## **User Manual**

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# User Manual For Tersus GeoCaster

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# **Revision History**

Revision	Description	Date	Owner
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## 1. Introduction

This chapter introduces the brief introduction, system requirements, installation, activation, and main interface.

## 1.1 Brief Introduction

The Tersus GeoCaster is a Networked Transport of RTCM via Internet Protocol (NTRIP) Caster software which allows GNSS correction data such as RTCM corrections to be repeated and sent to different end users via internet. It supports configurable bases online simultaneously and configurable rovers for one base. The end users involve in various areas including surveying, construction engineering, deformation monitoring, automated vehicle, precision agriculture, Unmanned Aerial Vehicle, machine control, robotics, and etc.

## 1.2 System Requirements

Tersus GeoCaster is to run on a wide range of different computer configurations. The systems requirements are listed as below:

Operating System	Microsoft Windows 7, 8, 10 (32-bit and 64-bit)				
Hardware	Minimum	Recommended			
Processor	Intel Core i3	Intel Core i5			
RAM	4GB	8GB			
Hard disk	10GB	1TB			
Graphics card	Direct X9 compatible	Direct X9 compatible 2GB			
	integrated graphics	discrete graphics			
Internet Connection	Ability to originate both http and	d https (SSL) connections			

Table 1 System Requirements for GeoCaster



## 1.3 Installation File

Download the installation file from Tersus website

<u>https://www.tersus-gnss.com/software</u> or contact Tersus Technical Support by email <u>support@tersus-gnss.com</u> to obtain the installation file.

## 1.4 Installation

Right click the installation file (with .exe extension) and choose 'Run as administrator', the installation process starts as below.



Figure 1.1 Start to install GeoCaster

Click [Next] to move to the next step.





Figure 1.2 Read license agreement

Click [I Agree] to accept the agreement, and move to the next step.



Figure 1.3 Choose install location



Browse the appropriate folder to install the software, click [Install] to start to install.



Figure 1.4 Finish the installation

After a few minutes, the installation is completed. Click [Finish] to finish the installation.

## 1.5 Activation

When first use the GeoCaster software, it should be activated by entering the activation code. To obtain the activation code, please send your machine sequence number to Tersus Technical Support by email

support@tersus-gnss.com and a unique string will be returned for activation.



MACHINE SEQ	a66haqqddV4VanPC
Active Code	

Figure 1.5 Register GeoCaster

If user clicks [Skip] in the above window, the software still cannot be opened and it pops out a warning window indicates that 'Please register software first'.



Figure 1.6 Register warning

## 1.6 Main interface

When the software is properly activated, it enters the watchdog and main interface which is shown below. Or double click the GeoCaster icon on the desktop to launch the software and enter the watchdog interface and the main interface.

The watchdog interface helps GeoCaster user to monitor caster status and set up SMS notification.



User	AlertRate/h*2	AlertValid/h*2	Phone	[Mount]	Ime	Action	Target	1010
					Applica Out o 00+C	ation Stop( f china sho	Hung) SM: build use le +Tel	S Notify

Figure 1.7 Watchdog interface

erver/Client Name	Connect Info					
	Start Time	e Receive Bytes(KB)	Send Bytes(KB)	Skip Send	RTCM Type GGA Int	fo Err/Valid Package(Total)
	<					
	Note: You C:\tersus\c	can find all NtripServer c ount\ and also see log in	ount info in C:\tersus\#log\ntrip	\ Cou	nt Folder Log F	older WebBrowser
	Login User					
	User	No. of NtripClient	No. of NtripServer	Max. No	Max. No. of	Add User
						Reload User
						Disable User
						WebBrowser
na Console	Port:	2101	Enable Log Console	Detai	(For debug)	statistics Now
g console						

Figure 1.8 GeoCaster main interface

The GeoCaster main interface is shown above, and detailed operation will be described in the next chapter.



## 2. General Operations

This chapter describes the detailed operations for the watchdog interface and the main interface.

## 2.1 Watch Ntrip Caster

### 2.1.1 Introduction

The Watch Ntrip Caster interface provides watch dog function for GeoCaster. The interface contains three parts:

#### 1) Alert Management

This area lists the information of Ntrip users, alert rate, alert valid time, phone number and mount point.

#### 2) Action Trace

This area lists the details of time, action, target and information.

#### 3) SMS Notification

This area sets up the telephone number for the SMS notification. For Chinese mobile, type the mobile number directly. For the users out of China, the notification number should use the format of 00 + country code + mobile number. For example, to notify a Singapore user, type 006512345678.

Generally, the Watch Ntrip Caster interface is for monitoring and notification. It is not recommend closing watchdog when GeoCaster is running.



## 2.1.2 Operations

The Watch Ntrip Caster is operating as shown below when there are a number of Ntrip users for management and monitoring.

ert Management					6	Action Trace		
User	Alert	Alert	Phone	[Mount]	~		Action	1
geobee003@vF	50	10	188			1/22 10:25:51	Send SMS	
geobee006@D	50	10	180			1/22 10:25:51	Send SMS	
geobee007@9	50	10	185			1/22 10:25:51	Send SMS	
geobee008@iV	50	10	156			1/22 10:25:51	Send SMS	
geobee009@6f	50	10	159		=	1/22 10:25:51	Send SMS	
geobee011@fP	50	10	159			1/22 10:25:52	Send SMS	
geobee012@S	50	10	137			1/22 10:25:52	Send SMS	
geobee013@N	50	10	139			1/22 10:25:52	Send SMS	
geobee014@7J	50	10	139			1/22 10:25:52	Send SMS	
geobee015@XT	50	10	139			1/22 10:25:52	Send SMS	
geobee017@KF	50	10	139			1/22 10:25:52	Send SMS	
geobee018@Y	50	10	139			1/22 10:25:53	Send SMS	
geobee021@O	50	10	184			1/22 11:00:31	Send SMS	
geobee023@5	50	10	136			10.000 (A.C. 1000 (2000)		
geobee024@LE	50	10	159					
geobee029@7	50	10	178					
geobee030@v	50	10	188					
geobee032@E	50	10	180					
geobee034@z	50	10	186					
geobee036@v8	50	10	133					
geobee037@h/	50	10	186					
geobee039@R	50	10	178					
geobee042@7g	50	10	138					
geobee047@4	50	10	185			1 10 Martin	21	
geobee064@fh	50	10	185			<		
geobee066@s6	50	10	138					
geobee067@rA	50	10	158			Application Sto	p(Hung) SMS No	tify —
geobee069@cg	50	10	158			Out of china s	should use	
geobee070@U	50	10	139			00+CountryC	ode+Tel	
geobee071@7b	50	10	139		· · · · ·	Γ	All and a second se	
geobee072@m	50	10	138		~			
CHARLES AND AND A	122.71							_

Figure 2.1 WatchNtripCaster in operation

If GeoCaster is closed accidentally, WatchNtripCaster will launch GeoCaster automatically and it has a record in the Action Trace area.

Contact Tersus Technical Support by email <u>support@tersus-gnss.com</u> for more information about the watchdog.



## 2.2 GeoCaster Main Interface

## 2.2.1 Introduction

The GeoCaster main interface contains four major information output areas which are shown as below.

erver/Client Name	Connect Info		2		
1	Start Time	Receive Bytes(KB)	Send Bytes(KB)	Skip Send RTCM Type	GGA Info Err/Valid Package(Tota
	Note: You ca C:\tersus\cou	n find all NtripServer co nt\ and also see log in	ount info in C:\tersus\#log\ntrip	Count Folder	Log Folder WebBrowser
	User	No. of NtripClient	No. of NtripServer	Max. No Max. No. of	Add User
					Reload User
					Disable User
					WebBrowser
	Port:	2101	Enable Log Console	🗌 Detail(For debug)	Statistics Now
Console	4				

Figure 2.2 Information output area in GeoCaster

#### 1) Server/Client Name

This area lists the server or client names which are sending RTCM stream to the NTRIP caster. The name consists of mount point, password, and user name.

#### 2) Connect Info

This area presents the connect information of the server or client selected. The connect information includes: Start Time, Receive Bytes (KB), Send Bytes (KB), Skip Send, RTCM Type, GGA Info, Error / Valid Package (Total) and Latitude / Longitude / Height.



#### 3) Login User

This area lists the information of logged in users which include user (user name and password), number of Ntrip Client, number of Ntrip Server, max number of Ntrip Client, and max number of Ntrip Server.

#### 4) Log Console

This area presents the logs and information for every operation step, such as client is connected, client is aborted, responses, and etc.

### 2.2.2 Operations

The GeoCaster is operating as shown below when there are a number of Ntrip users are sending RTCM stream to this Ntrip Caster.

S 2									
	240305005051816@=00*155*(geobee270)	Start Time Re	eceive Bytes(KB)	Send Bytes	(KB) Skip Se	nd RTCM Ty	pe GGA I	Err/Valid Package(Total)	Lat/Long/Height
<b>S</b> 2	24030500505 <u>0825</u> @Lgskxx*' (geobee255)	19-01-05 02:00:10 16	56838.031	0.012	-	RTCM3		0/3699831	47.2002904/116.4725691/
<b>S</b> 2	240305005050437@210 <b>01</b> 10_(geobee279)								
<b>S</b> 2	2403050050511H41:@  j=t1_a+(geobee287)								
<b>S</b> 2	24030500505####@ <b>LLDL_ULu</b> (geobee278)	<							
<b>S</b> 2	24030500505.522@1m-//lim1(geobee253)	Note: You can find all Ntri C:\tersus\count\ and also	pServer count in see log in C:\ter	fo in sus\#log\ntrip\	Count	Folder	Log Folder	WebBrowser	
<b>S</b> 2	24030500505050626@  <u>No</u>   * <b> </b> geobee259)	Login User							
<b>S</b> 2	2403050050505050500000000000000000000000	User	No. of Ntr	No. of Ntr	Max. No	Max. No		^	Add User
		geobee253@******	0	1	0	1			
5 2	240305005051516@2x1"ZKI (geobee267)	geobee263@117-5711Ah	0	1	0	1			Reload User
e -		geobee261@f07_4uEcs	0	1	0	1			1101000 0001
5 2	2403050050505050505060 (@1100F) 1tt+(geobee281)	geobee291@COULE8.x	0	1	0	1			
e .		geobee257@ (CHED.) H	0	1	0	1			Disable User
<b>ə</b> 2	24030500505	geobee251@ KAN _ PS	0	1	0	1			
c ,	40205005050505000 = 0 = M + = (cooboo 284)	geoboo202@tage1ae1	0	0	5	1			WebBrowser
	(georesen)	geobec202@0412205	0	0	0	1			
S 2	240305005050505 JOET JUETS (neobee261)	geobee303@PHCH100	0	0	0	1			
	······	geobee304@zacanoto	0	1	0	1			
		georeerowynan			•	-		•	
	Port: 2101	Enable Log Console	Detai(For de	ebug)	Statistics Nov	V			
Conse	ole								

Figure 2.3 GeoCaster in operation

Under the connect info area, there are three functional buttons:



#### 1) Count Folder

Click this button and the count folder will pop out as below. The count information is saved in a text file very hour.

^	Name	Date modified	Туре	Size
	190122_150000.txt	1/22/2019 3:00 PM	Text Document	1 KE
	190122_140000.txt	1/22/2019 2:00 PM	Text Document	1 KE
	190122_130000.txt	1/22/2019 1:00 PM	Text Document	1 KI
	190122_120000.txt	1/22/2019 12:00 PM	Text Document	1 KI
	190122_110000.txt	1/22/2019 11:00 AM	Text Document	1 KE
	190122_100000.txt	1/22/2019 10:00 AM	Text Document	1 KI
	190122_090000.txt	1/22/2019 9:25 AM	Text Document	1 KE

Figure 2.4 Count Folder

#### 2) Log Folder

Click this button and the log folder will pop out as below. The log information is saved in a .log file which can be opened with notepad.

					100
C:\	Tersu	5\#	og/	NTR	IP

Name	Date modified	Туре	Size
20190103.log	1/3/2019 5:00 PM	Text Document	6 KB
20181220.log	12/20/2018 11:40	Text Document	1 KB
20181128.log	11/28/2018 3:56 PM	Text Document	1 KB
20181127.log	11/27/2018 3:08 PM	Text Document	1 KB



#### 3) WebBrowser

Click this button and the default browser with link status for the selected mount point will pop out as below.

S/C	Fr	rom	IP			M	oun	tPoint	Sta	tTin	ne					Da	ta B	ytes	s(KB	) C	DataType	lat/long/	height
Server	erver 111.84.173.253 Test001		18-	18-12-07 15:49:38(+0800)					2772.835			R	RTCM3	31.1904012/121									
Statisti Moun	ics tPc	oint	Fir	st S	tar	Tir	ne			PAS	Со	unt,	/idea	al t	total	onl	ine	rate	(%)	Er	ror/Valid	Package	lat/long
Test00	01		18	-12	-07	10:	:02:	30(+08	300)	14/	15			4	98.59	)			(10)	0/	106887	, actuage	31.190
	00	01	Te 02	st0 03	01 04		urly 06 (	online	rate	fro	m 1 12	2/0 13	5 to 14 1	12 15	/07(- 16 1	+08 7 1	00) B 19	20	21	22	23		
12/05	00	<b>01</b> 0	Te 02 0	st0 03 0	01 04 0	Hou 05 (	o 06 (	online 07 08 ( 0 0	rate 09 10 0 0	e fro 0 11 0	m 1 12 0	2/0 13 0	5 to 14 1 0	12 15 0	/07(- 16 1 0 0	+08 7 18	00) <b>3 19</b> 0	<b>20</b>	21 0	22 0	<b>23</b>		
12/05 12/06	00 0 0	01 0 0	Te 02 0	st0 03 0	01 04 0	HOU 05 ( 0 0	06 ( 0 0	online 07 08 ( 0 0 0 0	rate 09 10 0 0 0 0	e fro <b>) 11</b> 0 0	m 1 12 0	2/0 13 0 0	5 to 14 1 0 0	12 15 0 0	/07(- <b>16 1</b> 0 0 0 0	+08 7 18 ) 0	00) <b>3 19</b> 0	20 0 0	21 0 0	22 0 0	<b>23</b> 0		





On the right side of login user area, there are four functional buttons:

#### 1) Add User

Click this button, it pops out the user manage window which is shown below.

input		1000	
Index	00002	Index 00001	u00001@t: >+
UserName	u00002		
NtripClient Online Limit(Empty:unlimitted)		-	
Mount Point online Limit(Empty:unlimittec			
ExpiredDate (YYYYMMDD)			
Authority	Normal O Super		
User Descript	19-01-22-16:19:57-	_	
Batch User Create			
Begin Seq After UserName		_	
Total Numbers			
Zeros Padding	~	<	
Dutput			
Generate			
Jenerote			

Figure 2.7 User Manage interface

The option with a star \* is compulsory. Fill the configuration for a new user, click [Generate] to output the password for the newly created user.

#### 2) Reload User

This button is used to share the registered user information. If customer wants to share the user info to another machine, copy lic.dat/licdisablelist.dat to destination directory, then click [Reload User] to update information.

#### 3) Disable User

Select a user in the login user area if customer wants to disable it, and click [Disable User] to disable this user. Deleting user is not recommended.



#### 4) WebBrowser

Click this button and the default browser with link status for the selected user in the left login user area will pop out as below.

Current Time:18-12-07 17:35:01(+0800) Server/Client Current Status S/C From IP MountPoint StartTime Data Bytes(KB) DataType lat/long/height Server 111.84.173.253 Test001 18-12-07 15:49:38(+0800) 2772.835 RTCM3 31.1904012/121.5 Statistics MountPoint First Start Time PAS Count/ideal total online rate(%) Error/Valid Package lat/long, Test001 18-12-07 10:02:30(+0800) 14/15 98.59 0/106887 31.1904 Test001 Hourly online rate from 12/05 to 12/07(+0800) 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 12/07 0 0 0 0 0 0 0 0 0 88 97 100 100 99 100 58

Figure 2.8 Link status in web browser

Under the login user are, there are three options and one button:

#### 1) Port

The port number can be edited in this box.

#### 2) Enable Log Console

Check the box on the left of [Enable Log Console] can enable the output of log console window.

#### 3) Detail (For debug)

Check the box on the left of [Detail (For debug)] to view more details specifically for debug purpose.

#### 4) Statistics Now

Click the button [Statistics Now] to create current count file, additionally from the auto created count file every hour.



On the bottom of the GeoCaster interface, there are five buttons:

#### 1) Start

Generally this button is shaded when the GeoCaster is launched. If the software is turned off, click [Start] to turn on the GeoCaster service.

#### 2) Stop

Click [Stop] to turn off the GeoCaster service.

#### 3) Exit

Click [Exit] to close the GeoCaster software, however the WatchNtripCaster should be closed first.

#### 4) Help

Click [Help] to pop out the text file of readme.txt which includes questions and answers that customer may encountered.

#### 5) Update License

Click [Update License] to register GeoCaster for longer duration, contact Tersus Technical Support by email <a href="mailto:support@tersus-gnss.com">support@tersus-gnss.com</a> for activation code.



# 3. Terminology

GNSS	Global Navigation Satellite System
NTRIP	Networked Transport of RTCM via Internet Protocol
PC	Personal Computer
RAM	Random Access Memory
RTCM	Radio Technical Commission for Maritime Services
SMS	Short Message Service



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