

SOKKIA

GRX2



Руководство по эксплуатации

SOKKIA

GRX2

7011-0784

2012

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**Гост применим к геодезическому
оборудованию и приборам.**

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	C-6
-		
1999/5/EC		C-6
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Sokkia.

Sokkia

Sokkia

(“ ”).



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COPYRIGHT ()

Sokkia

Sokkia.

Sokkia,

Sokkia.

GRX2™, Spectrum Survey Office™, Spectrum Link™, Spectrum Survey Field™, SHC2500™ GRX Utility™

Sokkia. Windows®

Microsoft.

Bluetooth®

Bluetooth SIG, Inc.,

Sokkia

SOKKIA

SOKKIA

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Sokkia

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Sokkia.

Sokkia

Sokkia.

(”)
Sokkia.

Frequency

Enter

Enter ().



1

1

GRX2

GRX2
(
C/A),
GPS L1, L2, C/A, L2C GLONASS L1, L2,



. 1-1.

GRX2

GPS

- GPS -

GPS

20

(, ,).

(
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()

)

(GPS),

DGPS Differential GPS (GPS)

- ,
DGPS
- ;
;
- (RTK)
RTK ,
- DGPS ,
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- () ,
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- RTK
(RTCM),
() ,
- RTK
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- () ,
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(
OmniSTAR),
(WAAS, EGNOS, MSAS).

RTK ().

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, RTK

10 15

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(
- Geometric Dilution of
Precision GDOP)

GPS (DGPS RTK)

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(226)

GPS

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(,).

WGS-84,

SD

RTK ()

RTK

GRX2:

(WAAS, EGNOS .)

RTK , GPS
(DGPS) (DGPS ,
RTK)

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GRX2

226-

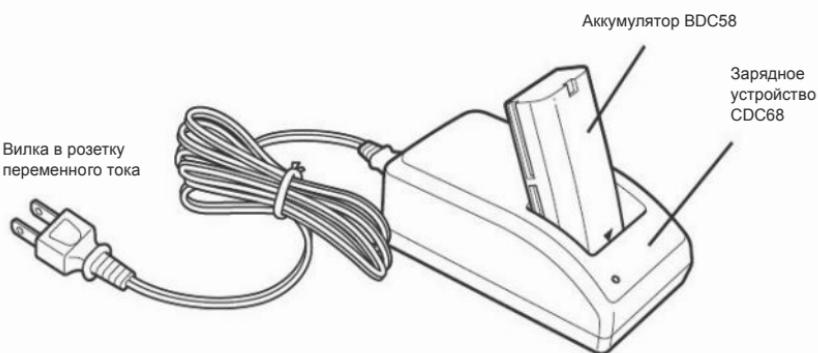
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-
- (COM)
-
-
-
- Bluetooth
- GSM/GPRS ()
- CDMA ()

()

GRX2
(. 1-2),



. 1-2.

GRX2

BDC58

CDC68.

2,5

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1		-20°C	+50°C
1	1	-20°C	+45°C
1	6	-20°C	+40°C
6	1	-20°C	+35°C

BDC58

GRX2

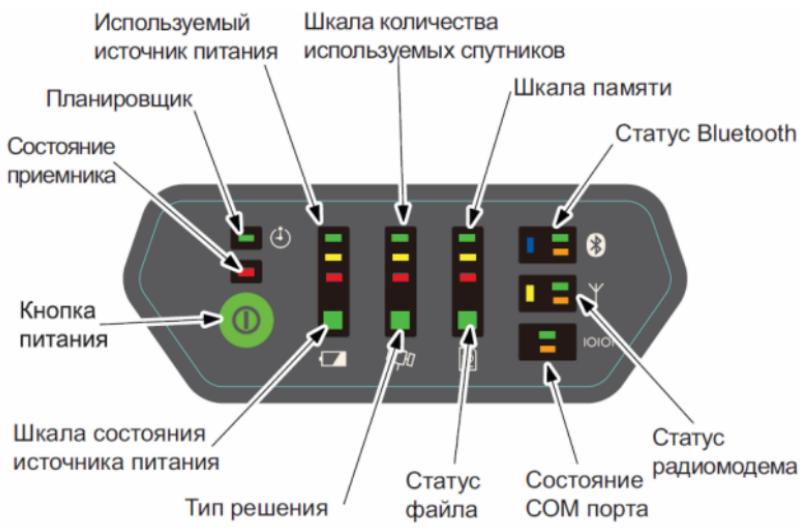
GRX2

SD SIM , Bluetooth
GSM ().

GRX2

- TX/RX
 - TX/RX GSM/GPRS
 - TX/RX CDMA ()

GRX2



. 1-3.

GRX2

- - 50%.
- - 25%, 50%.
- - 10%, 25%.
- - 10%.
- - 8 .
- - 7,25 , 8 .
- - 6,5 , 7,25 .

• - 6,5 .

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• -

• - 8
• -6 7
• - 4 5
• - 3

• -
• - DGPS RTK.
• - RTK

• - 50%.
• - 25%, 50%.
• - 10%, 25%.
• - 10%.
• / / - 0%

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Bluetooth

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Bluetooth

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Bluetooth

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Bluetooth

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Bluetooth

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Bluetooth.

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Bluetooth.

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GSM.

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COM

COM

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GRX2.

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. 1-2.

	1	1 , , , 20 , , , :
	3 10	3-10 , ,

1-2.

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	10 20	10-20 , , , ,
	20 25	20-25 , , , , 25

. 1-2.

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	25	25

GRX2



GRX Utility

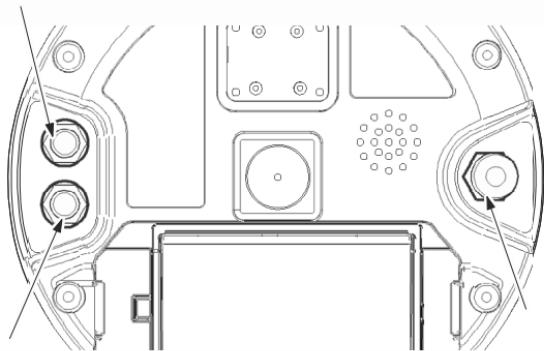
• , , () . 1-4 . 1-17): ;

• - ;

GRX2 () .

() .

() .

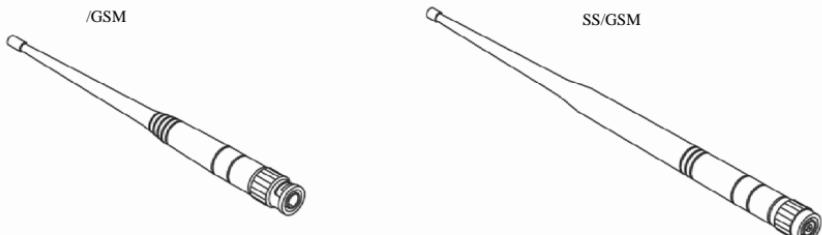


1-4.

GRX2

GRX2
(1-5).
GSM

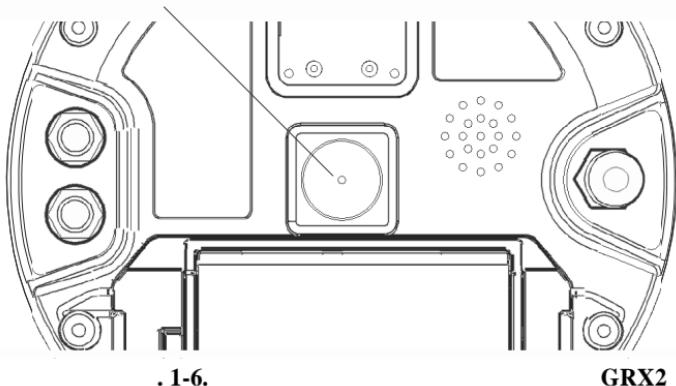
- : BNC
: 410–440 440–470
- SS (Spread Spectrum): TNC
().



1-5.

(. 1-6),

5/8"

**SD/SDHC SIM**

SD/SDHC SIM

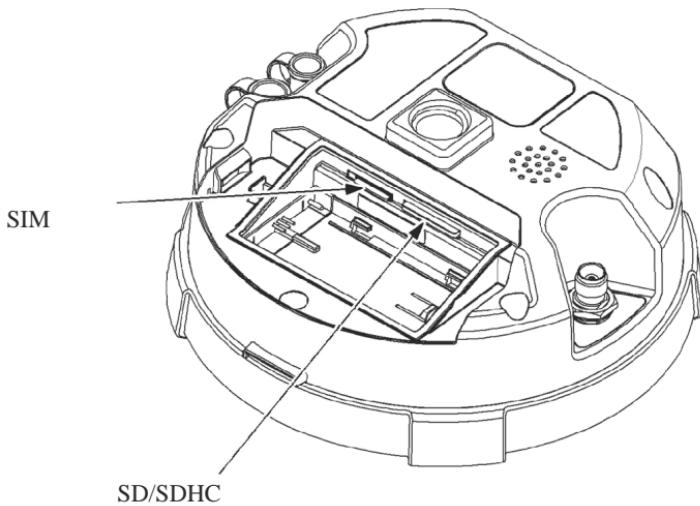
SD/SDHC

(. 1-7). , SD/SDHC,
 - SD/SDHC,
 Bluetooth. SD
 Sokkia SD/SDHC
 FAT16 FAT32,

SIM

SIM , SIM
 , GSM
 ,
 (GSM,
 SIM). GSM SIM

GRX Utility. SIM



. 1-7.

SD/SDHC SIM

GRX2

. 1-3.

GRX2

. 1-3.

()	<p>A diagram showing a coiled cable with a black connector at one end and a white connector with a small switch at the other end.</p>
-----	---

- 7,2 (BDC58) - (4300 A ,) - 2 .
- (CDC68)
- (73113/A/B/C) CDC68 (,)
- (DOC133, 72693) SHC250/ SHC2500/PC
- CD
- ()

GRX2

Sokkia

Sokkia

Sokkia

- 10
- SD/SDHC
- 3,7

(OAF)

Sokkia
(OAF),

Sokkia, Sokkia

- (GPS/ GPS/ L1;
 L2)
- (1 ())
 5, 10, 20
- RTK 1 , 5 , 10 20
- RTCM/CMR /
-
-
- (WAAS)
- (RAIM)

-
-

GRX2,



“ Sokkia” . 2-2.



SIM : SD/SDHC /

“ SD/SDHC SIM ”

. 2-3.



“ ” . 2-5.



Bluetooth

“ ” . 2-11.



, (3) , “ ” . 2-14.

Sokkia

Utility, , GRX

- GRX Utility

GRX Utility

, CD-ROM

,
,

GRX Utility

GRX Utility

Windows®

GRX Utility: Microsoft® Windows XP / Vista/7

RS-232C

Bluetooth.

GRX Utility.

GRX Utility:

1. , , GRX Utility, GRX Utility.zip.
2. GRX.Utility.exe GRX Utility.
3. GRX.Utility.exe,



Sokkia GRX
Utility

. 2-1. GRX Utility

GRX Utility,
*.exe.

Delete. GRX Utility
Bluetooth.

btconf.ini.
Bluetooth GRX Utility

SD/SDHC SIM

SD/SDHC SIM SD/SDHC

; SIM ;
, ,
, ,
Sokkia SD/SDHC ; SIM

SD/SDHC, FAT16/FAT32.

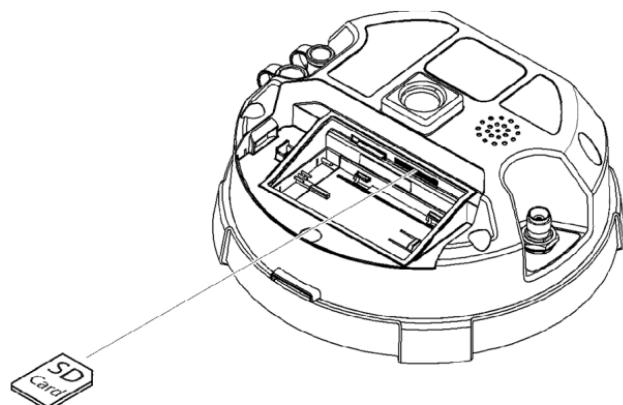
, ,

Bluetooth.

SD/SDHC (. 2-2):

1. ,

2. “ ”
2-6.
3. SD/SDHC



- . 2-2. SD/SDHC
-



SD/SDHC

SIM (. 2-3):

SIM (CSD),
SIM IP GPRS
EDGE

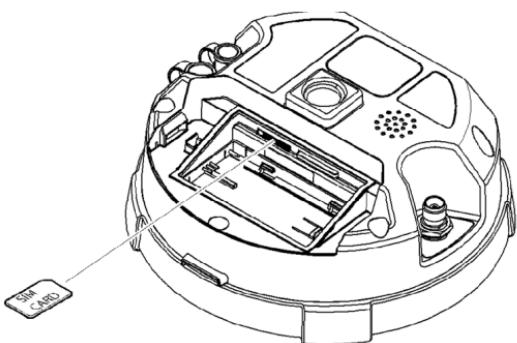


SIM

(CSD)

/

1. ,
- 2.
3. , SIM
4. SIM



- 2-3. SIM
- SIM

- 2,5 ,
- 5 .



500

80%

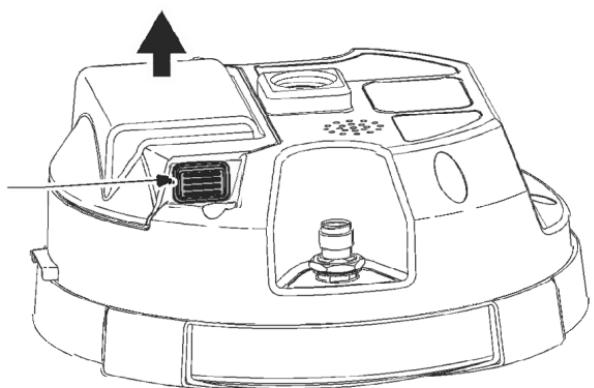
- 1.
 - 2.
 - 3.
 - 4.
- 2,5 ,

GRX2

, ().

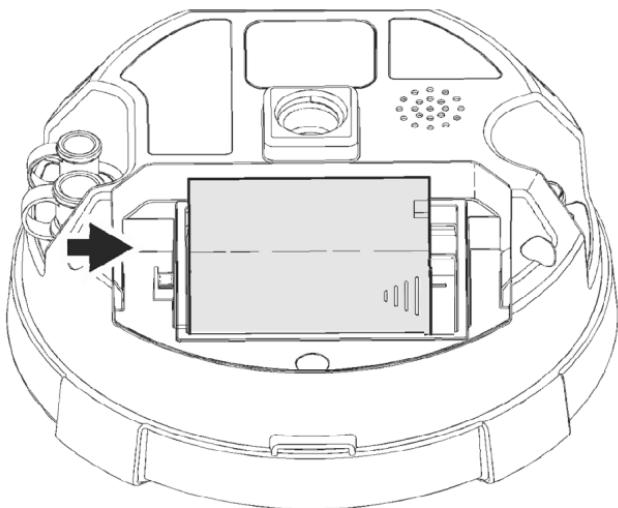
1. GRX2.

2.



. 2-4.

3.



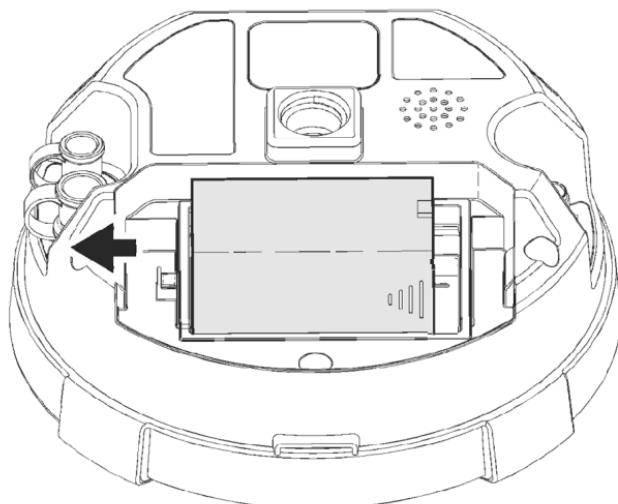
. 2-5.

4.

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2.



. 2-6.

3.

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GRX2

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3 10

. 2-1.

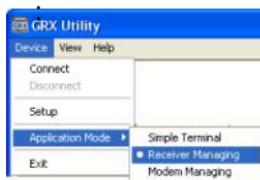
	1	
	3 10	
	10 20	
	20 25	
	25	

GRX Utility

GRX Utility,

RS232

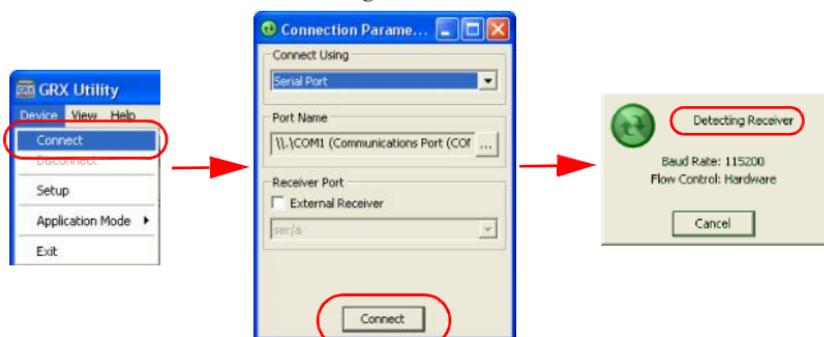
1. ,
 2. RS232
 3. (1) GRX Utility.
 4. Device Application mode Receiver
Managing. /



- ## 5. Device Connect. *Connection Parameters.*

Connect.

Detecting Receiver.



. 2-7.

RS232

6.

Device Disconnect:



GRX2



*External Receiver
Connection Parameters.*

GRX2

Bluetooth,

Bluetooth; , SHC250
USB-Bluetooth PCMCIA-Bluetooth.

Bluetooth,

, (

Bluetooth).

Bluetooth

RS-232

(

1-5,
RS232" . 2-10).

"



Bluetooth:



Bluetooth Power.
Bluetooth

OK,

RS-232 /
(. 6 “
RS232” . 2-10).
Bluetooth,

Bluetooth

1.

2. GRX Utility.

3. **Device Application mode**
Receiver Managing. /

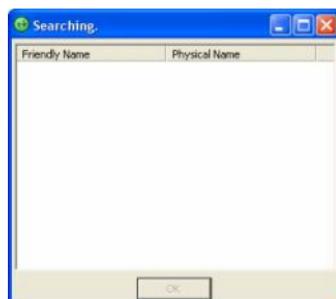


4. **Device Connect.** *Connection*
Parameters.

Bluetooth,

Connect Using

Bluetooth



. 2-8.

Bluetooth

5.

Bluetooth

Select Port

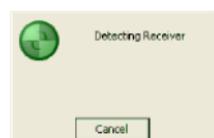
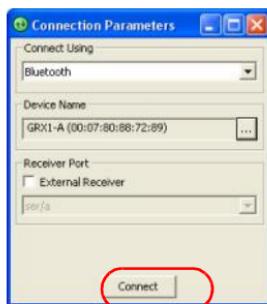
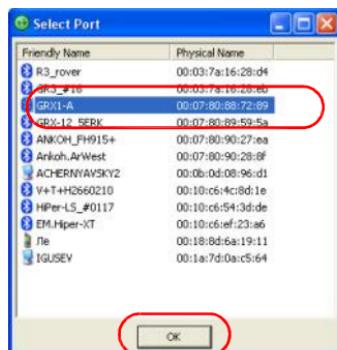
OK.

Connection

Parameters

Connect.

Detecting Receiver.



. 2-9.

/

Bluetooth

6.

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Device Disconnect:



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- ,
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- ,
- ,
- GPS 30 .
- GPS 12,5 ;
- 2,5 .

NVRAM.

1.

2.

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15 ,



15 ,

“ (NVRAM). ”
RAM Flash . 5-8.

-
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- NVRAM,
-
- (OAF).
-
- NVRAM.
-

GRX2

- RTK, ,
- GPS/ ,
- (, GSM/
GPRS CDMA)
- , ,
- GPS , ,
- , ,
- (,) /
- (, Spectrum Survey Office).

RTK



2.



RTK , RTK
" " . 3-9.



" . 3-5:



2.



," " . 3-9.



," GRX2" . 4-1.

Spectrum Survey Field.

GRX Utility -

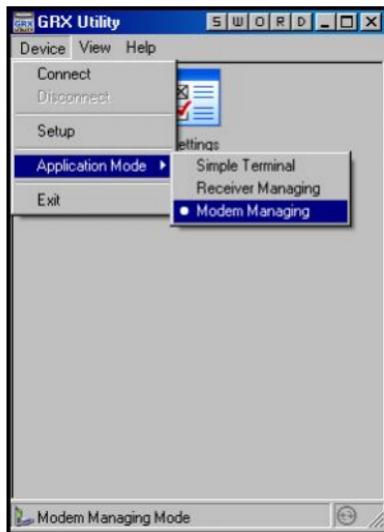
,
Utility

Sokkia
GRX.

GRX

- Bluetooth.
- ,
- :
- Windows 2000
- GRX Utility
- (RS-232) Bluetooth

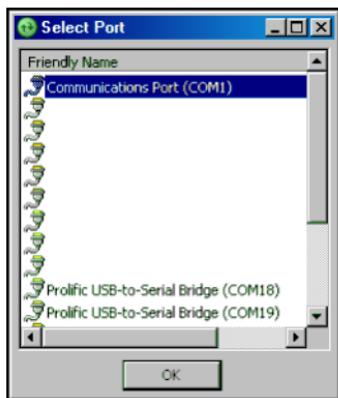
1. RS-232 Bluetooth.
2. GRX Utility. Device Application
Mode Modem Managing. Device Connect.



. 3-1.

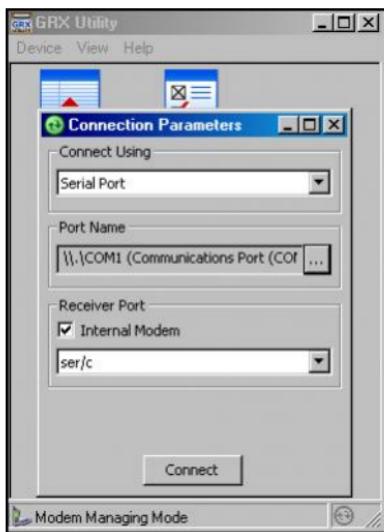
3. COM

4. COM ,
OK.



. 3-2. COM

5. C. Internal Modem
ser/c. Connect.



. 3-3.

6. GRX Utility



. 3-4.

GRX Utility

NOTICE

25

1.

GRX Utility

GRX2

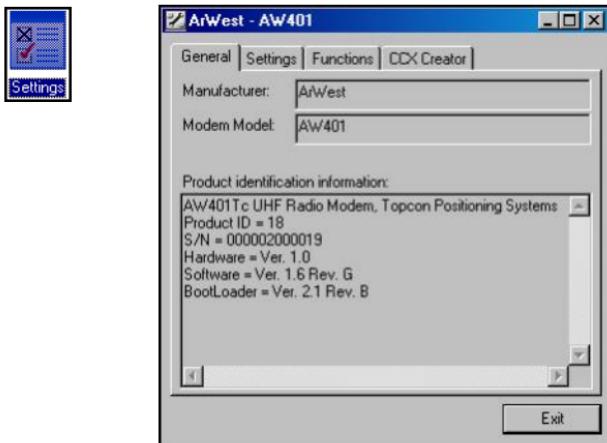
Modem Managing (

)



. 3-5.

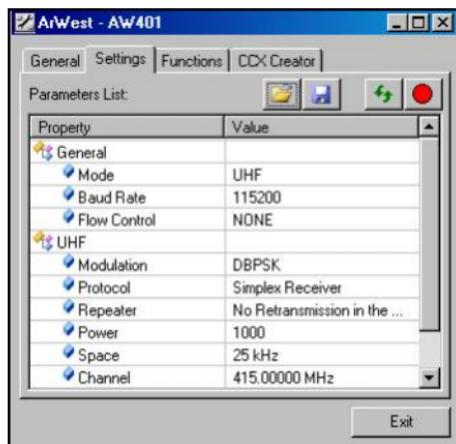
2. (Digital AW401),
General



. 3-6.

3. *Settings*,
 (. . 3-7 . 3-6).

, ,
 (().



. 3-7.

- *Mode* – ,
GSM/CDMA.

Baud rate –

38400



115200 ,
GPS.

- *Flow Control* – /

- *Modulation* –

GMSK. Simplex,
DBPSK, Trimble PDL,
GMSK.

- *Protocol* –

(GMSK). Simplex ,

- *Repeater* –

(Simplex).

- *Power* –

(10 1).

- *Space* –

- *Channel* –

- *Scrambler* – , (GMSK).
- *FEC* – ()

. 3-1.

. 3-1.

		12.5	25
DBPSK ()	Differential Binary Phase Shift Keying	4,8	9,6
DQPSK	Differential Quadrature Phase Shift Keying	9,6	19,2
D8PSK ()	Eight Phase Shift Keying	14,4	28,8
16QAM ()	Sixteen Quadrature Amplitude Modulation	19,2	38,4
GMSK	Minimal Shift Keying with Gaussian Filtering	4,8	9,6
4FSK ()	Four Level Frequency Shift Keying	9,6	19,2

GRX Utility,

GRX Utility
RTK RTK

GRX2

RTK

- RTK

RTK ().

- RTK

RTK

GRX Utility,

- Bluetooth,
()
- RS232

GRX Utility -

Sokkia

GRX Utility.

GRX Utility

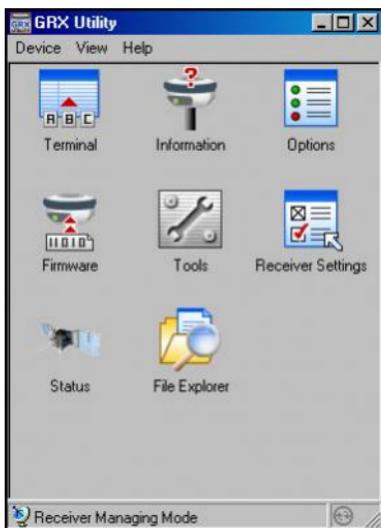
-

-



GRX Utility.

1. “ ” . 2-9.
2. GRX Utility
GRX Utility.



- . 3-8. **GRX Utility**
3. **Device Application Mode** **Receiver Managing.**
 4. **Device Connect.**
 5. **Connection Parameters**

- *Connect Using* – ,
,
Bluetooth.
-



Bluetooth

GRX Utility

Bluetooth

Bluetooth

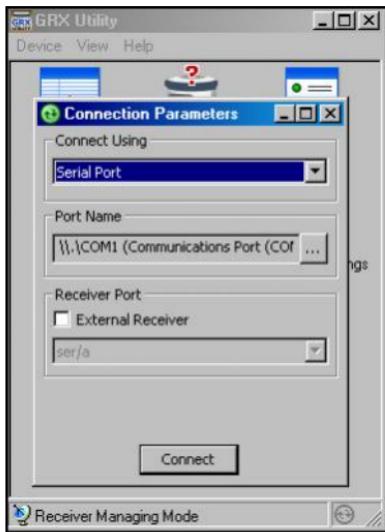
Bluetooth,

- *Port name* –

/

- *Port name*

6. **Connect** (. 3-9).



. 3-9.

GRX Utility

(. 3-10).

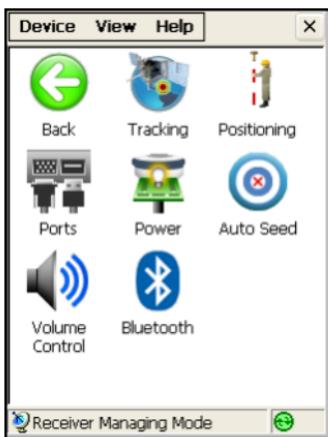


. 3-10.

GRX Utility

7.

Receiver Settings.

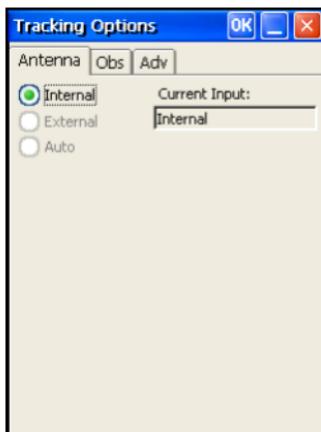


. 3-11.

8.

Tracking

(. 3-12).



. 3-12.

9.

*Observation**Elevation mask*

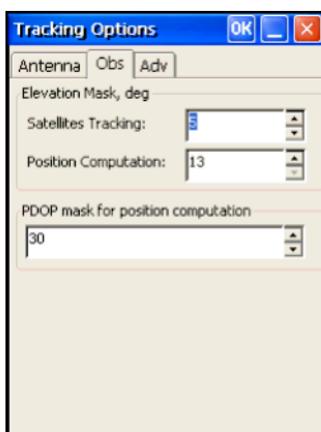
(

) 15

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(. 3-13),
PDOP),*PDOP mask***OK.**

. 3-13.

,

10. *Advanced.*

OK (. 3-14 . 3-15).

- *Anti-jamming* –

GPS, GLONASS, L1, L2.

,

- *C/A code multipath reduction* –

,

,

- *C/A carrier phase multipath reduction* –

,

,

- *Cinderella* –

Cinderella, 24

,

GPS.

- *Static Co-Op tracking* –

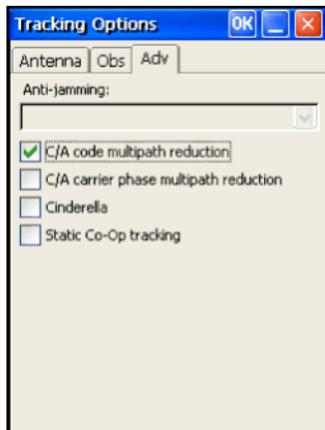
,

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-

“ - ”

,



. 3-14.

11. **Seed** (. 3-15 . 3-16), **Auto**
OK.

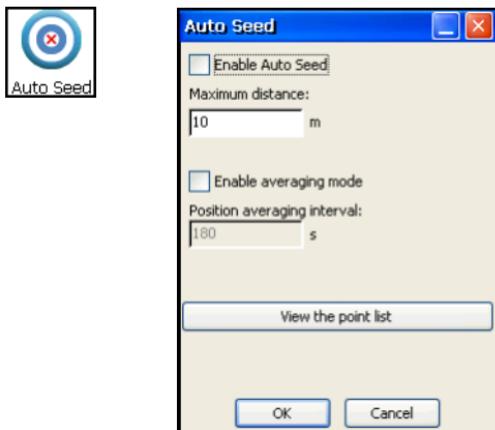
- *Enable Auto Seed* (. 3-15 . 3-16):

RTK

- *Maximum distance*:

- *Enable averaging mode*:

Position averaging interval.



. 3-15.

• **View the point list,**

GRX Utility.

12.

Positioning,

OK (. 3-16 . 3-17).

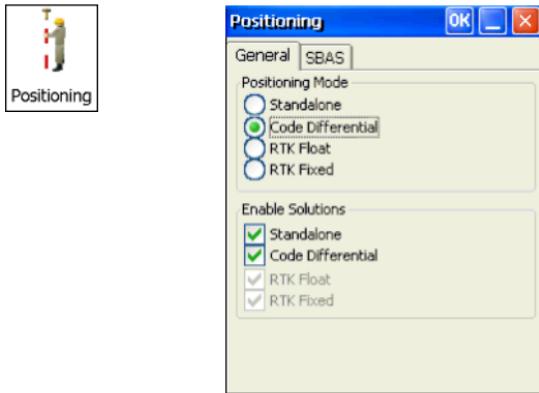
- *Positioning Mode –*
Standalone; RTK
RTK float RTK fixed.
- *Enable Solutions –*

– Standalone – 3D

– Code differential –

– RTK float –

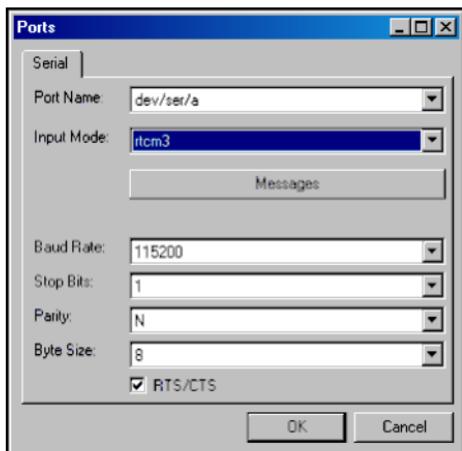
– RTK fixed –



. 3-16.

13. RTK ,

Ports, OK (. 3-17 . 3-18).



. 3-17.



14.

OK.

GRX Utility
NVRAM.

GRX Utility.

15. RTK ,
3-19),

Status (. 3-18

10-30 ,
Spread Spectrum ,
60 ,
GSM
Data Link

(%);

- () ;
- () () ;
- () () () - ;
- , Link Quality ,
100%.



Status				
Position		Data Link	SVs List	Sky P
Data Link	1			
Data Link Identifier	ser/d			
Decoder	RTCM 3.0			
Ref Station	0000			
Link Quality	100%			
DLink Delay	1			
Received Messages	380			
Corrupt Messages	0			

. 3-18. Status - Data Link

16.

Device Disconnect, **Device Exit**,
GRX Utility.



Sokkia
Spectrum Survey Field.
Spectrum Survey Field
Spectrum Survey Field.

GRX2

GPS

“

” . 2-14).

1:

RTK

□

“ ” . 4-1.

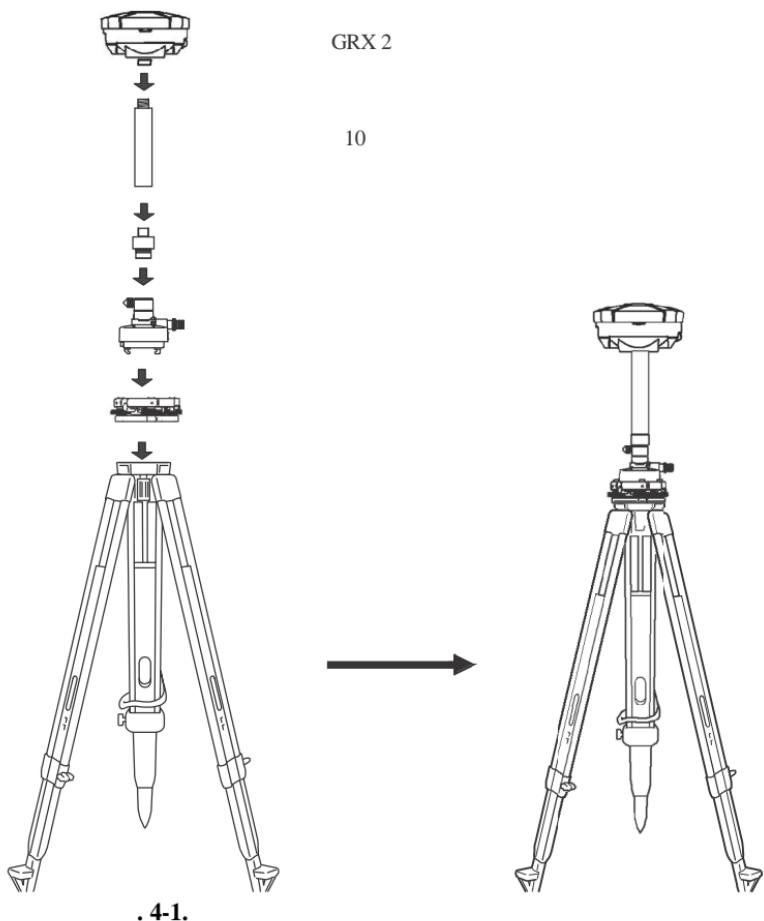
□

“ ” . 4-3.

(. 4-1):

1.

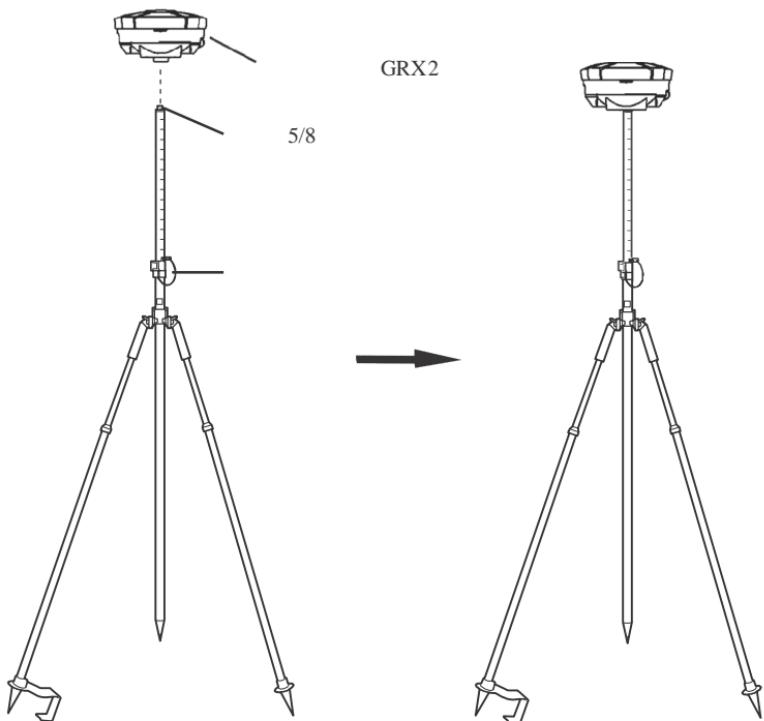
- 2.
 - 3.
 - 4.
 - 5.
 - 6.
 - 7.
 - 8.
- (10).
GRX2.



(. 4-2 . 4-3):



1. GRX2 (5/8)



. 4-2.

GRX2

2:

3D

-
-
-

-
-

GPS/

“ ”

GPS/

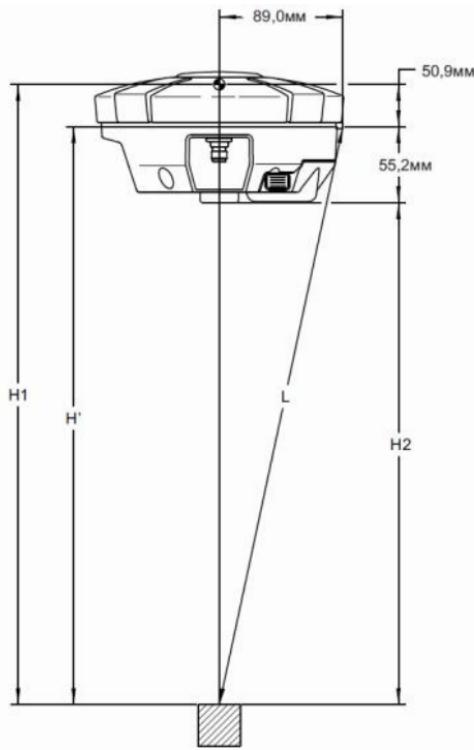
-

“ ”

1.

(. 4-3 . 4-5).

2.



. 4-3.

- L:

,

- H':

,

$$\bullet \quad H' = \sqrt{L^2 - (89)^2}$$

- H1:

$$(H1 = H' + 50,9 \quad)$$

- H2:

$$\bullet \quad , \quad (H2 = H' - 55,2 \quad)$$

4-1.

L1	L2
106,1	102,3

(, , ,).

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, , (5-30

)

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•

- (DOP)

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- -
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,

(, Spectrum Survey Field).

**(Stop
& Go)**

(stop & go)
Spectrum Survey Field.

1

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Bluetooth),

(GPS,

Sokkia

GRX Utility

GRX Utility

1.

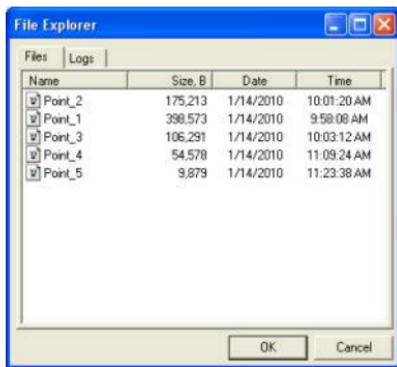
GRX Utility. “ ” 2-9.

2.



File Explorer,

(. 5-1).



. 5-1.

File Explorer

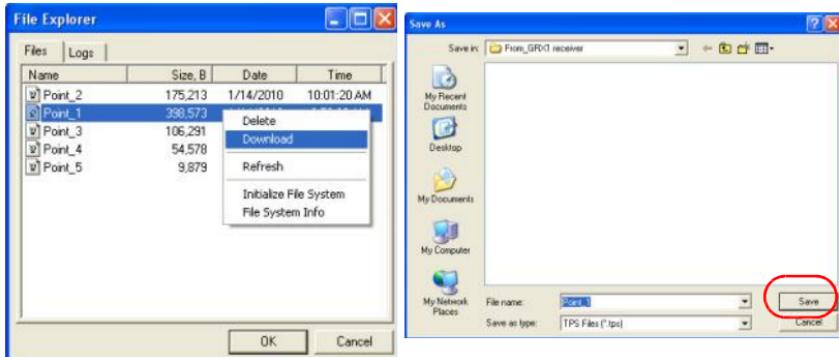
3.

Download.

Save As

(. 5-2).

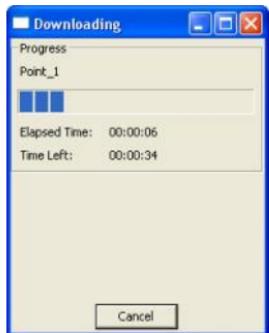
Save,



. 5-2.

4.

Downloading,



. 5-3.

GRX Utility

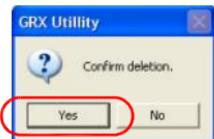
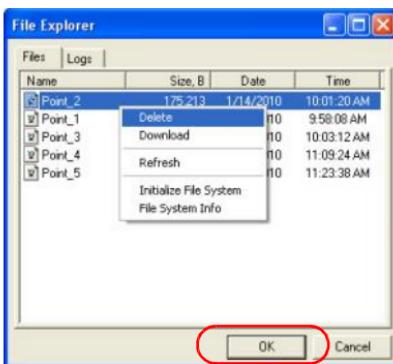
1 2,

” . 5-1.

File Explorer

,
Delete.

Yes.



. 5-4.

SD/SDHC 20-25 (. . 1-2 . 1-14).

- SS – , , ().

- N – ,

L1:

$$SS = 183 + 22 * N$$

L1 L2:

$$SS = 230 + 44 * N$$

- (L1, L1/L2 . .), ;

• ,
 ;
 • /

Sokkia

GRX Utility.

1. GRX Utility. “ ” 2-9.

2.



Receiver Options,

Receiver Options

Option Name	Current	Purch...	Leased	Exp. Date
GPS	Yes	No	Yes	1/14/2010
Glonass	Yes	No	Yes	1/14/2010
L1	Yes	No	Yes	1/14/2010
L2	Yes	No	Yes	1/14/2010
Cinderella	Yes	No	Yes	1/14/2010
Position Update Rate, Hz	100	Disabled	100	1/14/2010
Raw Data Update Rate, Hz	100	Disabled	100	1/14/2010
Code Differential Base	Yes	No	Yes	1/14/2010
Code Differential Rover	Yes	No	Yes	1/14/2010
RTK Base	Yes	No	Yes	1/14/2010
RTK Rover, Hz	100	Disabled	100	1/14/2010
Memory, MB	Not supported	0	6,144	1/14/2010
Co-op Tracking	Yes	No	Yes	1/14/2010
1-PPS Timing Signal	Double	No	Double	1/14/2010
Event Markers	Single	No	Single	1/14/2010
In-Band Int. Rejection	Not supported	Disabled	Enabled Outside USA	1/14/2010
Mininum Darkutton	Var	No	Var	1/14/2010

Upload OAF

5-5.

Sokkia.

Sokkia: options@sokkia.com

1.

1 2,

“

” . 5-5.

2.

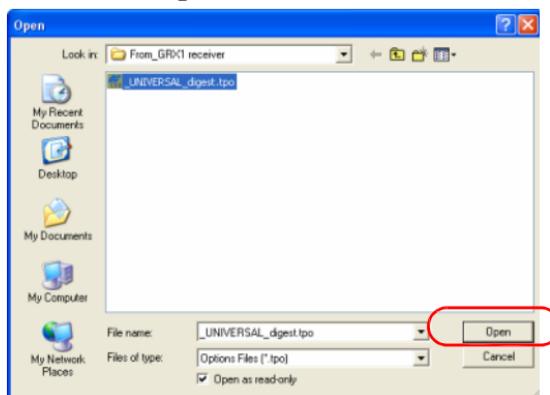
Upload OAF

Receiver

Options (. . 5-5).

3.

Open (. . 5-6).



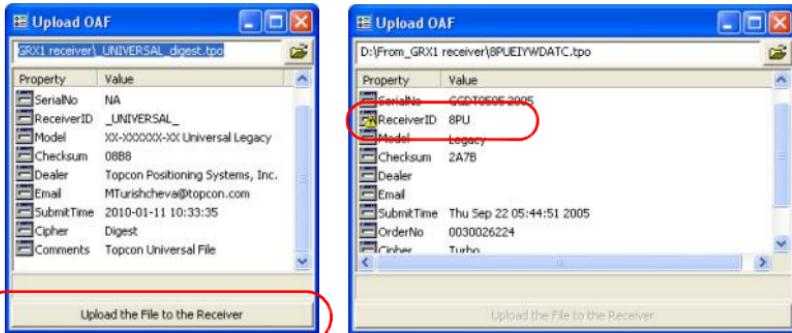
. 5-6.

4.

GRX Utility

ID

Upload OAF

Upload the File to the Receiver

. 5-7.

5. , *Upload the File to the Receiver.*

6. , GRX Utility

(. . . 5-8). **Yes.**



. 5-8.

?

- ramimageldr – RAM ()
- mainldp – Flash ()

GRX,

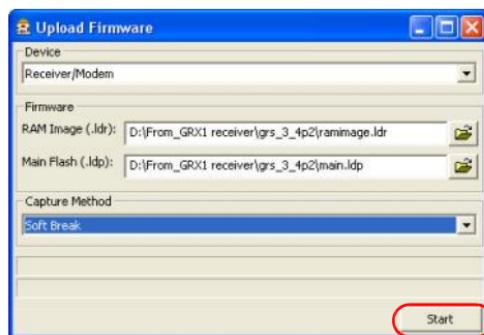
1. GRX Utility. “ ” . 2-9.

2.



Upload Firmware,

3. Device “Receiver/modem”.
4. Capture Method “Soft Break” ().
5. RAM Flash

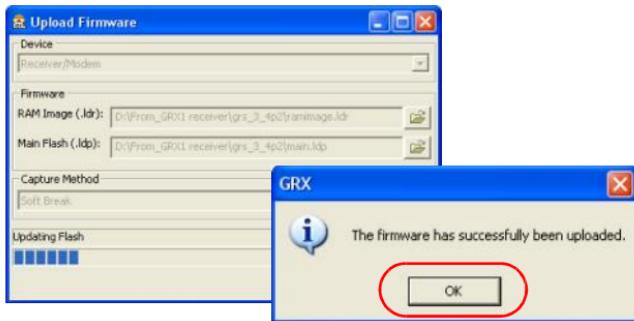


. 5-9.

6.
7.

Start.

OK.



. 5-10.

(NVRAM)

(NVRAM)

, NVRAM

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()

NVRAM

), NVRAM

NVRAM

(15), NVRAM

NVRAM

NVRAM GRX Utility

1. GRX Utility. “ ” 2-9.

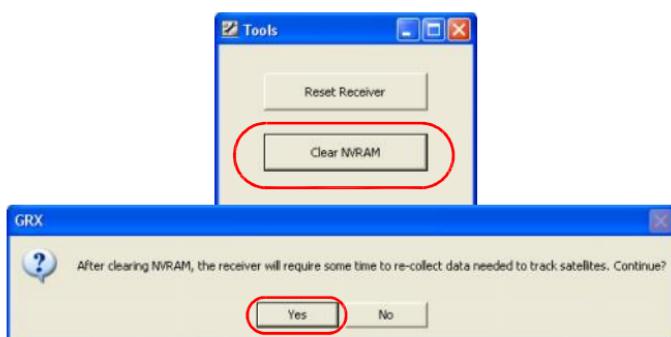
2.



Tools

Tools,

NVRAM



. 5-11. Tools

3. Clear NVRAM, Yes,

GRX2.



Sokkia,

Sokkia.

“ Bluetooth

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,” . . 6-11.

Bluetooth

,

“GRX Utility

. 6-12.

” .

“

”.

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1.

(. “

GRX Utility
. 2-9).

2.

Configuration Receiver.

3.

**General
Charger.**

Power

“Auto”.

Auto

Apply.



NVRAM

(. “

RAM

Flash

.” . 5-8).



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“

” . 2-5.

” 2-5.



Sokkia.

GRX2.



” “ GRX2” 1-10 “
” . A-12.





,
, (cmd).

1.

(.
" " . 2-9),

GRX Utility.

2.

Configuration Receiver Ports.

3.

Input

,
“Command”.



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"
" . 2-14.



(L1/L2, GPS/GLONASS)

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"
" . 5-4.

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GRX Utility.

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1.

GRX Utility.

” 2-9.

2.

Configuration Advanced
Multipath Reduction.
Apply.

RTK



GRX Utility



3.

3.



” 5-4.

Sokkia

GRX Utility.



• ,

• ,

“ ” . 2-14.



• , / :

1.

GRX Utility. “ ” . 2-9.

2.

Configuration Advanced
Ports.

/



(PDOP/GDOP
).

PDOP.



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Sokkia



A black arrow pointing to the right, indicating a continuation or next step.

A black arrow pointing to the right, indicating a continuation or next step.

A black arrow pointing to the right, indicating a continuation or next step.

→

SD/SDHC

“ SD/SDHC SIM
2.3

. 2-3.

” . 5-5.



- / ,
“ ” (. 5-1 “
GRX
Utility” . 5-3).

Bluetooth

Bluetooth, GRX2.

GRX Utility : Can't find
receiver ()



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- Sokkia ,



COM , ,
GRX Utility.

- , ,
RS232 ,

GRX Utility.

- . “ ,
” . 2-11.



,
(cmd).

1.

(.
“ ” . 2-9)

GRX Utility.

2.

Configuration Receiver Ports.

3.

Input ,
, “Command”.



GRX Utility



D

- D : 115200
- baud rate, 8 data bits, 1 stop bit, no parity, no handshaking.
- D RTS/CTS handshaking
- ().



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D).

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“ ” . 5-4.

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Sokkia

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GRX Utility.

GRX Utility

: Open

COM# port failed: Access is denied (
#:)



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- ,

- , “PWR”.

-

- , Sokkia ,



2(C)

1.

RS232 (. . . “ . . . RS232” . 2-10).

2.

Configuration Receiver General.

3.

Turn on/off Slots

Slot 2(C).

Bluetooth

Bluetooth



Bluetooth

- ,

Bluetooth

- . . “ . . . ” . 2-11.



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Bluetooth.

1. Bluetooth, Bluetooth manager.
2. Bluetooth.

GRX Utility

GRX Utility.

GRX Utility



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Sokkia

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, Bluetooth, , ()

Bluetooth.

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Bluetooth.

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GRX2 - A.



• , “ ” . 5-4.

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Sokkia



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1. **Connection** **Cancel**
Connecting to device **Stop.**
2. **GRX Utility** **Tools Options.**
3. , **Ok.**
4. **File Connect.**

,

,

Sokkia.

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“ ”

. 6-1. ,

, :

- 1-800-4-Sokkia 1-800-476-5542
- 1-866-4-Topcon 1-866-486-7266

Sokkia

Sokkia

(. . 6-1).

. 6-1.

,
(, ,)		support@topcon.com
		support@topcon.com
(OAF)		support@topcon.com
RTK		support@topcon.com
GRX Utility		support@topcon.com
	...	support@topcon.com
“ ”		service@gis.ru



1.

GRX Utility **Help** **About**
Save to file.

2.

GRX Utility, , ,

3.

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4.

, . . ,

5.

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24

Sokkia

Sokkia.

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Sokkia: <http://www.sokkia.com>

“ ”: <http://www.gsi.ru>

Sokkia Topcon

226-

Bluetooth

GSM (),

SD/SDHC.



6

15



PDOP ,



GRX2

. A-1

. A-1.

. A-1.

()

	22
<hr/>	
	-20 +65°C (); -40 +65°C ();
	-45°C +70°C
	100%
	IP67
<hr/>	
	BDC58, - , 4300 () / 7,2
	195
	2,5
	7,5 (20°C / / Bluetooth)
	1
	6 18

. A-1.

()

	4 ()
	CDC68
	NVRAM 10 .
	/
	Bluetooth V2.1 x 2- () RS-232C x 1
	COM1: 4800 115200 (RS) 115200 () Bluetooth: 115200 (SPP / Single Channel)
	(BNC TNC , , RS232C
NMEA	
NMEA	2.1, 2.2, 2.3, 3.0
	GGA, GLL, GNS, GRS, GSA, GST, GSV, HDT, RMC, VTG, ZDA, ROT, GMP
	1 , 5 , 10 , 20
DGPS	
	RTCM SC104 Ver 2.1, 2.2, 2.3, 3.0, 3.1
RTCM	1, 3, 9, 31, 32, 34;
	10 (); 20 , 50 100 ()
	10 (); 20 , 50 100 ()
RTCM	0 90 ()

. A-1.

()

RTK	
	CMR2/CMR+, RTCM SC104 Ver 2.2, 2.3, 3.0 3.1
RTCM	3, 18, 19, 20, 21, 22;
	OTF (L1, L1/L2)
	50 32
	5 10
CMR/RTCM	1 (); 5, 10, 20 ()
	0 90 ()
	() ()
	1 (); 5, 10, 20 ()
	L1: 3 + 0.8ppm ()/5 + 0.5ppm () L1+L2: 3 + 0.5ppm ()/4 + 1ppm ()
	L1+L2: 3 + 0.5ppm ()/5 + 0.5ppm ()
	L1+L2: 10 + 1ppm ()/15 + 1ppm ()
RTK	L1+L2: 10 + 1ppm ()/15 + 1ppm ()
DGPS	<0,5
“ ”	<40
“ ”	<20 ()
	<1

GPS

. A-2

GPS

. A-2.

GPS

()	
GRX2	: G: GPS L1 GD: GPS L1/L2 GG:GPS/GLONASS L1 GGD: GPS/GLONASS L1/L2
/ /	FH915 + TX/RX FH915 + TXUHF + GSM + GSM + CDMA
()	226 (G, GG, GD, GGD) L1 GPS, L1/L2 GPS, L1 , L1 GPS + L1 , WAAS/EGNOS,
	GPS/GLONASS, L1/L2 C/A , WAAS/EGNOS/MSAS/QZSS ,
/	: ,
- (o-op tracking)	/ , , ,
WAAS/EGNOS/ MSAS	()

. A-2.

GPS

()

	TPS, NMEA, RTCM, CMR
	10 RTCM SC104 RTCM
	20 (0,1 2.1, 2.2, 2.3, 3.0, 3.1 I/O. (RAIM)
	CMR CMR+.
	SD/SDHC
	SD/SDHC
	0,05 86400 ,

GPS

Cinderella,
GPS

24

Cinderella
Sokkia.**Bluetooth**

. A-3

Bluetooth.

. A-3.

Bluetooth

	10 (), 50 ()
	1
	SPP ()

. A-3.

Bluetooth (

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Spread Spectrum ()

. -4

. A-4.

Spread Spectrum

(/)	902 - 928 M () 915 - 925 ()
	, FHSS
	5 ,
	128
	100
	FSK, 64
	135
	- , -
	, , ,
	FH915, FH915+
(TX)	
	250 (24dBm) / 1 (30dBm),
(RX)	
	-105 dBm 10-4 BER
	105 dBm

. A-4.

Spread Spectrum

	RS232
	9600, 19200, 38400, 57600 ,
	9600, 10200, 17000, 51000 . FH915; FH915+
	FEC (15,7),
	,
	TNC,
	2,5 dBi

GRX2

. A-5

. A-5. {

GRX2

/ / ()	410-470
	GMSK, DBPSK DQPSK
	12,5 /25
25	<ul style="list-style-type: none"> • GMSK/DBPSK – 9600 • DQPSK – 19200
12,5	<ul style="list-style-type: none"> • GMSK/DBPSK – 4800 • DBPSK – 9600
	115200

. A-5. {

GRX2

GSM/GPRS ()

. A-6

GSM/GPRS,

. A-6.

GMS/GPRS

	EGSM:900/1800
	0,6 (850); 2 (900); 1 (1800/1900)
GPRS	8; 85,6 ; B GSM 07.10 ; CS1-CS4;
CSD	14,4 ;
SMS	MO/MT Text PDU;

(BDC58)

. A-7

BDC58.

. A-7.

	7,2
	4,3A
()	38 x 70 x 40
	195

(CDC68)

. A-8

CDC68.

. A-8.

:	100 - 240
(- 25°C):	4 (.) 25°C,
:	0 40°C
:	-20 65°C
()	94 102 36
	170

GRX2 3 :

. A-9, . A-10 . A-12 . A-11 . A-13

. A-9.

	BNC	I/O	I/O	RF/GSM
FH915/915+	TNC,	I/O	I/O	RF/GSM

- 5 -

(. A-1).



. A-1.

. A-10

. A-10.

1	Power_GND	P	,
2	Power_INP	P	
3			

. A-10.

()

4			
5			

C-RS232(RS232) - 8-
(. A-2).

. A-2. () RS232

. A-11

. A-11. (RS232)

1			
2	RXD		
3	TXD		
4	GND	I/O	
5	GND	I/O	
6			
7	RTS		
8	CTS		



NOTICE

25



WARNING

Sokkia

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Sokkia



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100°



WARNING



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NOTICE

RTK

1.

RTK

2.

FCC

(FCC)

FCC

OET65.

) : , , 15 20 . FCC.

1.

2.

ECC

15

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: GRX2

	Sokkia
	Topcon Positioning Systems, Inc.
	7400 National Drive, Livermore, CA 94550
	+925-245-8300

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RSS-102

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: www.hc-sc.gc.ca/rpb.

2,4

2,4

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GRX2/U 2.4dBi

/

410-440MHz ANTENEX/G420BN

440-470MHz CENTURION/EVR450

GRX Utility

1999/5/EC

(1999/5/EEC)

- EN 301 489-1 V1.8.1 (2008-04)
- EN 301 489-5 V1.3.1 (2002-08)
- EN 301 489-17 V1.3.2 (2008-04)
- EN 300 328 V1.7.1 (2006-10)
- EN 300 113-2 v1.4.1 (2007-07)
- EN 62311:2008
- EN 60950-1:2001 + A11:2004



(WEEE)



Sokkia

Sokkia,

Sokkia

Sokkia,

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Sokkia

90

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Sokkia



SOKKIA



ISO 9001:2000
FM 6 844 8

GRX2 Руководство по эксплуатации
№: 7011-0784 Версия А 1/10