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27 2002 . 184- « — 1.0—2004 « », *

1 « - » (« ») *

2 363 « »

3 15 2012 . N9 811- -

4 « « » — () - - - -

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Федеральное агентство
по техническому регулированию
и метрологии

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по техническому регулированию
и метрологии

Федеральное агентство
по техническому регулированию
и метрологии

Global navigation satellite systems.
Maritime differential subsystems.
The remote control and operation system.
General requirements, test Methods and required test results

—2013—05—01

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() mOHACC/GPS/ (1). RSIM
[2].

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8

5286 —2007
60945—2007
52926—2010
« », 1
() (),

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3.1

3.1.1

52926,

3.1.2	:	(Z-)	
RTCM		OPS.			
3.1.3	:		UTC (SU).		
3.1.4	:				
3.1.5	:				-
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Z-)	,			-
3.1.6	:	,			-
3.1.7	:	,			- -
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3.1.9	:				-
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3.1.10	:	,			-
3.1.11	:	,			-
					-
3.1.12	:				-
3.1.13	;	:			- -
3.1.14			;	UDRE:	-
					-
3.1.15	:				-
					-
3.1.16	:	,			-
3.1.17	:	,			
3.1.18	:				-
3.1.19	:				-
					-
3.1.20	:	,			
3.1.21	:				-
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3.1.23	:	,			
3.2	:				
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— ;
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 — ;
 — ;
 -90— « 1990 .»;
 — ;
 PDOP — ;
 — ;
 ALM — ;
 8CS Server — ;
 BCS Client — , ;
 GPS — ;
 DGPS — GPS;
 HDOP — ;
 :
 MER — ;
 MS — ;
 PDOP — -
 :
 RRC — ;
 RTCM — ;
 RSIM — ;
 SNR — / :
 SS — ;
 SV — ;
 UDRE — ;
 URA — :
 UTC — ;
 UTC (SU) — ;
 VDOP — ;
 WGS-84 — 1984 ;
 Z-count—« »

4

4.1

8

», RSIM , «RTCM —
 », «RSIM — » [2].

1—27

DGPS. 51 55
56 99

GPS. 28—50

1—8.10—27

8

RSIM-
GPS

4.1.1

40- 1

[3]:

OHACC/GPS/

(GPS);

.GPS

283.5—325

MSK

(

G1D);

RSIM

RSIM (Reference Station/Integrity Monitor)

[4].

8

RSIM.

0.995.

4.1.2

MSK-

(5):

52866,

60945.

4.1.2.1

RTCM.

MSK—

/

[5].

4.1.2.2

4.1.2.3

4.1.2.4

/
3-

{6}.

4.1.2.5

(-).

(-).

4.1.2.6

2400

11C.
4.1.2.7

G1D.

4.1.2.8

4.1.2.9

4.1.2.10

100 %

4.2

4.2.1

RSIM
RSIM

«RSIM #», RTCM SC-104 «RTCM #», RSIM#
 1. :
 • :
 • :
 • :
 4.2.2 (6) [2].
 (6) RSIM [6].
 RSIM (4).
 5.2.1.3. RTCM «RCM»,
 «\$PRC » RTCM RSIM RSIM
 (*hh < CR >< LF >).
 8 RSIM
 [6] (6).
 RSIM
 NMEA «ALM». [] :
 • 82. (6).
 • RSIM#1, #22 #23.
 MareNMEA. RSIM
 [6]. RSIM [4]
 (5.2.3).
 • NMEA, [12]. (*422[13].
 4800 [2].
 («0.25» «.25», «15.0» «15.»).
 [6] (6).
 .1 * *
 (*).
 • RSIM.
 {RSIM#7, #13. #19).
 4.3
 4.3.1
 RSIMS1 RSIM#10.
 : (SPRCM.1,10.1.,*0D<CR><LF>).
 RSIM#3.
 RSI #5
 4.3.2
 8
 RSIMS18. RSIM RSIM#15
 RSIM#1

4.3.3

4.4 RSIM RSIM

GPS 1 32.
 65 96.
 () GPS
 [7].
 [6].
 [9]. [10].
 [5] (3.2.6)

RTCMS5.33.

RSIM#7 © RSIM#8.
 RSIM#7 #9.

RSIMS12.

RSIM#17, #19 #20.

RTCM 1 9 ,
 RSIMkft
 8 RSIM .8 UTC (SU).

RTCM RSIM

5 RSIM

RSIM 1.

1— RSIM

RSf.1 •	
1	RSIM # /
2	
3	
4	
5	
6	
7	

1

RS1M *	
8	
9	GPS
10	
11	
12	
13	
14	
15	
16	/
17	
18	
19	
20	
21	
22	RTCM
23	RTCM
24	()
25	
26	ASCII
27	
51	
52	
53	
54	()
55	

[2]

8 , GPS (1*32)
 (65-96). 8 RSIMS3 (hard), -
 (RSIM#7.13, 19) . 8
 — « » —
 []
 5.1 RSIM#1.
 RSIM RSIM RSIM#1
 # 1 2 3 4 5 6
 SPRCM, 1, . , , . , . , _____*hh<CRXLF>,
 1— RSIM
 2—
 1 — 1—
 2— 2—
 3 — 3—

3— 0- .1= .
4—
5—
6 — , , , , ()
).

1 , , RSIM-
3—5

2 0 , , RSIM

3 « » 1 , ,

4 , , RSIM RSIM#1. RSIM01
: 1—5

5 RSIM023
(RTCM » - -
RSIM#20) , -

6 RSIMW23. RTCM 4 , , -
RSIM#23 0. RS1M023 RTCM ,
RTCM RTCM RTCM

5.2 RSIM#2.

1 2

5PRCM,2 ,hhinass.ss,x..x*hh<CRXIF> ,

1 op nUTC

2— RSIM#

1 RSIM. SPRCM.
2 , ,

3 SPRCM / , ,
RS1M# 2.

5.3 RSIM#3.

1

\$PRCM,3, a*hh<CRXLF> ,

1— :
D— :
— :
F— :
— :

1

2

3

4

5

5.4

RSIM#4.

RSIM#5

« »

RSIM#4.

1

SPRCM,4, . * hh<CR><LF>,
1—

5.5

RSIM#5.

[11].

(RSIM#3).
«NORMAL» (

),

[11].

#1 2

\$PRCM,5, hhmss.as, c-c*hh<CR><LF>,
1—

1—

(UTC);

2—

:

• <256 — ASCII;

• «NORMAL» — ;

• «NORMAL».

— , «NORMAL»,

5.6

RSIM# 6.

GPS

* 1 2 3 4 5 6 7 8 9 1 0

SPRCH, , , , , 1111.111111, , , , , .x*hh<CR><LF>,

1 — ;
 2— (00: ;
 3— ;
 4— — ;
 5— (N) (S);
 6— — ;
 7— (W) ();
 8— () ;
 9— ;
 10— RT .

1 , -
 (RSIM# 20) RTCM
 2 RTCM , ,
 5.7 RSIM# 7. 10.

GPS.

[7]. [8]. [9].

1 2 3 4 5 6 7 6 9

\$PRCK,7,x,x,hhmmsa.ss,x.x,x.x,x.x,x.x,x.x,x.x,x.x*hh<CR><LF>.

1— (1). RTCM 1 4;
 2— ;
 3— ;
 4— ;
 5— ;
 6— ;
 7— / ;
 8— URA -
 GPS. ;
 9— .

1 4—9
 2 , ,
 3 (,) ,
 4 / () .
 5 [7], — [8]. 4.
 5.8 RSIMS8.

RSIM

t1 2 3

\$SPRCM,8, . . , hhmss.8e*hh<CRXLF>,

1—

99—
GPS.

2

2—

0—

1—

2—

3—

1

2

RSIM#7 RS1M#9.

5.9

RSIM#9.

GPS

#1 23 4 5 6 7 8 9 a b c d e f g h i j k

SPRCM,9,hhmss.ss,x,x,x,x,x,x,x,x,x,x,x,x,x,x,x,x,-x,x,x,x,x,x,x,
l r a n o p q r s t u v w x

x,x,x,x,x,x,x,x,x,x,x,x,x,x,x,x,x,x*hh<CRXLF>,

1—

2—

3—

4—

1;

2;

GPS

3 32.

0—

1—

2—

3—

4—

5—

6—

7—

8—

9—

1

0.1,2

2

6 7

5.10

RSIM#10.

no

1 2 3 4 5 6 7 8

5PRCM, 10, , , , , , , , , c--c*hh<CRXLF>,

- 1— :
- 2— ;
- 3— :
- 0— ;
- 1— 1 0:
- 2— ;
- 3— ;
- 4— ;
- 5— :
- — MSK:
- 1 _ FSK;
- 2— ;
- 3— :
- 6— :
- 0— ;
- 1— :
- 7— :
- 0— ;
- 1— ;
- 8— .

- 1
- 2 ,
- 3
- 4 1 8
- 5.11
- 8
- RSIM#11.
- RSIM021.
- RTCM#7/35,

#12 3 4

SPRCM, 11, , . ^ . . . x*hh<CRXLF>,

- 1— ;
- 2— (PRC);
- 3— (RRC);
- 4—
- 1 - ,
- 2 GPS,
- 5.12
- RSIM#12.
- RSIMJH2.

*1

2345

SPRCM,12,hhramss.ss,a,a,a,a*hh<CR><LF>,

1— UTC;
2— : :
I — :
S — , ;
3— : :
F— , :
W— , ;
U— , ;
— , ;
4— : :
— ;
N— , ;
5 — : :
— ;
N— . .
5.13 RSIM#13.

#	1	2	3		4	5	6	7	8	9
---	---	---	---	--	---	---	---	---	---	---

\$PRCK, 13,x,x,hhnxnss. 88, . . . , . . . , . . . , . . . , *hh<CR><LF>,

1— (1-). RTCM 1 4;
2— ;
3— (UTC);
4— ;
5— (PRC);
5— ();
7— (PRA);
8— (UDRE);
9— RTCM 2- ;
— ;
b— ;
— (PRC);
d— (RRC);
— (PRA);
f— (UDRE);
g— RTCM 2- ;
h— ;
i — ;
j— (PRC);
— (RRC);
l — (PRA);
m— (UDRE);
n— RTCM 2- ;
— .

, 3

5.14 RSIM#14.

1 2 3 4 5

SPRCM,14, . , ~ , , , x*hh<CRXLF>,

- 1— ;
- 2— / ;
- 3— :
 - — MSK;
 - 1 — FSK:
- 4— :
 - 0—
 - 1—
- 5— :
 - —
 - 1—

5.15 RSIM#15.

1 2 3 4 5

SPRCM, 15 ,hmmss. ss, ,x.x*hh<CRXLF>,

- 1— ;
- 2— :
- 3— / ;
- 4— ;
- 5 —

1 RSIM316 (3.5.7).
2

5.16 RSIM#16. /

#12 34 5 67 89

SPRCM,1 , . , . , X . X , X . X , . , . X , X. ,X , X . X , X. , . X , X .X,
d e f g h i j k

. ,x*hh<CR><LF>,

- 1— RTCM ;
- 2— ;
- 3— :

4— / ;
 5— / ;
 6— ;
 7— ;
 8— ;
 9— ;
 — ;
 b— HDOP;
 — ;
 d— ;
 — ;
 f— ;
 g— ;
 h— ;
 1— « (UDRE)»;
 j— « »;
 —

1 1 2. , -
 , -
 2 , ()
) (RSIM415).
 3 3 ,
 ,
 aRS1M#15.
 5.17 RSIM#17.

#1 2 3 4 5 6 7 8 9
 A A A A A A A A A A
 SPRCM,17,hmmes.ss,x.x,a.a,a,a, , , , ,a*hh<CR><LF> ,

1 — ;
 2— ;
 3 — RTCM ;
 • — RTCM ;
 - — ;
 4— ; ;
 > — ;
 • — ;
 5— / ;
 -L— / ;
 • — / ;
 6— : ;
 •2— ;
 •L— ;
 • — ;
 7— ; ;
 •Z— ;
 •L— ;
 - — ;

8— :
 • — HDOP. :
 • — HDOP. :
 9— :
 • — ;
 • — ;
 — : ;
 • — ;
 • — ;
 — : ;
 • — ;
 • — ;
 — : (UORE):
 • L— ;
 - — ;

1 , RSIM #17
 2 RSIM817 ,
 5.18 RSIM#18. OGPS

#1 2 3 4 5 6 7 8

SPRCM 8,hrontss . s s , x . x , x . x , x . x , x . x , x . x , x . x , x . x *hh<CR><LF> ,

1— :
 2— :
 3— ;
 4 — ;
 5— ;
 — PDOP;
 7 —HDOP;
 8 — VDOP.

1 , -
 2 RSIMS15. , .DOP ,
 3
 RS1M#19.

5.19 RSIM#19.

1 2 3 4 5 6 7 8 »

SPRCM, 19,x,x,hhnmes . s s , x . x , x . x , x . x , x . x , x . x , x . x +hh<CR><LF> ,

1— (1 -). RTCM 1 4;
 2— ;

3—
4—
5—
6—
7—
8—
9 —

1 , 3 —9
2 — Z- -
3 RTCM RSIM RSIM#1 -
4 RTCM#1/31 #9/34. -
5.20 RSIM#20. RSIM#6.

* 1 23

\$PRCM,20 ,x,x,x,x*x*hh.<CRXLF>,

1— () ;
2— :
-0— :
•1— ;
-2— ;
3— :
- — ;
-1....32.65....96 — ,

1
2
3
4 RSIMS16.
5 RSIMJM1. RTCM « RS1MK12. -
-110). » (-
6 (HDOP) -
« ». RSIM#20 « », -
5.21 RSIM#21.

RTCM#7/35.

* 1 2 3 4 5 6 7 8 9

\$PRCM,21, . . ,1111.11, , . . , . . , . . ,
d

. . . , ,x*hh<CR><LF> ,

1— (1 4);

2— :

3— :

4— (N) (S):

5— :

6— (W) ();

7— :

8— ;

9— :

- 1— ;
- 2— ;
- 3— ;

— :

— ;

— :

• —MSK:

.1_FSK;

d— :

• 0— ;

• 1— ;

— :

• — ;

• 1— ;

1 / —

2 ,

5.22

RSIM#22.

RTCM

RTCM

* 1 2 3 4 5

\$PRCM,22, . . . , . . . , *hh<CR><LF> ,

1— :

• 1—RTCM#1 (RTCM#31):

• 2—RTCM#9 (RTCM#34) 3 :

• 3—RTCM#9 (RTCM#34) ;

2— RTCM :

3— ;

4— () ;

5— RTCM , (2—4).

* 1 2 3 4 5 6 7 8

\$PRCM,24, , , , . , . , , . , . x*h.h<CR><LF>,

1— (/);
 2— ;
 3— (/);
 4— :
 5— :
 6— ;
 7— (();
 8— ();
 9— .

1 — -
 RSIM424 -
 RSIM424
 2
 (, RS1M41) ,
 3 .RSIMM24 1.
 4
 5.25 RSIM#25.

|1...24, 25. ..64

\$PRCM,25, ... , ..,x*hh<CR><LF>,

01 24 ;
 •0— ;
 -1— :
 25—64— :
 -0— ;
 -1— .

5.26 RSIM#26. ASCII-

ASCII {11}. -

* 1 2

SPRCM.26 , hhimss.ee, ~c*hh<CR><LF>,

1— ,
 2— ASCII (<256).

0.

5.27 RSIM#27.

() -

4

SPRCM,27, - , - , - , c-c*hh<CRXLF>,

- 1— ;
- 2— #1;
- 3— #2;
- 4— #3.

5.28 RSIM851.

» 1 2 3 4 5 6 7 8 9 a b c d e f g h i j k

\$PRCH, 51, hhtamss. s a . x . x ^ . x ^ x . x ^ . x . x ^ . x . x . x . x . x , * , * ,

l m n o p q r s t u v w x
^ ^ ^ ^ ^ ^ ^ ^ ^ ^ ^ ^ ^ ^ ^ ^

x, x, x , x, x, x, x, x, x, x, x, x, x, x, x*hh<CR><Lf*>,

- 1— ;
- 2— No 1;
- 3— 2. 4 — 3 32.

- 0— :
- .1— / ;
- 7— / . ;
- 3— / , ;
- 4— / ;
- S— / ;
- — / ;
- 7— / ;
- 8— / ;
- 9— / ;
- 0,1,2 , 6 7

5.29 RSIM#52.

* 12 3

SPRCM,52, . . , MM*hh<CR><Lr>,

- 1— :
- 0— GPS+ + () ;
- 1— GPS;

•2— ;
 •3— .
 2— :
 . —WGS-84;
 .1— -90;
 •2— .
 3— ; () . . .
 • «+»;
 • «-».
 — — 0 1— ,

2—
 5.30 RSIM#53.

* 1 2 3 4 5 6

\$PRCM,53,hnmss.88 . , . , . , . , .x*hh<CR><LF>,

1— ;
 2— GPS ;
 3— ;
 4— GPS—LFTC;
 5— —UTC(SU);
 6— GPS— .
 — 8 .
 5.31 RSIM#54. ()

t1 2 3 4

\$PRCM,54,hhramss.88, . . .x.hhramsa.ss*hh<CR><LF>,

1— ;
 2— ;
 3— ;
 4— — GPS.
 1 , 3 4.
 2 1.34— . 99 ,
 , 98— .
 3 ,
 RSIM41.

5.32 RSIM#55.
 #1 23

5PRCM,55,hnmss. x.x,x.x,*hh<CR><LF>,

1— ;
 2— GPS;
 3— .

RSIM015.

6

6.1

6.1.1

6.1.1.1

(1).
Windows NT 4.0

• BCS Server —

• BCS Client —

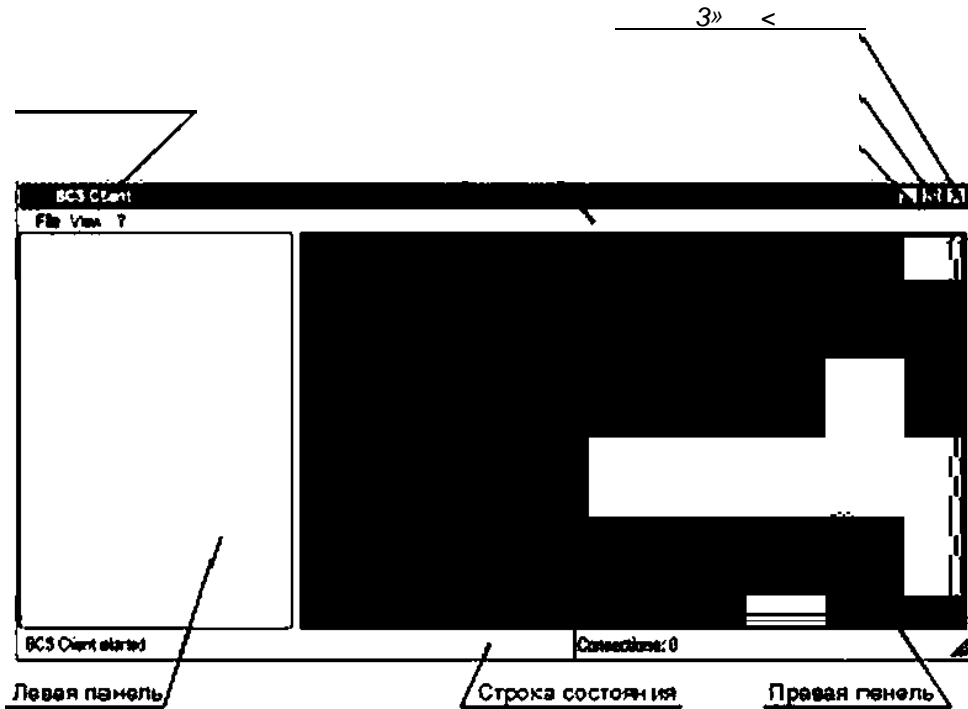
6.1.1.2

BCS Client (1).

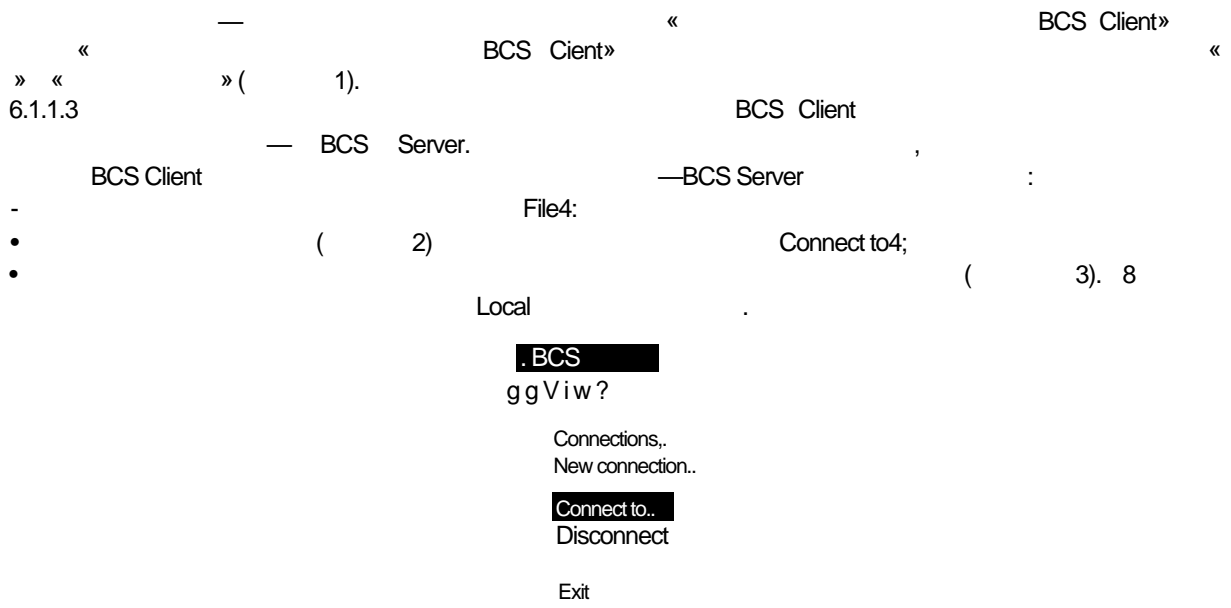
8

BCS Client

Connections: 0.

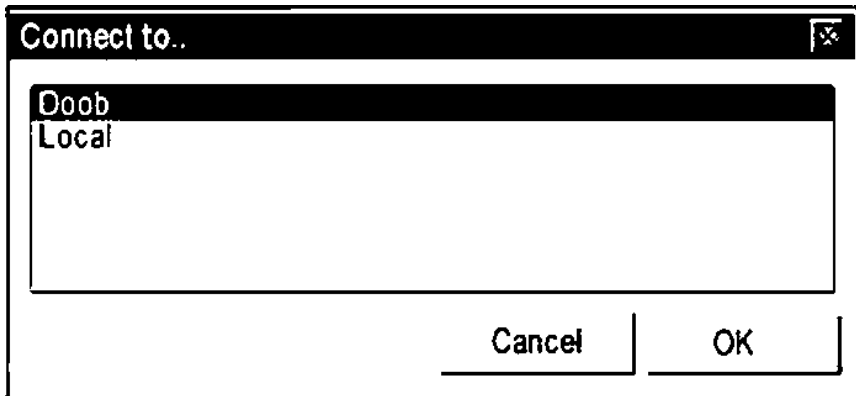


1



2

3



3

6.1.1.4

— BCS Server *

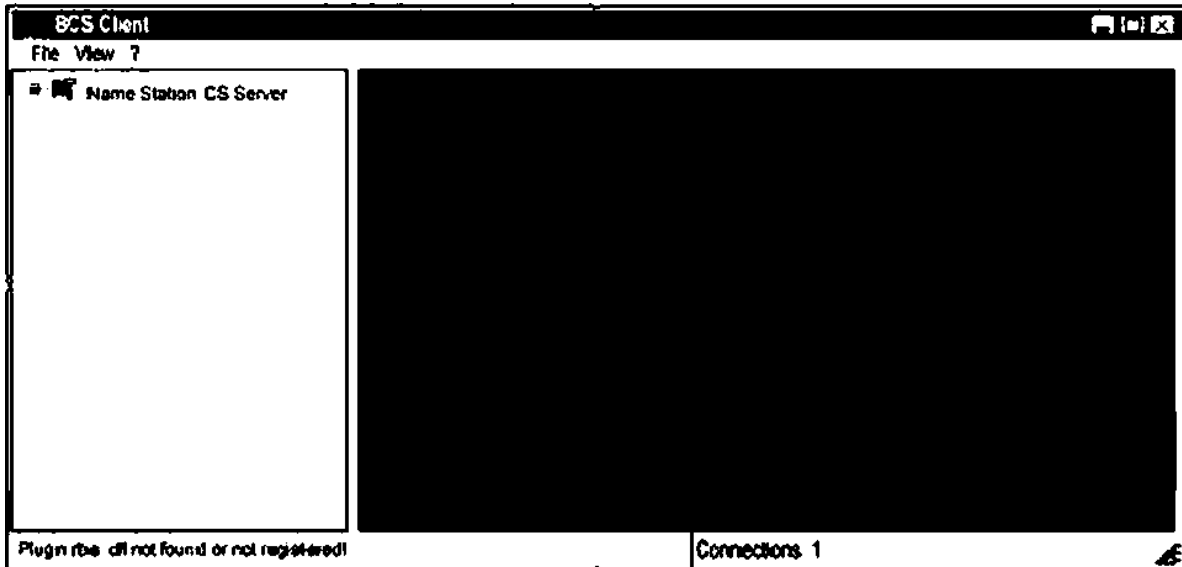
4.

1
2

BCS Client

Connections: 1.

«Doob».



4

6.1.1.S

« »

5.

8

- RSIM —
- Transmitter —
- System —

- BCS Client

File View ?



s-e r s i m

Transmitter

ffl-' QH System

5

RSIM.

6.

RSIM

- Reference Station — .
 - Integrity Monitor — ,
- 6.1.1.6

7.

-• BCS Client

File View ?

-* DoobCS

B **-e** **RSIM**

Reference Stations
IM
Integrity Monitors
Transmitter

\$• System

6

, *

:

• BCS Client

File View ?

tfjf DoobCS

RSIM

: r s

Reference Stations

_____be General RS Settings

: ffl- •<» RS 1

a - <C5> RS 2

: IM

» Integrity Monitors

Transmitter

Gfr- V System

7

RSIM/Ref/ence Station

:

— General RS Settings;

-
-
-

,

RS1:

RS2.

6.1.1.7

1. Settings View. (8).

BCS Client

File View ?

"® DoobCS

© RSIM

Reference Stations

- 0 General RS Settings
- zk Alarms
- Beacon Almanac
- 15 RTCMSchedule
- 3^ Satellite Health
- ^ Receiver Parameters
- /V Modulator
- (J)s RTCM16/36 Broadcast

« RSI

- 0- Settings
- + Position
- CD Report Intervals
- T Reset
- ® Firmware Info

s- ft View

- ste Alarms
- 3^ Satellite Status
- <1^ Satellite Map
- • 15 Correction Data
- . §5 Satellite Health

RS2

Integrity Monitors

m- System

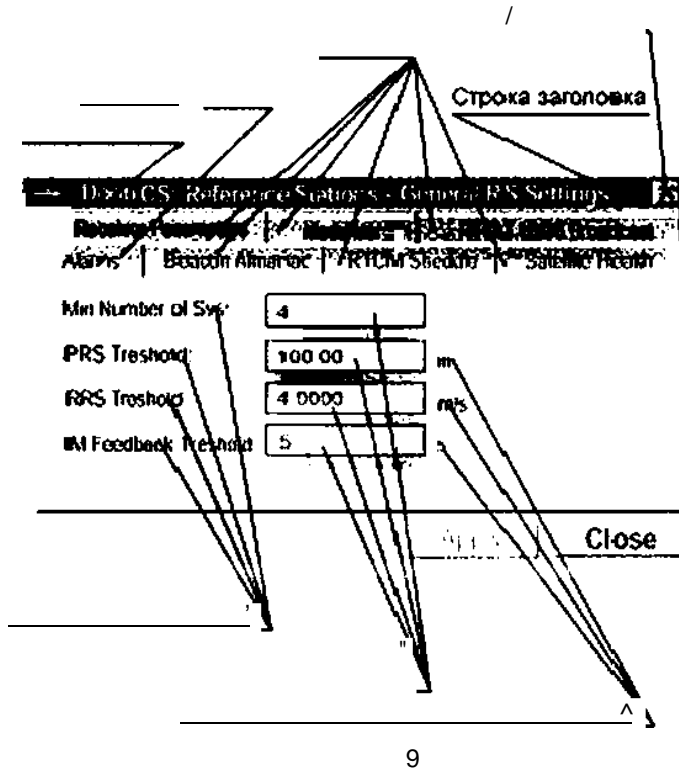
8

6.1.2

(RSIMS11)

6.1.2.1

— Alarms.



Alarms (9).
Alarms

Reference Station — General RS Settings
2.

2 —

	Min Number of Svs	5
	PRC TreshokJ	99.00
	RRC Treshold	3.9000
(RSIMF20)	IM Feedback TreshokJ	6

6.1.2.2

Reference Station — General RS Settings
3.

Alarms -

3 —

	Min Number of Svs	4
	PRC TreshokJ	100.00
-	RRC Treshdd	4.0000
	IM Feedback TreshokJ	5

1
 • :
 • —4:
 • Apply ().
 2
 • :
 • —100.00:
 • 1 ().
 3
 • :
 • RRC Treshold -
 • :
 • —4.000;
 • Apply.
 4
 • :
 Feedback Treshold () :
 • —5;
 • Apply.
 6.1.2.1 Reference Station — General RS Settings Alarms -
 , 2.
 6.1.3
 (RSIM#52.6)
 6.1.3.1 8 Reference Station — General RS Settings Receiver
 Parameters (. 10).

— Doob: Reference Stations - General RS Settings

Alarms 1 BeaconAknanae | RTCMShedJe | Satellite Health |
 Receiver Parameters | MocUator j RTCM 16/3SBio*dcart j

GeneMi-----	
Reference Station ID: j	Space VeNcles JGNSS z1 :
Elevation Mask j	Coordnate System jwGS-84
pFrequency Source-----	
(•Internal < ** External Mhz	
	Dose

6.1.3.2
Parameters

Reference Station — General RS Settings

Receiver
*

4.

4—

	Reference Station	2
	Space Vehicles	GPS
	Coordinate System	-90
	Elevation Mask	9

6.1.3.3

Reference Station-General RS Settings

Receiver Parameters

5.

5—

	Reference Station	43
	Space Vehicles	
	Coordinate System	WGS-84
	Elevation Mask	8

1

•

:

•

•

2

•

:

•

3

-

•

•

4

•

:

•

•

6.1.3.4

8

Parameters

6.1.4

6.1.4.1

(

11).

Apply.

- 4:

:

Space Vehicles

—

Apply.

:

Coordinate System

— WGS-84

Apply.

:

Elevation Mask

— 8;

Apply.

Reference Station — General RS Settings

Receiver

4.

MSK* (RSIM#10)

Reference Station — General RS Settings

Modulator

6.1.4.2

8
MSK

Reference Station — General RS Settings
6 [8].

Modulator

— MSK-

		napeuetpa
	Frequency	300
	Bd Rate(bps)	200
	Operating Mode	Normal
	Broadcast Coding	None

1

•

Frequency

:

-

:

— 300

Apply.

! — Doob: Reference Stations - General RS Settings !

Alarm* | Beacon Almanac | **RTCM** Schedule | Satellite Health | t |

Receiver Parameters Modulator | | RTCM 16/36 Broadcast | |

Frequency | 2835 H KHz | Beacon Identifier | i—

8bit Rate(bps); | 25 z' | Modulation T ype | MSK

Operating Mode | Normal | j | Sync Type. | Sync

Broadcast Coding: | None

Close |

11

2

•

Bit Rate(bps)

:

;

— 200

Apply.

3

•

Operating Mode

:

;

— Normal

Apply.

4

•

Broadcast Coding

:

:

— None

Apply.

6.1.4.3

MSK-

Reference Station — General RS Settings
6.

Modulator

6.1.5

(RSIM#21)

6.1.5.1

Reference Station — General RS Setting's

Beacon

Almanac.

Beacon Almanac (12).

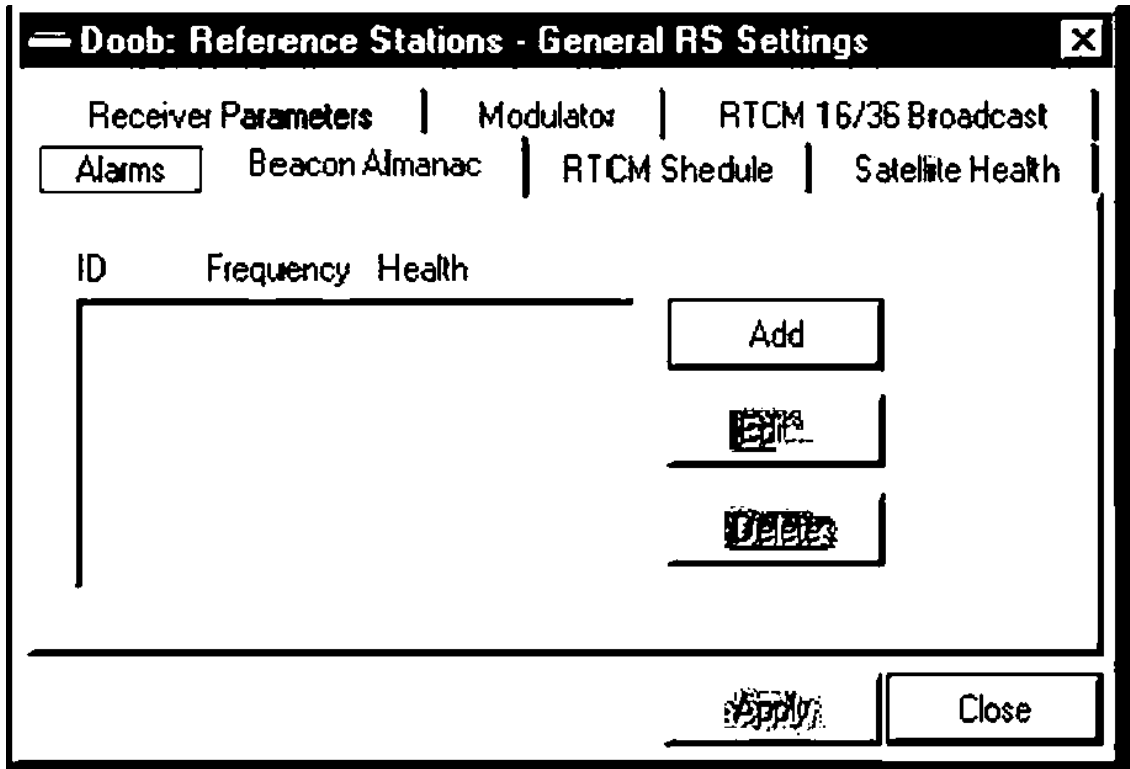


Рисунок 12

Add.

Beacon Properties

(13).

Beacon Properties

RS ID:

Health:

Modulation:

Sync Type:

Coding:

Latitude: . .

Longitude: . .

Frequency:

Bit Rate:

Range:

OK

Cancel

Beacon Properties
Beacon Properties.

6.1.6
(RSIM#22)
6.1.6.1
Schedules (14).

Reference Station — General RS Settings

RTSM

RTCM

<* Doob: Reference Stations * General RS Settings

Receive! Parameters j Modulator I RTCM 16/36 Broadcast
Alarms | Beacon Almanac RTCMSchedule J Satellite Health

RTCM Generation Type: RTCM #1/31

3]

Message Type Interval Offset

Msg Type:

| #30 GPS RS Parameters ^

Interval: Offset:
j
|

Close

14

6.1.6.2 Reference Station — General RS Settings RTCM Schedules
 RTCM#9/34 Group of 3. RTCM Generation Type Message RTCM —
 :
 • RTCM# 3/1800/900:
 • RTCM# 32/1800/960;
 -RTCM# 5/900/300.
 6.1.6.3 I
 RTCM :
 - RTCM Generation
 :
 • — RTCM#9/34 Group of 3 Apply.
 6.1.6.4 Message .
 RTCM Message ,
 RTCM #3 DGPS RS Parameters :
 • Msg
 ;
 • — #3 DGPS RS Parameters;
 • Interval ;
 • —1800;
 • Offset ;
 • — 900;
 • Add.
 6.1.6.5 Message ,
 RTCM #32 DGLN RS Parameters :
 - Msg
 ;

• — #32 DGLN RS Parameters, *

Interval ;

• —1800;

• Offset ;

• — 960;

• Add.

6.1.6.6 Message ,

RTCM #5 GPS Sv's Health ;

• Msg

• :

• #5 GPS Sv's Health;

• Interval :

• — 900;

• Offset :

• — 300:

• Add.

• Apply.

6.1.6.7 Reference Station—General RS Settings RTCM Schedule

Message ,

6.1.13.2.

6.1.6.8 Reference Station—General RS Settings RTCM Schedulee

e Message Type #5 GPS Sv's Health.

6.1.6.9- Message #5 GPS SVs

Heathth :

• Message #5 GPS SVs Health;

• Delete.

6.1.6.10 8 Reference Station — General RS Settings RTCM

Schedulee Message Type #5 GPS

SVs Health.

6.1.6.11 Message #5 GPS SV's Heath.

RTCM #5 GPS SV's Health :

• Msg

• :

• — #5 GPS Sv's Health:

• Interval :

• — 900;

• Offset :

• — 300:

• Add.

• Apply.

6.1.6.12 8 Reference Station — General RS Settings RTCM

Schedulee Message ,

6.1.13.2.

6.1.7 (RSIM#23)

6.1.7.1 Reference Station—General RS Settings RTCM 16/36

Broadcast (15).

1 .

• Message

• :

• aDOOB-dGLONASS TEST MODE» -

Send.

6.1.7.2 Reference Station — General RS Settings RTCM 16/36

Broadcast Message

«DOOB-dGLONASS TEST MODE».

Doob: Reference Stations - General RS Settings

Alarms | Beacon Almanac | RTCM **Shedute** | **Satellite Health** |
Receiver Parameters | Modulator RTCM 16/36 Broadcast

Message: Send

Type 16 (GPS)

C Type 36 (GLONASS)

Close

15

6.1.8
6.1.8.1
6.1.8.2

OC(RSIM#6)
RS1 Settings.
RS 1 Settings, Position (16).
POS2.

" Doob: RS 1 Settings		EI
Position Report Intervals Reset Firmware Info 1		
Latitude: *		• T J
Longitude: *		• ru
Altitude. m		
		Close

16

6.1.8.8

RS 1 Settings

Position

-

RS 1 Settings

Position

- 6.1.8.4 RS1 Settings Position -
-
-
-
- 1
- Latitude ;
- Apply.
- 2
- Longitude ;
- Apply.
- 3
- Attitude ;
- Appty.
- 6.1.8.5 RS1 Settings Position -
- 6.1.8.6 RS 1 Settings Position -
- 6.1.8.7 RS 1 Settings Position -
- 6.1.8.3.
- 6.1.9 (RSIM41)
- 6.1.9.1 BoKHeRSI Settings Report Interval (17).
- 6.1.9.2 RS1 Settings Report Interval
- (7).

Doob: RS 1 Settings



[Position](#) | [Report Intervals](#) | [Reset](#) | [Firmware Wo](#) |

Report Interval: _____ | *

Sync Start Time: _____ | s

Items Avadabte: P Enabled

- Alains H
- ^ dteitc
- Correction Data
- SateiteHeafh (GPS) zi

Close

	Alarms (RSIM412)		
	Satellite Status (RSIM#7)	10	
	Correction Data{RSIM#13}	2	
GPS	Satelfcte Health GPS (RSIM09)	60	
	Satellite Health GL (RSIM451)	60	


```

1      - - - - -
:
-      Items Available      Alarms;
.
.      :                      Sync Start Time
.
.      :                      -0;
.      ;                      Report Interval -
.
-      Enabled              Apply.  - ;
2
:
.      Items Available      Satellite Status;
.
.      :                      Sync Start Time
.      ;                      -0;
.      ;                      Report Interval -
.      ;
.      Enabled              Apply.  -10;
3
:
.      Items Available      Correction Data;
.
.      :                      Sync Start Time
.      ;                      -0;
-      ;                      Report Interval -
.      ;
.      Enabled              Apply.  -2;
4
:
.      ;
.      Items Available      Satellite Health (GPS);
-      ;                      Sync Start
.      ;                      -0;
.      ;                      Report Interval -
.      ;
.      Enabled              Apply.  -60;
5
:
.      ;
.      Items Available      Satellite Health (GLONASS);
-      ;                      Sync Start
.      ;                      -0;
.      ;                      Report Interval -
.      ;
.      Enabled              Apply.  -60;
6.1.9.S      Items Available      RS 1 Settings
Report Interval      Alarms, Satellite Status. Correction Data.
Satellite Health (GPS). Satellite Health (GLONASS),
( 7).

```

6.1.10 (RSIM#27)
 6.1.10.1 8 RS1 Settings Firmware Info (18).

Smela: RS 1 Settings	
Position Report Intervals	Reset Firmware No
Serial It	
Firmwae 81	K35O102
Firmwae 82	113501.20
F»mware83	[ms Tmo d Ti
Generic Me«\$age	1
	4 1 Dose

18

6.1.10.2 RS1 Settings Firmware Info

- -
 -
- Firmware #1;
 Firmware #2;
 Firmware #3.

6.1.10.3 19.

BCS Client

File View ?

0 Smela

S'

RSIM



Reference Stations

-- & Integrity Monitors

General IM Settings

ffi «=> IM 1

4« IM 2

« Transmitter

4 | System

19

RSIM V Integrity Monitor :

— General IM Settings:

- -
 -
- IM 1:
 IM 2.

View. 6.1.10.4 (20). 1. 1. Settings

BCS Client

File View ?

- DoobCS

- **RSIM**

Reference Stations

. IM

Integrity Monitors

B- General IM Settings

Alarms

<3^ Satellite Health

^ Receiver Parameters

/V Demodulator

<so IM1

B - Settings

•+ Position

111 Report Intervals

I Reset

- Firmware Info

Eh View

Alarms

Satellite Status

Satellite Mar

•••• + General Results

• E| Detailed Results

- E| Satellite Health

— - Satelite Plot

Demodulator State

-E| RTCM Messages

B - O I M 2

-. Transmitter

fa System

6.1.11

(RSIMS16)

6.1.11.1

Integrity Monitors — General IM Settings.

6.1.11.2 8

Integrity Monitors — General IM Settings

Alarms

(21 >.

— Smela: Integrity Monitors - General IM Settings

Alarms | Satellite Health | Receive) Parameters | Demodiatot] »

	TieshokJ	Interval		Treshdd interval I
Correction Age:	○	-----	Horizontal D0P	40 30.0
Msg Error Ratio:	0 05	1300	Position Error	30 } 20.0
Signal/Noise:	20.0		PR Residual	50 20.0
Signal Strength:	300	300	RR Residual	1.0 20.0
Number of SV't:	H	[lowUORE	jo 00 foo

Close |

21

6.1.11.3

Integrity Monitors —General IM Settings

Alarms -

9.

	()		ope
	Correction Age	18.0	
	Msg Error Ratio	0.06	25.0
/ MSK-	Signal/No-ise	23.0	25.0
MSK-	Signal Strength	42.0	25.0
	Number of Sv's	5	25.0
	Horizontal DOP	3.0	25.0
	Position Error	5.5	06.0
-	PR Residual	2.8	25.0
-	RR Residual	0.99	25.0
	Low UDRE	00.00	0.0

9—

	Correction Age	20.0	
	Msg Error Ratio	0.05	30.0
/ MSK-	Signal/Noise	22.0	30.0
MSK-	Signal Strength	40.0	30.0
	Number of Sv's	4	30.0
	Horizontal DOP	4.0	30.0
	Position Error	5.0	05.0
-	PR Residual	3.0	30.0
-	RR Residual	t.O	30.0
	Low UDRE	00.00	00.0

1
 •
 Age ; Threshold : Correction
 • — 20.0;
 • Apply.
 2
 • : Threshold : Msg
 Error Ratio ;
 • —0.05:
 • Interval
 • Msg Error Ratio :
 • — 30.0;
 • Apply.
 3
 • / MSK- -
 • : / MSK- *
 • Threshold / MSK- Signal/Noise ;
 • —22.0:
 • Interval
 • Signal/ Noise :
 • — 30.0:
 • Apply.
 4
 • MSK
 • : Threshold : Signal
 Strength ;
 • — 40.0;
 • Interval
 • Signal Strength ;
 • — 30.0:
 • Apply.

5	:			
•		-	Threshold	Number
of Sv's	:			
•	— 4:			Interval
•				
•	Number of Sv's	:		
•		— 30.0;		
•	Apply.			
6	:			-
•			Threshold	Horizontal
DOP	:			
•	— 4.0:			Interval
•				
•	Horizontal DOP	:		
•		— 30.0;		
•	Apply.			
7	:			
•			Threshold	Position
Error	:			
•	— 5.0;			Interval
•				
•	Position Error	;		
•		— 05.0;		
•	Apply.			
8	:			-
•			Threshold	PR
Residual	:			
•	— 3.0;			Interval
•				
•	PR Residual	;		
•		— 30.0;		
-	Apply.			
9	:			-
•			Threshold	RR
Residual	:			
•	— 1.0;			Interval
•				
•	RR Residual	:		
•		— 30.0;		
•	Apply.			
10	:			-
•			reshold	Low
UDRE	;			
•	— 0.00:			Interval
•				
•	Low UDRE	;		
•		— 0.0:		
•	Apply.			

6.1.11.5

Integrity Monitors — General IM Settings

Alarms -

-
-
-
-
-
-
-
-
-
-

/ MSK-
MSK-n

6.1.12

6.1.12.1

Parameters (

8
22).

integrity Monitors — General IM Settings

Receiver

Doob: Integrity Monitors - General IM Settings

Alarms([StateMe Heafch] Receiver Parameters | Demodiator|

rtana*

Reference Station ID:

Space Vehicles: GNSS

Elevation Mask:

Coordinate System: WGS-84 -

MaxRTCM Age

f* Internal	External	Mhz

mm

Close

22

6.1.12.2

Parameters

integrity Monitors — General IM Settings

Receiver

10.

10—

-	Reference Station	2
	Space Vehicles	GPS
	Coordinate System	-90
	Elevation Mask	9

6.1.12.3
Parameters

Integrity Monitors — General IM Settings

Receiver

11.

11—

	Reference Station ID	1
	Elevation Mask	6
	Max RTCM Age	30
	Space Vehicles	GNSS
	Coordinate System	WGS-84

1
•
;
•
•
2
•
Apply. — 1;
;
•
Space Vehicles
;
•
— GNSS Apply.
3
•
Coordinate System
;
-
•
— WGS-84 Apply.
4
•
Elevation Mask
•
Apply. — 6;
5
•
Max RTCM
•
Apply. — 30;

6.1.12.4
Parameters

Integrity Monitors — General IM Settings

Receiver

11.

6.1.13

MSK- (RSIMS14)

6.1.13.1

Integrity Monitors—General IM Settings

Demodulator

(23).

=> Dooti: integrity Monitors • General IM Settings

Aloms J Settle HeeHhj Receive Peremeieii Oemodulatoi |

Frequency	(2835 KHz	Modulation Type	MSK
BtRatefbps)	[3	Sync Type	Sync
Broadcast Codhg	Ncne		
			Close

6.1.13.2

Integrity Monitors — General IM Settings
12.

Demodulator

12 — MSK —

	Frequency	300
	Bit Rate(bps)	200
	Broadcast Coding	None

- 1 • : Frequency
- ; 300 Apply.
- 2 • : Bit Rate
- ; 200 Apply.
- 3 • : Broadcast Coding
- ; None Apply.

6.1.13.3

Integrity Monitors — General IM Settings
MSK- 12.

Demodulator

6.1.14

6.1.14.1

IM 1 Settings.

6.1.14.2

IM 1 Settings Position (24).

. | . - ! ^

Position | Report Intervals | Reset | Firmware Into j

Latitude: • |-----• ru

Longitude * |-----•

AWude m

Close

24

6.1.14.3

IM 1 Settings

Position

POS2

6.1.14.4 IM 1 Settings Position -
 , , ;
 :
 - , :
 • , ;
 • — . ;
 1 , ;
 • Latitude ;
 • Apply.
 2 , :
 • Longitude ;
 • Apply.
 3 , :
 • Altitude ;
 • Apply.
 6.1.14.5 IM 1 Settings Position 082
 6.1.14.6 IM 1 Settings Position ,
 6.1.14.3.
 6.1.14.4.
 6.1.14.7 IM 1 Settings Position POS25riBCHK
 6.1.14.3.
 6.1.15 (RSIM#1)
 6.1.15.1 IM 1 Settings Report Intervals (25).

• Doob IM 1 Sellings		E3
Position Report Intervals	Reset] Fmware Info 1	
Report Interval:	10 ·\$	
Sync Start Time.	T----- j	
Items Available:	P Enabled	
Alarms		
SateHke Status	j	
Detailed Results		
Position Info	z	
	ism	Close

6.1.15.2 IM 1 Settings Report Intervals -
 13.

		(C>	()
	Alarms (RS1M#16)		0
	Satellite Status (RSIM#7)	10	0
-	Detailed Results (RSIM#19)	2	0
-	Position Info <RSIM#18)	2	0
	Demodulator State (RSIM#15)	10	0
GPS	Satellite Health GPS(RSIM#9)	60	0
	Satellite Health GI(RSIM#51)	60	0

```

1
:
-   Items Available           Alarms:           Sync Start Time
.
.   ;
.           -0:           Report Interval
.   ;
.           -10;
.   Enabled           Apply.
2
:
.   Items Available           Satellite Status:   Sync Start Time
.   ;
.           -0;           Report Interval
-   ;
.           paeitoe 10;
.   Enabled           Ap-ply.
3
:
.   Items Available           Detailed Results:   Sync Start Time
.   ;
.           -0:           Report Interval
.   ;
.           -2;
.   Enabled           Apply.
4
:
.   Items Available           Position Info:     Sync Start Time
.   ;
.           -0:           Report Interval
.   ;
.           -2;
.   Enabled           Apply.

```

```

5
  :
  • Items Available Demodulator State;
  •
Sync Start Time :
  • —0;
  •
  Report Interval ;
  • —10;
  • Enabled Apply.
6 GPS
  :
  • items Available Satellite Health (GPS);
  • Sync Start Time
  • ;
  • —0;
  • Report Interval
  • ;
  • —60:
  • Enabled Apply.
7
  :
  • Items Available Satellite Health (GLONASS):
  • Sync Start Time
  • :
  • — ;
  • Report Interval
  • ;
  • —60;
  • Enabled Ap-piy.
6.1.15.3
  Report Intervals Items Available Settings
  Alarms. Satellite Status. Detailed
Results. Position Info. Demodulator State. Satetlite Health (GPS). Satellite Health (GLONASS).
13.
6.1.15.4
8 MODE1. S: GNSS.
  Elev: 08.
  : WGS-84.
  POS 2.
8
  RS Index: 43.
  ALRM 2:
  • ;
  • 100 ;
  • 4.0 / ;
  •
  5 .
6.1.15.5
  MODE 1. S: GNSS.
  • 8
  Elev: 08.
  WGS-84.
  ALRM 2.

```

6.1.15.6 ALRM2
14.

14—

		3	
		020	
	MER	05.0	: 030
MSK-	SNR	022	: 030
MSK-	SS	040	: 030
	SATs	04	: 030
	HDOP	4.0	: 030
	POS	05.00	: 0.05
-	rPRC	03.00	: 030
-	rRRC	01.00	: 030
	UDRE	00.00	:

6.1.16 nMOCHK(RSIM#27)
 6.1.16.1 8 IM 1 Settings Firmwave Info (26).
 6.1.16.2 IM 1 Settings Firmwave Info
 :
 • — Firmware #1;
 • — Firmware #2;
 • — Firmware #3.

— Doob: IM 1 Sellings

Position | Report Intervals | Reset Firmware Wo |

Serial |

Firmware 1 |

Firmware 2: |

Firmware : |

Generic Message: |

App
Close

- 6.1.16.3 RS 1View Settings.
- (28).
- 6.1.17 (RSIM#12)
- 6.1.17.1 okhoRS 1 Alarms — (27).

I g Smela: RS 1 Alarms B@E3	
Numbei of SVs:	Sufficient
PRC:	Normal
RRC:	Normal
IM Feedback:	Monitored

27

- 6.1.17.2 RS 1 Alarms 27.
- 6.1.17.3 RS 1 Alarms RS 1 Alarms.
- 6.1.18 - (RSIM# 7)
- 6.1.18.1 RS 1 Satellite Status (28).

DCS Client • RCMS

File «» ?

meta

§ RSIM

^ Reference Stator»

S3 GeneialRSSettings

£ < » RS 1

- -< ** Sellings

- A- Position

- fc Report Intervals

- Reset

- \$1 Frmwaelfo

- L: M View

- rk' Alarms

- <€ SeiektaSWus

- € SatefctasMap

- Q Correction Dele

- 0 Satahte Health

3 « RS 2

- H «=8 Sellings

*** Sreeta RS 1 Sateflite Status**

System SV Aamyth Elevator. SNR URA/En SVHadth

	System	SV	Aamyth	Elevator.	SNR	URA/En	SVHadth	
CPS	1	3540	10	N/A	N/A			
GPS	5	136.0	40.0	150	4.0		Healthy	
GPS	6	279.0	730	150	4.0		Healthy	
GPS	10	103.0	23.0	150	2.9		Healthy	
GPS	17	139.0	200	150	28		Healthy	
GPS	24	490	33.0	150	2.0		Healthy	
GPS	25	2920	330	150	4.0		Healthy	
GPS	30	151.0	72.0	150	2.8		Healthy	
GIN	1	460	33.0	150	0		Healthy	
GIN	17	390	640	150	0		Healthy	
GIN	24	810	19.0	N/A	0		Healthy	

Plugin 3_0 dll not lotnd or not registered

| Connector»!

28

- 6.1.18.2 RS 1 Satellite Status (28).

- System — GPS ;
- SV — , 1 32;

- Azimuth — , , 0° 359.9°:
- Elevation — , , 0° 90°:
- SNR — / - . 0 15;
- URA — , ,

GPS. ORAot 0 32. > 6 *

- — , ,

> 1 :

- SV Health — : Health — . Unhealty —

6.1.19

6.1.19.1 RS 1 Satellite

8CS Client

2

^ Siette Health ^

« Receive* Peiemeteis

/ Mod4atos

RTCM 168oadcest

RSI

S Settings

- Position
- p. Report Internets
- f Reset
- Ffimyieie Into

Q View Setting:

- M View

; - A Jaimt

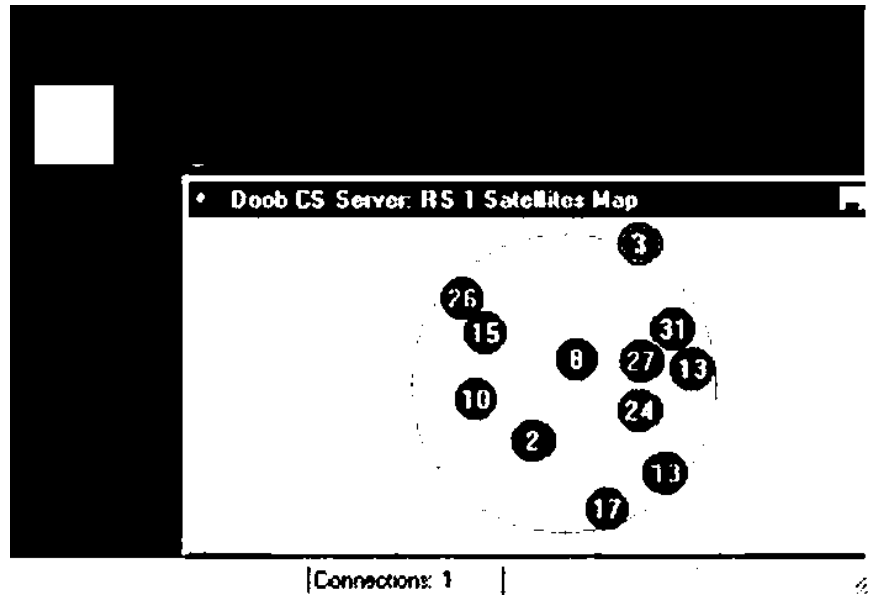
: ^ SatHtile Status

j ^

-) Correction Data

Lg) SatetteHetfh _

___ Tierxmtei ^



iPMrhn (bed! not teond or not regured)

29

6.1.19.2 RS 1 Satellite Map

(29).

GPS. —

6.1.20 OC(RSIM#13)

6.1.20.1 RS 1 Corrections Data (30).

6.1.20.2 RS1 Corrections Data

(30),

- System — GPS :
- SV — , 1 32:
- PRC — ;
- RRC — ;
- PRA — . N/A — ;

Efc 2

\$ » Hearth
 ^ fleceivet P«emete»
 / MoArtaic*
 - R TCM 16
 i-} > RSI
 Q «3 Settop
 ! -i- Petition
 * !!• Report Internals
 React
 FttmwereInlo
 J9. Vwv« Settop
 1 M Vw«
 a Alatmt

3

1 Onuti r.S Scivali R\$ 1 Coeioction D<eto							
Swtem	SV	PRC	RRC	UDRE	Z-count	:0	
GPS	26	26 48	-0023	N/A	1 0	2533 4	153
GPS	31	•24.85	0020	N/A	1.0	25394	82
GPS	8	9 31	0006	N/A	10	2539 4	199
GIN	13	•21 49	•Q012	H/A	3.0	2526 4	51
GPS	19	26 27	•0022	N/A	10	25394	87
GLN	15	2015	•0010	N/A	30	2526 4	51
GPS	13	•27 93	•0019	N/A	10	25404	11
GLN	17	•3011	•Q027	N/A	30	2527 4	51
GPS	27	•1250	•0010	N/A	10	2540 4	209
GPS	10	•1820	0020	N/A	1 0	2540 4	74
GPS	2	1599	0001	N/A	10	25404	169
(UN	24	•1125	0040	N/A	30	25274	51

•€ SateWtc? I-
 EI & 5 8
 2) S ««Me Hearth

^ . Tienmtiei

Plugin ibadl not found oi not registocd

iComcbons 1

30

- UORE — ;
- Z — count — « » ;
- 100 — GPS. ;
- — , .

6.120.3 RS1 Correction Data
 RS 1 Correction Data.

6.1.21 OC(RSIM#9)

6.1.21.1 RS1 Satellite Health.

Smela ; RS 1 Satellite Health			
System 1	SV	I Health	Broadcast State
GPS	1	N/A	Not Tfacked
GPS	2	N/A	Not Tfacked
GPS	3	N/A	Not Tracked
GPS	4	N/A	Not Tracked
GPS	5	Healthy	Ttacked
GPS	6	Healthy	Tracked
GPS	7	N/A	Not Tracked
GPS	8	N/A	Not Tracked
GPS	9	N/A	Not Tracked
GPS	10	Healthy	Tracked
GPS	11	N/A	Not Tracked

z

6.1.21.2 RS1 Satellite Health
(31).

- System — GPS ;
- SV — , 1 32;
- Health — :
 - — N/A;
 - — Healthy.
 - — Unhealthy;
 - — Force Healthy;
 - — Force Unhealthy;
 - Broadcast State — :
 - — Tracked;
 - — Not Tracked.

6.1.21.3 .20.

6.1.22 (RSIM#17)

6.1.22.1 IM 1 Alarms

6.1.22.2 IM1 Alarms
(32).

i Smela: IM 1 Alarms

Correction Age:	Acceptable
Msg Error Ratio:	Acceptable
Signal Strength:	Acceptable
Signal/Noise:	Acceptable
Number of SVs:	Acceptable
Horizontal DOP:	Acceptable
Position Error:	Acceptable
PR Residual:	Acceptable
RR Residual:	Acceptable
Low UDRE:	Acceptable

32

6.1.22.3 IM 1 Alarms
IM1 Alarms.

6.1.23
(RSIM#7)

6.1.23.1 IM 1 Satellite Status.

6.1.23.2 IM1 Satellite Status
(33).

- System — GPS ;
 - SV — , 1 32;
 - Azimuth — , 0 359.9 ;
 - Elevation — , 0° 90 ;
 - SNR — / . 0 15;
 - URA — , GPS.
- 0 32. >6 ;

- —
- > 1
- SV Health —
- Healthy — . Unhealthy —

* Smela: IM 1 Satellite Status						Jnlxl
System	SV	Azimyth	Elevation	SNR	URA/En	SV Health
GPS	6	90.0	60.0	15.0	4.0	Healthy
GPS	10	52.0	30.0	15.0	2.8	Healthy
GPS	17	211.0	69.0	15.0	2.0	Healthy
GPS	22	303.0	38.0	15.0	4.0	Healthy
GPS	23	16S.0	16.0	15.0	4.0	Healthy
GPS	25	245.0	16.0	15.0	2.0	Healthy
GPS	28	319.0	6.0	N/A	N/A	Healthy
GPS	30	158.0	22.0	15.0	2.8	Healthy
GLN	10	282.0	20.0	15.0	0	Healthy
GLN	11	334.0	17.0	N/A	0	Healthy

33

- 6.1.23.3 RS1 Satellite Status IM 1 Satellite Status.
RS1 Satellite Status
IM 1 Satellite Status.
- 6.1.23.4 RS1 Satellite Status
RS 1 Satellite Status, IM 1 Satellite Status
IM1 Satellite Status.
- 6.1.24

Snw*- IM 1 SetHM* Health				PVBE3
Svatem :	*v	I Heafch	I Broadcast Stale I	A
GPS	1	N/A	No! Tracked	
GPS	2	N/A	Not backed	
GPS		N/A	Not Tracked	
GPS	4	Hee»v	Tracked	
GPS	5	Keafety	Tracked	
GPS	6	N/A	Not Tracked	
GPS	7	Heafchp	Tracked	
GPS	8	N/A	Not Tracked	"
GPS	9	Heafchy	Tracked	
GPS	10	N/A	Not Tracked	
GPS		N/A	Not Tracked	
GPS	12	N/A	Not Tracked	
GPS	13	N/A	Not Tracked	
GPS	14	Healthy	Tracked	
GPS	15	N/A	Not Tracked	
GPS	1C	N/A	Not Tracked	
GPS	17	N/A	Not Tracked	
GPS	18	N/A	Not Tracked	
GPS	13	N/A	Not Tracked	
GPS		N/A	Not Tracked	
GPS	21	N/A	Not Tracked	
GPS	22	N/A	Not Tracked	-

34

6.1.24.1 IM1 Satellite Health (RSIM#9).

6.124.2 6 IM1 Satellite Health

(34),
 - System — GPS ;
 . SV — 1 32;
 • Health — ;
 • — N/A;
 • —Healthy.
 • — Unhealthy;
 - — Force Healthy;
 • — Force Unhealthy;
 • Broadcast State — :
 • — Tracked;
 • — Not Tracked.

6.1.24.3 RS 1 Satellite Health

IM1 Satel tile Health.

RS1 Satellite Health

IM 1 Satellite Health.

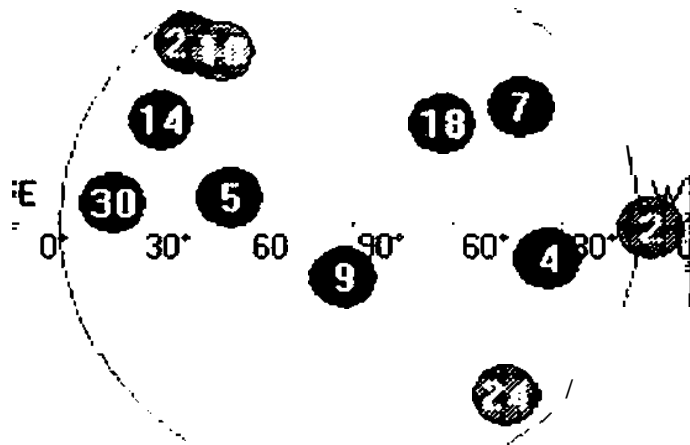
6.1.24.4 RS1 Satellite Health

RS 1 Satellite Health.

6.1.25

6.1.25.1 IM1 Satellite

• Smela: IM 1 Satellites ... "f



35

6.1.25.2 IM 1 Satellite

(35).
 GPS. —

6.1.25.3
IM1 Satellite
Satellite

RS1 Satellite

RS1
IM 1 Satellite

6.1.26
(RSIMJM9)

Smela: IM 1 Detailed Results

System	SV	PR Res	RR Res	Quel Ind	Vai Est	Age
GPS	22	•3 30	•0 020	•004	N/A	50
GPS	10	•067	•0.010	0.00	N/A	4.0
GPS	S	•2.94	0.010	•0.03	N/A	4.0
GPS	17	•3.91	0.010	0.03	N/A	40
GPS	30	•-0.93	-0.020	0.06	N/A	5.0

36

6.1.26.1 IM 1 Detailed Results.
6.1.26.2 IM 1 Detailed Results
(36).

- System —
- SV —
- PR Res»
- RR Res —
- Qual Ind —
- Var Est —
- —

6.1.26.3 IM 1 Detailed Results
IM1 Detailed Results.

6.1.27 (RSIM#15)

6.1.27.1 o k h o IM1 Demodulator State (37).

Smela: IM 1 Demod... BBS	
Signal Strength:	52.0
Signal/Noise:	22.0
Msg Error Ratio:	0.00
Correction Age:	7.0

37

6.1.27.2 IM1 Demodulator State

15.

15—

	Signal Str-engh	He	30.0
	Signal/Noise	He	22.0
	Msg Error Ratio	He	5.00
	Correction Age	He	30

6.1.28
 (RSIM#18)
 6.1.28.1

IM 1 General Results.

1

Doob: IM 1... H®E3	
Latitude Error:	0.04
Longitude Error:	0.23
Altitude Error:	-0.48
ttSV in Solution:	10
HDOP:	2.40
PDOP:	1.10
VDOP:	2.10

38

6.1.28.2 IM 1 General Results
 (38).

6.1.28.3 IM 1 General Results
 IM1 General Results.

Detailed Results <RSIM#19)

39.

ACOSee 32 »24 (UmvjgMte'd)

* E* Eoon «

• .1 *!*

/BCS . Rf.MS

File View 2

System	SV	PR	HR	PR	Qual	Var	Age
GPS	8	0.67	0.002	0.02	0.38	0.8	0.8
GPS	10	0.48	0.004	0.01	0.38	0.8	0.8
GPS	17	0.27	0.005	0.02	0.38	0.8	0.8
GPS	22	0.28	0.004	0.00	0.38	0.8	0.8
GPS	25	-1.03	0.005	0.00	0.38	0.8	0.8
GPS	30	-0.69	0.005	-0.01	0.38	0.8	0.8

Updated 10:57:22.26 03.01

Latitude Error	0.41
Longitude Error	-0.26
Altitude Error	-1.97
#SV in Solution	6
HDOP	2.39
PDOP	1.26
VDOP	2.02

Updated 10:57:22.26 03.01

0/2 1.1 bmp 468.9 KB 800x600x295 bmp 100% Loaded in 0.1 s

39

6.1.29

()

6.1.29.1

IM 1 Scatter Plot.

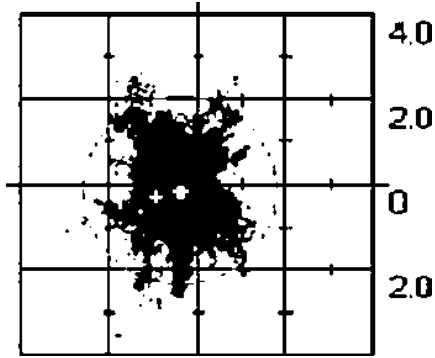
6.1.29.2

IM 1 Scatter Plot

(*)

40).

Smelo: IM 1 Scatter Plot



Position Count 79366
 1 Sigma 0.748 2Sigma 1.49 3Sigma 2.244

40

6.1.29.3

IM 1 Scatter Plot

Position Count.

1000

15.

15—

1 Sigma	He 0.9
2 Sigma	He 1,&
3 Sigma	He 2.7

6.1.30

(RSIM#23)

6.1.30.1

IM1 RTCM Messages.

Hi Smela: IM 1 RTCM F1IB HI

RS ID	T	StabonHeaKK	RTCM tt Count	Tme Interval
3	0	N/A	N/A	N/A
5	0	N/A	N/A	N/A
7	0	N/A	N/A	N/A
35	0	N/A	N/A	N/A
37	0	N/A	N/A	N/A
RTCM 16 Broadcast Me* sage Smeia				
RTCM 36 Broadcast Message.				

41

- 6.1.30.2 IM 1 RTCM Messages (41). RTCM16 Broadcast Message -
- 6.1.30.3 IM 1 RTCM Messages IM 1 RTCM Messages.
- 6.1.31 OC(RSIM#8)
- 6.1.31.1 Reference Station — General RS Settings.
- 6.1.31.2 Reference Station — General RS Settings * Satellite
- Health (42). Reference Station — General RS Settings Satellite
- 6.1.31.3 Reference Station — General RS Settings Satellite
- Health .
- — GPS;
- — GPS.
- ;
- — Force Unhealthy —

I a Ooob: Reference Stations - General RS Settings		E3
Receiver Parameters Modulator RTCM 16/36 Broadcast		
Alarms BeaconAlmanac RTCMSchedule Satelite Health II		
Satellite System	sp5 3	
Satellite Number	F----- 3	
Hedth	U\$e6r HeaMj	
T me of S ateSte Lost:		
		Close

42

- 1 GPS ;
- Satellite System
- ;
- GPS Apply.
- 2 :
- IM 1 Satellite (42);
- ,
- (! 1 Satellite -
-);
- Reference Station — General RS Settings Satellite Health;
- Reference Station — General RS Settings Satellite Health
- Satellite Number
- :
-
- IM 1 Satellite Apply.

3
 • Reference Station — General RS Settings Satellite Health *

;

• — Force Unhealthy Apply.

6.1.31.4 IM 1 Satellite
 . okho IM 1 Satellite Health :

• SV :

• Health Force Unhealthy

():
 • Broadcast State Not Tracked ().

6.1.31. S Reference Station — General RS Settings -
 Satellite Health. Reference Station — General RS Settings Satellite
 Health Force Healthy ().

6.1.31.6 Reference Station — General RS Settings Satellite Health -
 Health

• ;

• — Force Healthy Apply.

6.1.31.7 IM 1 Satellite -
 . IM1 Satellite Health :

- SV ;

• Health Force Healthy

();
 - Broadcast State racked ().

6.1.31.6 Reference Station — General RS Settings -
 Satellite Health. — Use Broadcast Health (no
).

6.1.31.9 « »

• Reference Station — General RS Settings Satellite Health -
 Health

Hyib ,

• — Use Broadcast Health Apply.

6.1.31.10 IM 1 Satellite Health :

• SV ;

. Health Healthy (*

• Broadcast State Tracked ().

6.1.31.11 Reference Station — General RS Settings. -
 «Close» Reference Station — General RS Settings.

6.1.32 MSK- MSK- .
 MSK- :

• 2 .468543.127 1-112 -
 ;

• 0.S ± 0.1 — .

6.1.33 (RSIM#3)

6.1.33.1 RS 1 Settings.

6.1.33.2

RS 1 Settings

Reset (43).

***Doob: RS 1 Settings**

Position | Report Intervals Reset | Frmvare Info |

<* Computational

Partial

Full

” Hatd

RS Hatwee Status:

|

n

Close

43

6.1.33.3

- SAT 1. , SAT 1 -
- RS 1 Settings Reset
- Hard Apply:
- SAT 1. , SAT 1 -

6.1.33.4

- SAT 1. , SAT1 -
- MODE2. MODE2
- Restart GNSS: HARO:
- SAT 1. , SAT 1 -

6.1.33.5

- « »
- SAT 1. , SAT 1 -
- MODE2. MODE2
- Restart GNSS: WARM;
- SAT 1. , SAT 1 -

6.1.33.6

- SAT1. , SAT1 -
- MODE2. MODE2
- Restart KVU: ON:

•
 • SAT 1. , SAT 1 -
 6.1.33.7 « » -
 ; « »
 • SAT 1. , SAT 1 -
 • MODE2.8 ; MODE2
 Restart GNSS: COLD;
 •
 • SAT 1. ; pa SAT 1
 7

OKHoTransmitter

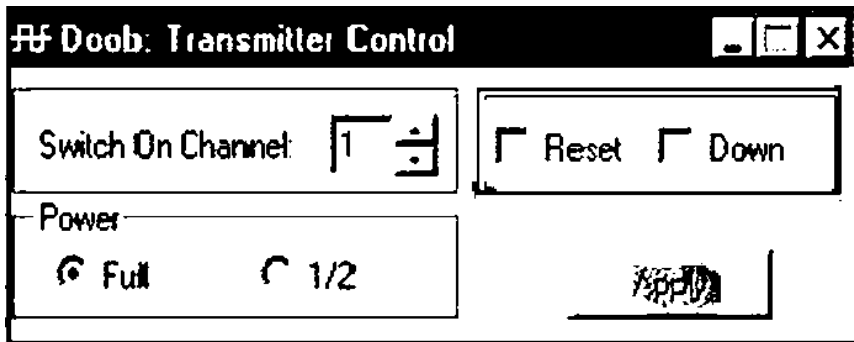
(). Transmitter :
 • — Transmitter Control;
 • — Transmitter Status;
 • — Analog Devices.

7.1

7.1.1

Transmitter Control.

Transmitter Control (44).



44

7.1.2 8 Transmitter Control

1 • Swich On Channel

2 • Power Full — , 1/2 — -

• Apply ().

7.2

7.2.1 — » (45). « ».

7.2.2

(: , ,)

•
•

0	40.0	38	0	60	Vbat, Volts				
J	30.9	28	0	0	Source Voltage, Volts				
	6.2	5	0	0	Antenna Current, Amps				

45

7.3

Transmitter Status.

*

Transmitter Status (46).

Doob: Transmitter Status		H~Q
	State	Fault
Channel 1:	Off	Normal
Channel 2:	On	Normal
Power:	High	

46

8 Transmitter Status

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— :
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, ;
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, ;
, ;

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.1—

				RSIM*
RSIM		1—99		1
		1—4	-	1
		0—1	-	1
		0—99999		1
	1 .	0—3599		1,22
UTC	. .	000000.0—235959.99	/ -	2.5.17
RSIM#	RSIM#	1—46		2
		D/P/F		3
		0—99999		4
ASCII-		<257		5
-		0—1023		&. 17. 20, 21. 23
		I/F	.	
-	.	0000.000000-9000.00000		6
-	MHz	1.00—21.00	-	6
/		NSS		6
-	.	00000.000000-18000.000000		6
/		W/E		6
		9999.999 +9999.999	-	6
-		0.0—90.0	-	6
		0.0—999.0	-	6

.1

				RSftW
*		1—4()	-	7. 13.19. 21
		1—4()	-	7. 13. 19. 21
UTC	.	000000.00—235959.99	/ -	7
		1—32 (65—96) 99		7.8, 13. 19
		0.0—360.0	-	7
		0.0—90.0	-	7
C/UJ			-	7
URA			-	7
		0—63	-	7
-		0—2	-	8
(UTC)	.	000000.0—235959.9	/ -	8
		0—9	-	9
		1—2	-	10
		283.5—325	-	10. 21
		0—3	-	10
		25—300		10. 14. 2.1
		0—1	-	10. 14. 2.1
		0—1	-	10. 14. 2.1

.1

				RSIMK
-		<5		10
		0—9	-	11
- -		0.0—10485.5	-	11
-	/	0.0—4.1	-	11
- -		0.0—99999.9	-	
		I/S		12
:	-	FW/UM		12
PRC :	-	H/N		12
RRC :	-	H/N		12
UTC	.	000000.0—235959.9	-	13
RRC	/	4.064 4.064	-	13
PRC		10485.44 10465.44		
UORE		0.0—99.9	-	13
RTCM Z-	- GPS	0.0—3599.4	-	13.23
		0—255		13
		283.5—325	-	14
	/ /	0.0—999.9	-	15
/		0.0—999.9	-	15

.1

				RSA1K
		0.00—1.00	-	15
-		0.00—999.9	-	15
:		0.0—999.9	-	16
:		0.00—1.00	-	16
-		0.0—99999.9	-	16
/	:	0.0—999.9	-	16
CAU		0.0—99999.9	-	16
:	/ /	0.0—999.9	-	16
		0.0—99999.9	-	16
-		0—9	-	16
		0.0—99999.9	-	16
HDOP		0.0—99.9	-	16
HDOP		0.0—99999.9	-	16
		0.0—999.9	-	16
-		0.0—99999.9	-	16
-		0.0—99.9	-	16
		0.0—99999.9	-	16
-	/	0.0—9.9	-	16
		0.0—99999.9	-	16

.1

				RSftW
:		0.0—9.99	-	16
		0.0—99999.9	-	16
		0.0—99999.9	-	16
:		/		17
/ : -		UA		17
:		Z/UA		17
:		Z/UA		17
(HDOP) :				17
:	-			17
:	-			17
:	-	/		17
UDRE :		UA		17
UTC	.	000000.0—235959.99	/ -	18
		0.0—9999.9	-	18
		0.0—9999.9	-	18
,	-	0—24		18
PDOP		0.0—99.9	-	18

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				RS<M«
HOOP		0.0—99.9	-	18
VDOP		0.0—99.9	-	18
		0.0—99.99	-	19
		0.0—9.99	-	19
-		0.0—99.99	-	19
		0.0—99.9	-	19
		0.0—999.9	-	19
		0—2	-	20
-		0—32. 65—96		20
	.	0000.0—9000.0	/ -	21
/		NSS		21
	.	00000.0—18000.0	\ & / -	21
		W/E		21
-		0.0—500.0		21
		0—3	-	21
-		1—3 (1—6)	-	22
RTCM		1—64		22
		0.0—86400.0	-	22
RTCM -		1—64		23
RTCM -		0—7	-	23

.1

				RS<M«
RTCM		0—31		23
-		0—7	-	23
RTCM—		0—16777215		23
		0—99999.0	-	24
		0—99999.0	-	24
		0—999.0	-	24
-		0—99.0	-	24
		.		24
				24
		.DC		24
- -		0.1		24

(21	RTCM.	1.0	V.	NAVSTAR/GPS.	,
(31	MCO-R.M.823			1.0	-
(41	61162-2			285—325	()
(51	RTCM.	2.3		/DGPS.	2.3
(61	NMEA 0183				
(71		GPS		(SPS)	
(81					
(91				(OS)	
(10]	MSC.233(82)				-
(111	ASCI .15(5)				-
(121	— T.V.28				RS 232
(13]	— T.V.11				RS 422

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47.020.40

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: (). GPS. , - , -

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