>测角</td> <td>测距</td> </tr> </tbody> </table>	站号	角度	距离	1	测角	测距	3	测角	测距	4	测角	测距
站号	角度	距离												
1	测角	测距												
3	测角	测距												
4	测角	测距												
														



6.1



dHA

[+]

[]

[]

HA

HD

Z

[]

[]

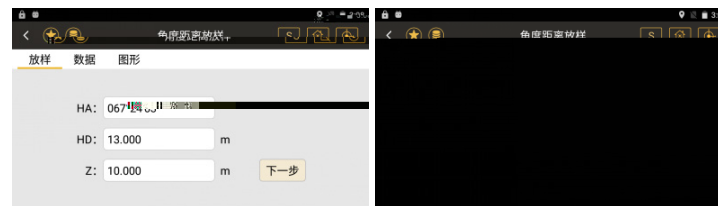
{ }

{ }

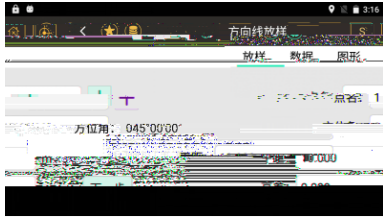
[+]		
O	Odms	

		
		
<p>CAD</p>		
		

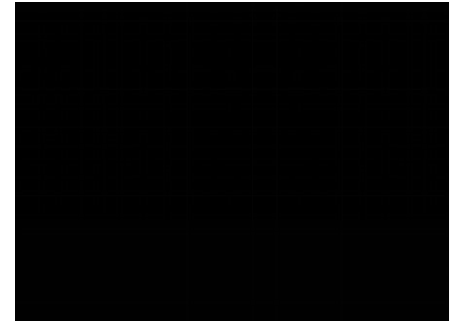
6.3



6.4



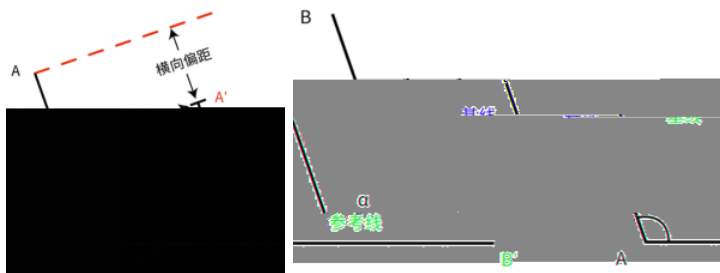
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[]



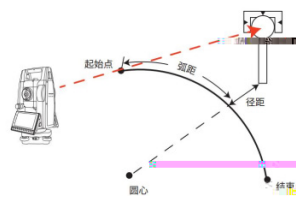
6.6



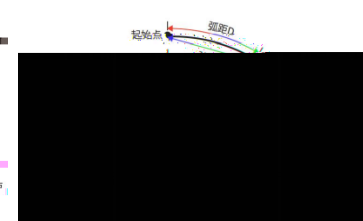
		
		
		
		
		

6.7

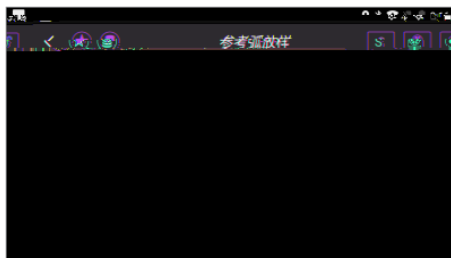
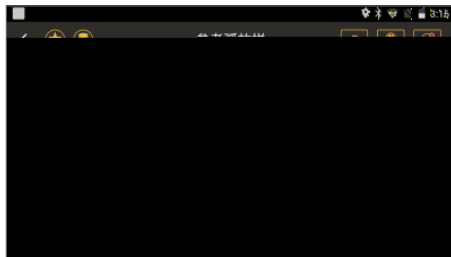
参考弧、放样点

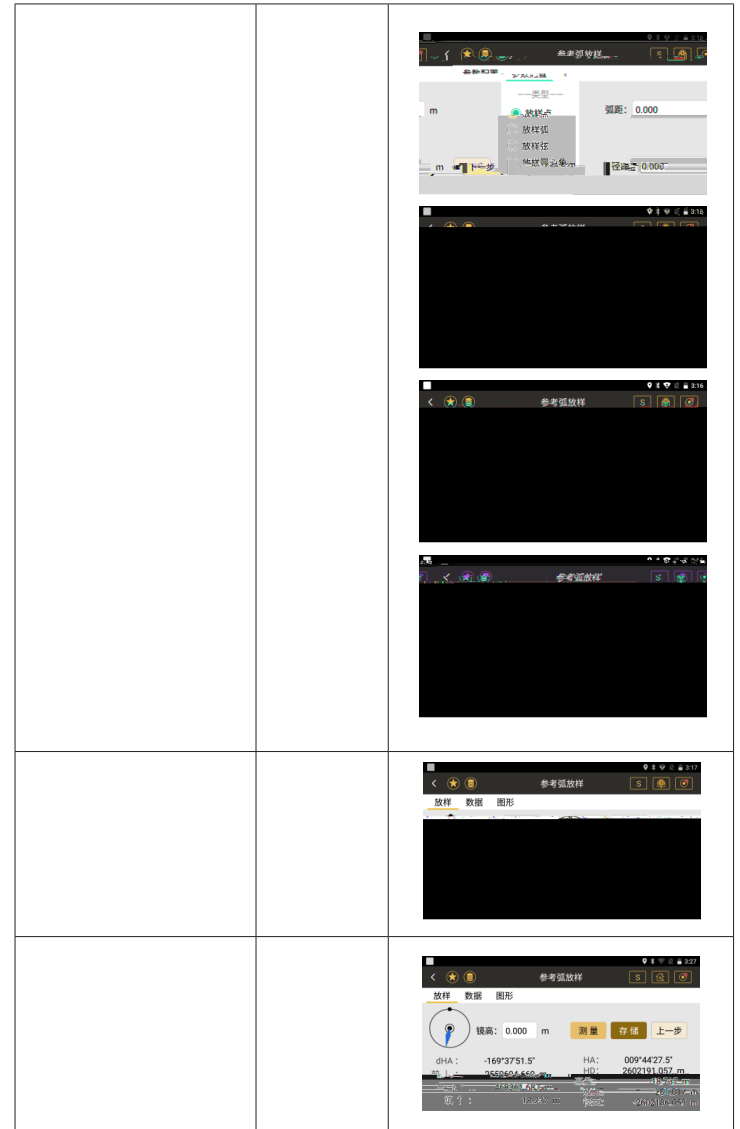
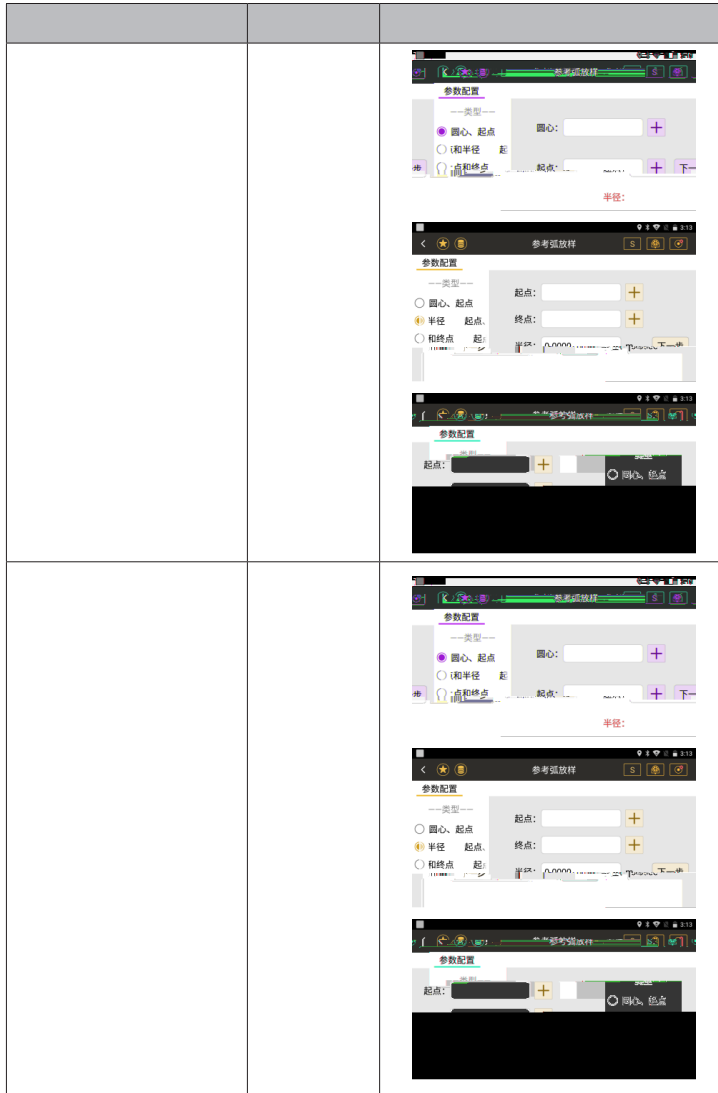


放样弧/弦/圆心角



5

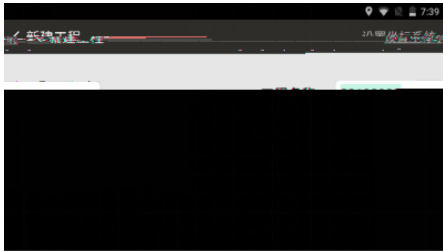




7.1



[+]



[]

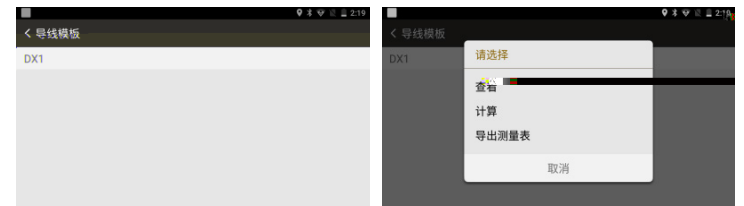


8.1

4.6

4.7

8.2



8.3



[+]

{ }

[]

[]

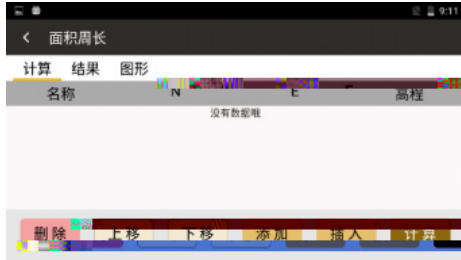
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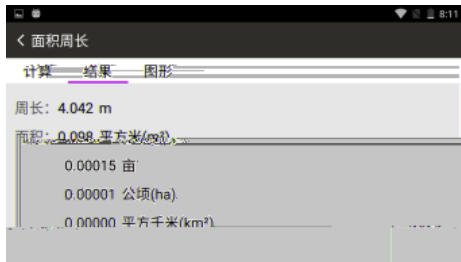
[+]

[]

8.5



- []
- []
- []
- [] []
- []



- { }
- { }

8.6



- [+]
- A A
- B B
- C C
- [] BAC

8.7



- []

8.8



[]

8.9



[]

[]

[]

8.10

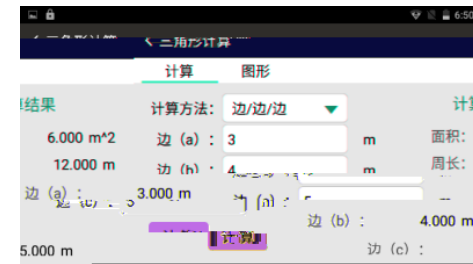


[+]

[]

[]

8.11



[]



{ }

8.12

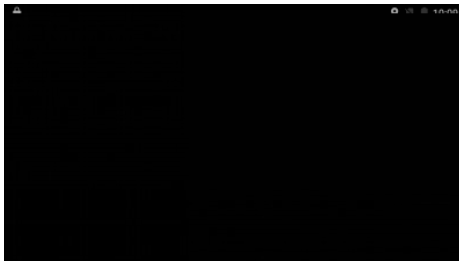


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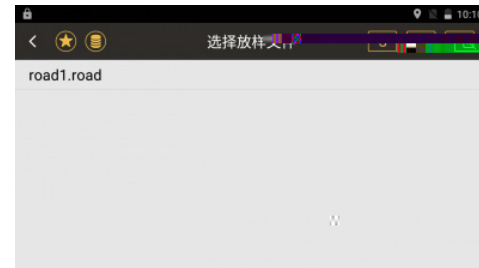
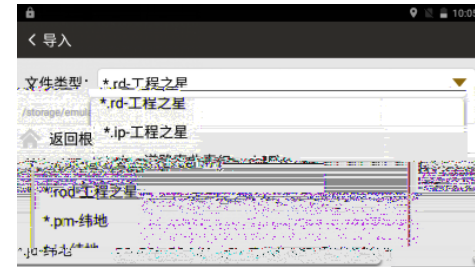
9.1



[+]



9.2





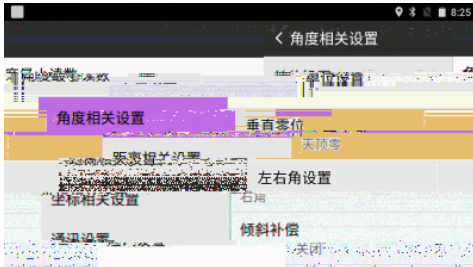
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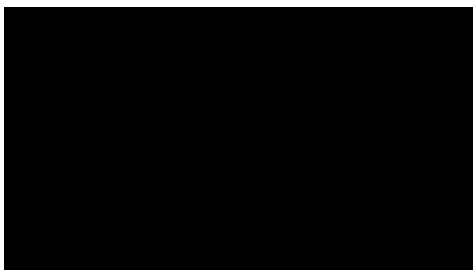
10.2

()

± 90



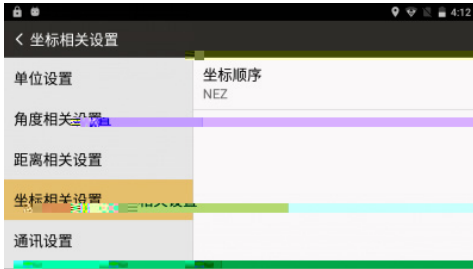
10.3



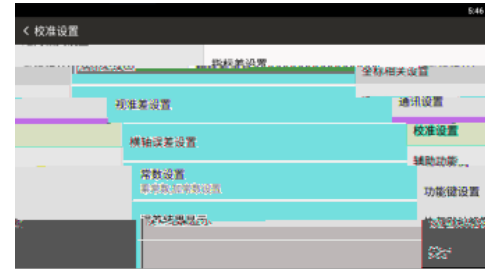
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PPM

10.4



10.6



10.5



K

K

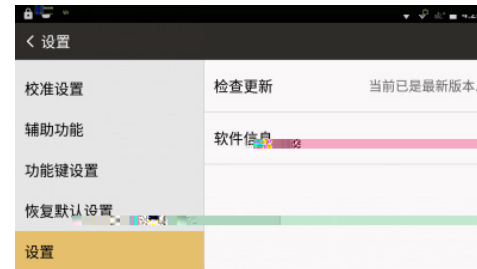
10.7

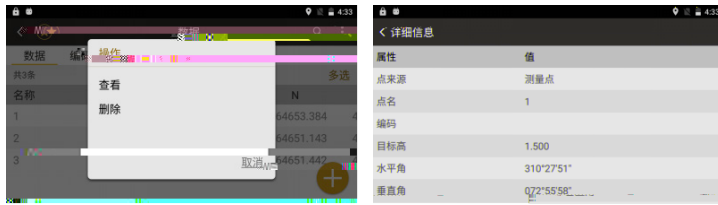
10.9



10.8

10.10





ATR

A+P

11.2



11.3



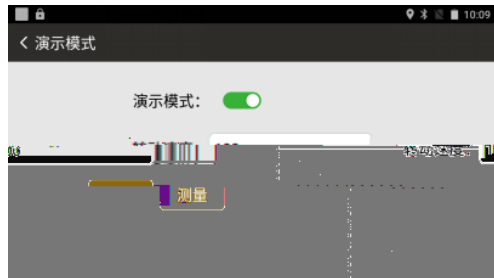
ATR+PS 360° +
ATR

12.5



13.1

12.6



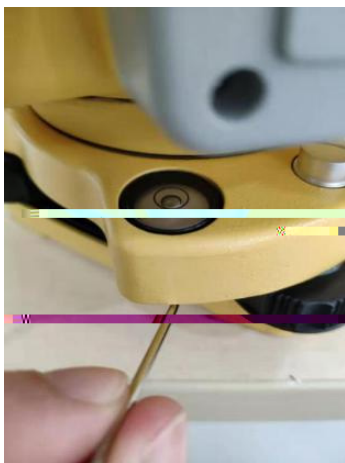
2 180°

1

3 90°

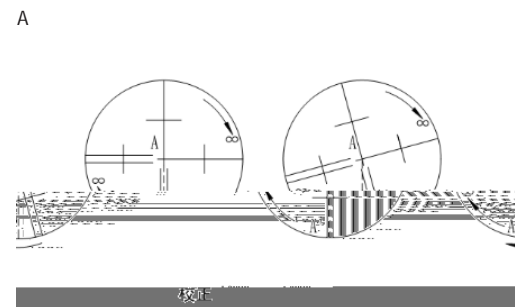
13.2

1 2

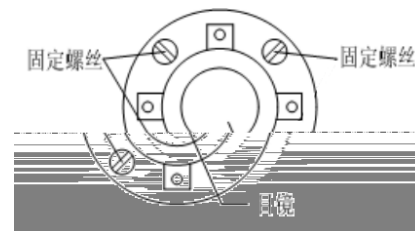


13.3

1 A A A A
 2 A A
 3 A A



1
 2 A
 3
 4

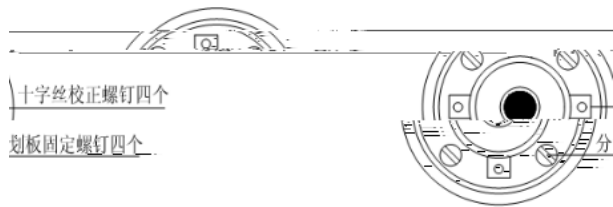


13.6 2C

1

A 10

2 A 2C L (± 180°) 2C 5



1 2

2

A

3 2C

4

13.7 (i)

[] [] []

]

1

2

3 ° (360°) ° (180°) 2

4 i 5

1

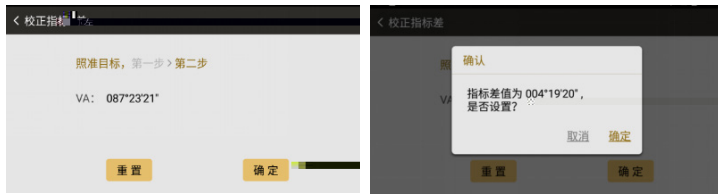
2

3

4 (

5





13.8

1.		
2.		

3.		
4.		
5.		

13.9

1

2

A

3

B

4 A B 0.6

13.10 ATR PS

ATR PS



ATR

Tsever

PS

ATR

ATR+PS

18°

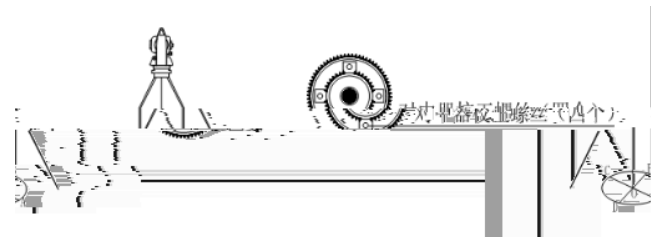
ATR+PS

2.1 591R10

13.11

- 1
- 2
- 3
- 4
- 5

90°



- 1
- 2
- A B C D
- 3
- 4
- 5
- 6

90°

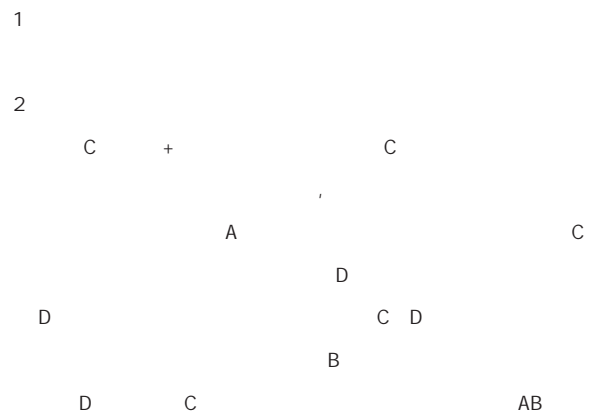
AC BD

O

O

13.14

13.15



14.1 NTS-591R10

*		3500m
	60mmX60mm	1000m
		\pm mm + $10^{-6} \times D$
		0.3 0.1
		1000m
	0-500m	\pm 2mm + $2 \times 10^{-6} \times D$
	500-100m	\pm 5mm + $2 \times 10^{-6} \times D$
		0.3-3
		79mm
		0.1
		1
		154mm
		40mm 50mm
		30X
		1° 30
		3
		1.7m

SS	NEZ/ENZ , yyyy-mm-dd,hh:mm:ss
ANG	yyyy-mm-dd,hh:mm:ss
SO	