N71 | GETTING STARTED GUIDE MULTI APPLICATIONS GNSS SENSOR





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FCC interference statement

This equipment has been designed to comply with the limits for a class B digital device, pursuant to part 15 of the FCC Rules in the Portable Mode. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

Operation is subject to the following two conditions: (1) this device may not cause harmful interference and (2) this device must accept any interference received, including interference that may cause undesired operation.

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1. INTRODUCTION

Thank you for choosing the N71 GNSS Sensor.

This Getting Started Guide will provide useful information about your receiver. It will also guide you through your first steps of using N71 GNSS GNSS Sensor.

1.1. TECHNICAL ASSISTANCE

If you have a problem and cannot find the information you need in the product documentation, contact your local dealer from which you purchased the N71. Alternatively, please request technical support using the CHC Website at (<u>www.chcnav.com</u>) or CHC technical support email <u>support@chcnav.com</u>

1.2. YOUR COMMENTS

Your feedback about this Getting Started Guide will help us to improve it in future revision. Please e-mail your comments to support@chcnav.com

1.3. SAFETY INFORMATION

This manual describes CHC N71 GNSS Receivers. Before using the receiver, please make sure that you have read and understood this Getting Started Guide, as well as the safety requirements.

1.4. WARNING AND CAUTIONS

An absence of specific alerts does not mean that there are no safety risks involved.

A Warning or Caution information is intended to minimize the risk of personal injury and/or damage to the equipment.



WARNING-A Warning alerts you to a potential misused or wrong setting of the equipment.



CAUTION- A Caution alerts you to a possible risk of serious injury to your person and/or damage to the equipment.

1.5. REGULATIONS AND SAFETY

The N71 Sensor may be delivered with optional internal data links. Regulations regarding the use of the data link vary greatly from country to country. Depending on local authorities, the N71 can be used without obtaining an end-user license or may require administrative permissions. For license information, consult your local dealer.

1.6. USE AND CARE

The N71 Sensor is designed to withstand the rough environment that typically occurs in the field. However, the N71 Sensor is high-precision electronic equipment and should be treated with reasonable care.

2. OVERVIEW

2.1. FEATURES

Designed for seamless integration, the N71 is a powerful multi-application GNSS sensor which delivers state-of-the-art positioning features in a rugged enclosure. The CHC N71 GNSS sensor provides a cost-effective answer to demanding applications such as geodetic reference station, academic research, precision agriculture RTK network, deformation monitoring, centimeter accuracy RTK sensor for marine survey, dredging or any GPS/GNSS machine guidance when high performances and reliability are required.

The N71 offers outstanding performances with proven and innovative 220-channels GNSS functionality. The future proof multi-constellation tracking feature increases availability in obstructed sky conditions such as construction sites in urban areas while securing RTK accuracy. The very low noise GNSS carrier phase measurement and low level elevation tracking technology make the N71 a powerful reference station solution.

2.2. SPECIFICATIONS

GNSS characteristics

- 220 channels with simultaneously tracked satellite signals
 - · GPS: L1C/A, L2E, L2C, L5
 - · GLONASS: L1C/A,L1P, L2C/A, L2P
 - · SBAS: WAAS, EGNOS, MSAS
 - Galileo: GIOVE-A and GIOVE-B (test)
- Advanced multipath mitigation technology
- Low noise carrier phase measurement with <1 mm precision in a 1 Hz bandwidth.

Performance specifications⁽¹⁾

- Real Time Kinematics (RTK)
 - Horizontal: 10 mm + 1 ppm RMS
 - Vertical: 20 mm + 1 ppm RMS
 - Initialization time: typically < 10 s
 - Initialization reliability: typically > 99.9%
- Post Processing Static
 - Horizontal: 2.5mm + 1ppm RMS
 - Vertical: 5mm + 1ppm RMS
 - · Baseline Length: ≤ 300 km

Communications

- 1x LAN port:
 - 1 port with RJ45 connector supports links to 10BaseT/100BaseT networks.
 - HTTP, HTTPS, TCP/IP, UDP, FTP, NTRIP Caster, NTRIP Server, NTRIP Client
 - Proxy server support
 - · Routing table support
 - NTP Server, NTP Client support
 - · UPnP and Zeroconf support
 - · Email Alerts and Position Monitoring
- 1x Lemo 10 pin 1 shell, 3 wire serial with power input, 1x USB 4 wire
- Optional internal GPRS modem: Quad-band international modem with SMA antenna connector
- Optional radio modem:
 - · Internal Rx: 410-430(3) / 430-450(3) / 450-470 MHz
 - External Tx DL5: 1W 20W adjustable (4)
- Protocols:
 - · Correction formats; RTCM2.1, RTCM2.3, RTCM3.0, CMR, CMR+
 - Position/Status I/O: NMEA0183 v2.30, GSOF
 - · Observables: RT17, RT27, BINEX, RTCM 3.x
 - · Up to 50 Hz output standard
- Internal data logging storage capacity: 64 Mb

Physical

- Size (LxWxH): 195 x 145 x 51 mm (7.7 x 5.7 x 2.0in)
- Weight: 1.35 kg (48 oz)
- Operating temperature: -30 °C to +65 °C (-22°F to 149°F)
- Storage temperature: -40 °C to +75°C (-40°F to 167°F)
- Humidity: 100% condensation
- Waterproof and dust proof: IP65 and MIL-STD 810F
- Shock: survives a 1.5-meter drop on to concrete

Electrical

- Power consumption: 2.6 W nominal, dependent on usersettings
- External power input: 9-18 VDC

User Interface

.

- PC Control Utility via Serial
 - Allows for advance receiver setup of UHF, GPRS Modem, data logging
- Web User Interface
 - Secure
 - Allows remote configuration, data retrieval and firmware updates
 - · Setup of multiple streaming / monitoring ports

Antenna option

A220GR GNSS Geodetic Antenna, and C220GR GNSS Choke Ring
 Antenna

Galileo GIOVE-A and GIOVE-B test satellite support uses information that is unrestricted in the public domain and is intended for signal evaluation and test purposes. (2) Accuracy and reliability specifications may be affected by multipath, satellite geometry and atmospheric conditions. Performances assume minimum of 5 satellites, follow up of recommended general GPS practices. (3) Feature available on demand (4) Use of UHF Tx is subject to country specific type approvals.

2.3. N71 BASIC SUPPLY

The table below provides an overview of the different items composing the N71 Base Kit

Item	
CHC N71GNSS Receiver	100
Power Adapter with Cord	
Transport Case	
Whip antenna	
GPS to PC Data Cable	5
2M Internet Cable	0

3. N71 DESCRIPTION

3.1. RECEIVER FRONT VIEW





• Power Button

Pressing the Power Button switches ON or OFF the N71. Note that due to the 'auto restart' function, the N71 will automatically switches ON when connecting to already powered main supply.

Switch Button

The function of switch button is to select the N71GNSS from RTK mode to static mode. The Switch Button has two functions:

- Function 1: Switching Mode→Long press the button until the Record LED off.
- Function 2: Checking Mode → Press the switch button, if the correction LED turns on, it means the switching succeed.



CAUTION: When checking the N71 Mode, do not press the Switch Button too long as it will re-activate the RTK mode.

Power LED

The LED turns ON when the N71GNSS is powered and OFF when the N71 GNSS switched off.

Satellite LED

The LED indicator shows the number of satellites tracked by the N71. E.g. the LED flashes 5 times continuously when the receiver is tracking 5 satellites.

• Differential Data LED

The Differential Data LED flashes once per second when:

- A. As a Base station → successfully sends out differential data in RTK mode.
- B. As a Rover station→ successfully receives differential data from Base station.

3.2. RECEIVER REAR VIEW



→ 10 Pin Lemo Serial Port 1

Use this port to connect the N71 CHC to PC or PDA and also to supply power to receiver via the CHC Data Cable.

Refer to Appendix A for the LEMO pin out diagram.

➔ GPS Antenna Connector

The TNC GPS antenna connector allows connection of the external GNSS antenna to the N71GNSS.

➔ Radio Antenna Connector

The TNC Radio antenna connector allows connection of a whip antenna to the N71GNSS.

→ LAN Connector

Use the LAN RJ45 port to connect the N71 to a PC or Local Network.

➔ GPRS Slot

To enable GPRS connection of the N71, insert a active SIM Data Card provided by your local Mobile Network supplier. The GPRS functionality provides wireless data communication channel between base and rover and also connection to RTK Networks.

3.3. SOFTWARE INSTALLATION

3.3.1. CHC SOFTWARE OVERVIEW

The CHC software package is to be installed on CHC recommended PDA (LT30, Getac ™ PS236, Recon™ ...).

• HCGPSSet → Overall Receiver setup



CAUTION: To validate the Setting you need to turn the N71 receiver OFF and then ON.

- HCGPRSCe \rightarrow Radio and built-in GPRS module setup.
- RTKCe / Landstar→Software to perform RTK Surveying Data collection (requires activation).

3.3.2. INSTALLING CHC SOFTWARE

The N71 software RTKCe, HCGPSSet and HCGPRSCe are bundled in one combined CAB format installation package. To install, copy the installation file to your PDAor PC and double click the on the CAB file. The software installation process starts automatically.



CAUTION: Use only the latest CHC software CAB file with the N71

3.4. POWERING THE N71

N71 can be powered by either connecting it to the mains power (A.) or to an external battery (B.)

A. Connect to the mains power \rightarrow use CHC GPS to PC cable + Power Adapter



Connect the Power Adapter socket to the mains100-240 VAC and Power Adapter male Jack connector to the Power Port of the GPS to PC cable.

B. Connect to external battery \rightarrow use CHC GPS to PC cable + external power cable (optional) + Car battery.



Properly connect the external power cable to a car battery (respecting the polarity) and then connect the Power Adapter male Jack connector to the Power Port of the GPS to PC cable.



3.5. System Installation

3.5.1. SUPPORTED GNSS ANTENNAS

CHC recommends the use of the CHC A220GR GNSS Antenna or CHC C220GR GNSS Choke Ring with the N71 GNSS Sensor.



Other GNSS antennas may however be used ensuring that the antenna receive the proper GNSS frequencies and operates at either 3.3V or 7.1V with a signal greater than 40 dB at the antenna port.

3.5.2. INSTALLING THE ANTENNAS

Choosing the correct location for the GNSS antenna is critical to the installation. Poor or incorrect placement of the antenna can influence accuracy and reliability and may result in degraded performances normal operation.

Follow these guidelines to select the antenna location:

- If the application is mobile / kinematic, place the antenna on a flat surface along the centerline of the vehicle.
- Choose an area with open view to the sky and far from metallic objects.
- Avoid areas with high vibration, excessive heat, electrical interference or strong magnetic fields.
- Avoid mounting the antenna close to electrical cables, metal masts and generally close to other antennas

3.5.3. N71 CONNECTION DIAGRAM

Typical connection diagram of the N71 + A220GR Antenna connected to mains power and PC.



4. N71 CONFIGURATION USING CHC SOFTWARE SUITE

The N71 is a versatile GNSS Sensor which offers various setup and configuration software tools. Those software tools are described in the following pages. Please read this Getting Started Guide carefully before selecting the most appropriate ones for your application.

After having completed the installation of the CHC software suite on your PDA (see. 3.3.1), the configuration of the N71 Sensor can be performed via the serial port link (RS232 or USB).

4.1. STATIC SURVEY SETTING - HCLOADER

To change the default setting of the GNSS static raw data sample interval and mask angle, you need to install the HcLoader software on your PC. After successful installation of the HcLoader software, follow the steps:

Start Hcloader software \rightarrow select the connection port of PC

lf you use USB port to download, you need first to install the 32 bits OS PC driver available on CD ROM

					6	
*9 1918 - 200161 COM1						
<u>File Edit Connection Tools C</u> ang	uage <u>V</u> iew <u>H</u> elp					
Down Stop Del Station	ink Break Setup Cl	🔆 📝 🦿 🌾 OSE Update				
⊕ 🖘 C: 🔼	File name	Begin time	Stop time	Size(KB)	Station name	Ant. High
i≑≪≫ D:	200161243D.HCN	2012-08-30 11:08	11:12	98	200161	0.000
🚊 · 🧰 1	200161243D.HCN	2012-08-30 11:16	12:03	1,410	200161	0.000
📄 💼 2-test CGO 👘 📄	200161243G.HCN	2012-08-30 14:22	14:22	96	200161	0.000
🗌 🦳 🔁 Data Files	200161243G.HCN	2012-08-30 14:37	14:37	576	200161	0.000
	200161243H.HCN	2012-08-30 15:00	15:03	110	200161	0.000
	<u> <</u>					>
RINEXS	File name	Download time	Size(KB)	Receiver No.	. M	Iodel
- 360Dowploads	160325247I.HCN	2012-09-03 16:29	200	160325	1	915
🛨 🧰 alt-230812						
🕀 🧰 Backup						
🕀 🛅 CGO TEST 🛛 🗸						
	<					>
Ready		Path of download: D:\2-te:	st CGO\Data Files	Emp	pty memory: 61.	7м 🗶 🅢

After successful connection, the receiver Serial Number is displayed on the top left corner :

To modify the Sample Interval and Mask Angle \rightarrow click on Setup

Item	Parameter	Update
Model of the receiver	1918	
Receiver No.	200161	Apply
Date of manufacture	2011-05-27	
Option	No	<u>R</u> egister
Version	7.10	
Memory	64MB	
Sample Interval(second)	1 s	
Mask Angle(degree)	13	
Data Log	Manual	
Data Log Session	Manual	
Port Configration	Normal mode	
Work Mode	No auto base	
Correction Port	Port2+GPRS/CDMA	
Format of Correction	CMR	
Remain battery	A:0%	
Register Code	34879-17028-88119	<u>D</u> efault
Expired Date		[[]]

The GNSS Raw Data Download procedure is described in the Appendix B

4.2. RTK SETTING - LANDSTAR (RTKCE)

The N71 communication settings can be configured using CHC Landstar field software installed on a PDA. Landstar allows the configuration of the optional radio modem, GPRS modem and connection to RTK Networks.

4.2.1. CONNECTING N71 WITH PDA

Connect your PDA to the N71 receiver using the GPS to PC data cable.

Start the Landstar software \rightarrow Go to Config \rightarrow Com configuration. In the Connection type \rightarrow Select serial port as: PDA Port= COM1 and GPS Port = GPS-Com1

Connection Type	Serial Port 🛛 🔽	
PDA Port:	GPS Port:	
СОМ1 🛛 🗸	GPS-COM1 💌	
Record Raw Date	а	
File		
Speed(Byte/sec)	500	
	- ¶0.000	Map Men

餐 LandSta	r	•••	۲ _× -	l€ ok
Rover	Datalink	Ra	dio	•
Protocol	Radio Mode	▼	Char	nnel
Frequency	460.0000	▲ ▼	0	•
	450.000-470	.000	MHz	
90%	12	P 0	0.000	Мар
20 H · 8 74	3-V-13 327-RMS-10	838	9	Menu
Exit Get	Set			ОК

4.2.2. SETTING RADIO FREQUENCY AND PROTOCOL

Go to Config → Rover Par. → Correction Link Select Datalink = Radio Channel = 0

The optional UHF modem is compatible with the following Protocols to be selected from according to the Transmitter installed at the Base Station

Protocol	Description	Frequency
Radio mode	CHC Radio protocol	Set frequency
TT450S	TrimTalk [™] 450S protocol	Set frequency
Transparent	Transparent protocol	Set frequency

CHC UHF modem works at 9 600 bps @ 12.5KHz bandwidth.



After setting, tap **Set** menu to active the settings.

4.3. SETTING GPRS CONNECTION

Attention: You must connect an external GPRS antenna to the N71 GPRS port to enable the use of the internal GPRS module.

Start the HCGPRS software \rightarrow set the connection port = COM1 and Work Mode = GPRS Mode \rightarrow Then tap SET MODE.

The Work Mode now changes into GPRS Mode \rightarrow The Port Tab, GPRS Tab and CORS Tab are now activated.

In GRS Tab →choose the Protocol =CORS→the Mode =Rover→ Then input server IP and Port of RTK Network center provided by your CORS/RTK Network Operator → Finally enter the GPRS information (APN Name, Server N°, User Name and Password) provided by your GPRS Operator (see example on left side)

Protocol:	CORS	•	Get	
Mode:	Rover	•	Set	
Server IP:	<i>8</i> .	Port:		
116.228.1	6.90	8090		
APN Name	e:	CMNET		
Mobile Server NO: User Name:		*99***1#		
		Password:		
Base ID:				

餐 HCGPR	S 1.18(2010122 🐇	<mark>†</mark> Ÿ _X ◀x ok
Port Padio	GPRS CORS Firm	ware
Protocol:	Embed TCP/II ▼	Get
Log Mode:	Manual 🔻	Set
Name:	Password:	
Source list: Diff. Type:	▼	Get Source
RTCM3.0	Ŧ	
Prog:		

- In CORS Tab, select the Protocol and Mode corresponding to your application/configuration.
- A. Protocol can be chosen between Embed TCP/IP and Own TCP/IP.
- B. Log mode of CORS/RTK center can be set between Auto Mode and Manual Mode. Manual Mode is suggested for this initial configuration step; you will be able to log in later to the CORS/RTK center later using Landstar Software.

Manual Mode→key in the user name and password in LandStar and it will send the GPGGA information to CORS center manually.

Auto Mode→after setting the Receiver as Auto Mode, the Receiver will attempt to log on CORS center automatically after being switch ON. When the correction LED flashes once each second, it means that the receiver has successfully logged in CORS/RTK center

Tips: The Get Source Button can only be used when PDA is connected to internet.



Caution: If you need to switch back to Manual Mode \rightarrow delete all the information of Name, Password and Source list, then re-select the Manual Mode

5. N71 CONFIGURATION USING TRIMBLE[™] SOFTWARE SUITE

This chapter gives a brief introduction of how to use the native OEM Trimble[™] BD970 software to configure N71 GNSS Sensor. For more details please read Appendix 3 - "Configuration N71 Using Web Interface"

5.1. CONFIGURATION OF N71 IP by WINFLASH™

Go to the follow link to download the **BD9xx WinFlash V234_V462.exe** software:



- Install WinFlash on your PC
- Connect the N71 to your PC using the GPS to PC Data cable by serial port
 - 5.1.1 Upgrading the receiver firmware

Start the WinFlash utility. The *Device Configuration* screen appears.

From the *PC serial port* field, select the serial (COM) port on the computer that the receiver is connected to Click **Next**

inFlash	The devices which WinFlash can communicate with are listed below. Select a device and PC serial port to use, and press "New" to continue	WinFlash	The operations supported by the BUSKX Receiver listed below. Select an operation to perform and press 'Next' to continue.
	Device Configuration Device type: BD3xx Receiver BD3xx Receiver		Operations Configure ethernet settings Configure radio settings Configure calo settings Loss GPS software Update receiver options Verdu GPS software version Description
Strimble.	PC serial port: COM1	() Trimble.	Loads new application software into the BD9xx.

Select Load GPS software and then click Next.

From the *Available Software* list, select the latest version and then click **Next**.

	WinFlash	WinFLASH needs to know which software should be used to update the GPS cervier. The software versions listed below are currently installed on the system. Select a software version and press Next to continue. Available Software BD970 FW V4.44 Dec 20 2011 BD982 FW V4.62 Sep 14 2012 BD982 FW V4.62 Sep 14 2012 Turn off outputs before updating firmware	WinF	Connect the cable. Review the software the	BD9xx to CDM1 of the PC using the I rettings below and press 'Finish' to sta upgrade. titings onfiguration: x Receiver excted to CDM1. to perform: 1 GPS software software to: 70 FW V4.62 Sep 1/4 2012
--	----------	---	------	---	---

If all is correct, click **Finish**, then Click **OK**.

The *Software Upgrade* window appears again and states that the operation was completed successfully.

Software Upgrade	X
Status Updating the software of the BD9xx	
4%	
Cancel	

5.1.2 IP configuration

Start WinFlash and follow the instruction below to set the static IP of N71 sensor to log on internet.

WinFlash v1.212 - Device Co	nfiguration	BD9xx v4.40b3 - Operation Selection
WinFlash	The devices which WinFlash can communicate with are listed below. Select a device and PC serial port to use, and press 'Next' to continue. Device Configuration Device type: BDSxx Receiver	WinFlash Select an operation to perform and press 'Next' to continue. Operations Operations Under receiver options Verify GPS software version Verify GPS software version Verify GPS software version Verify GPS software verify GPS software versi
Trimble.	PC serial port: COM1	<u>Back</u> <u>Next</u> Cancel Help

WinFlash - Settings Review	Ethernet Configuration	×
WinFlash Connect the BD9xx to CDM1 of the PC using the DB9 cable. Review the settings below and press 'Finish' to start the Configure ethernet settings. Current Settings Device configuration:	Ethernet settings IP Setup: Static IP address	
BD3xx Receiver connected to COM1. Operation to perform: Configure etherinet settings	IP Address: 192 . 168 . 0 . 129	
	Netmask: 255 . 255 . 255 . 0	
Strimble.	Broadcast: 192 . 168 . 0 . 255	
< Back Finish Cancel Help	Gateway: 192 . 168 . 0 . 1	
	DNS Address: 211 . 167 . 97 . 67	
	HTTP settings	
	Server Port: 80	
	OK Cancel	

5.2. Configuration of N71 output address with ToolBox™

We recommend that you use the Web interface to configure the receiver and monitor its status. Not all receiver functions are supported in the Configuration Toolbox software. The Configuration Toolbox is the only utility that can be used to load local datums and coordinate systems into the receiver.

Go to the follow link to download the software



- Install ToolBox on your PC
- > Connect the N71 to your PC using the GPS to PC Data cable

The instructions below describes the setup of NMEA output on serial port COM 1 as an example. More set-up are available to match your application requirements.

5.2.1. Set the data stream output

Run ToolBox software, create and save the application file in the Configuration Toolbox software, Select setting to 'Applied immediately' or 'Store in receiver'

Click on 'Serial' under the Available selection box \rightarrow Click Add to enable Serial – Port 1 \rightarrow Select the appropriate Baud Rate.

onfiguration File			Configuration File		
Contents: File General Serial - Port 1 Serial - Port 2 Serial - Port 3 Reference Output - RT17 Output - GSOF	File Modified: September 14, 2012 12:00AM For: Any Receiver Settings should be Applied immediately Stored in receiver	(1 of 29)	Contents: File General Serial - Port 1 Serial - Port 2 Serial - Port 3 Reference Output - R117 Output - GSOF	Serial - Port 1 Receiver serial port: Port 1 Baud rate: Parity: None	(3
Add Bemove Ayailable: Serial Alarm	Solida Infective As CURRENT C As auto power up file Reset to defaults before applying		Add Bernove Available: Serial Alam	Flow control: None Configure channels separately	
Logging SV Enable - GPS SV Enable - GLONASS Output	Iransmit Save Close	Help	Logging SV Enable - GPS SV Enable - GLONASS Output	Iransmit Save Close	He

Click on 'Output' under the Available selection box \rightarrow Click Add to enable Output type selection \rightarrow Select NMEA, Port 1 and appropriate Baud Rate

Contents:	Output - NMEA		(3 of 3)
File Serial - Port 1 Output - NMEA	Message type: Port: Frequency: Offset (sec) Message subtype:	NMEA All Ports Off Port Off CMR GSOF NMEA RT17 RT17 RTCM 1 PPS ADV	
SV Enable - GPS SV Enable - GLONASS Output Antenna Device Static	Transmit	Save Dose] Нею

5.2.2. Set the coordinate system

On Available selection box \rightarrow Click coordinate System \rightarrow then edit the local coordinate system.

Configuration File	
Contents: RTCM Input CMR Input Time Activation WAAS Antenna Model - base Antenna Model - rover Position Mode Coordinate System	Coordinate System (29 of 29) System: UTM - 51 North Zone: 51 North Datum: WGS 1984 Projection: Transverse Mercator
Add Remove Available: SV Enable - GLONASS Output Device Shutdown Antenna Model	Geoid: None Coord Sys Settings v10.50 CSIB Coord Sys Details Select Import From DC Apply Geoid Grid Save Site Save Geoid Grid Iransmit Save Close

After built the application file, go to active the files.

➢ If the configuration file is stored on the receiver → Go to Communications Menu → Activate File → Select the Current File → Click on 'Activate File'

<mark>ﷺ</mark> (Configuration Toolbox	Activate Remote File
<u>F</u> ile	Communications Help	BD970 Directory
	<u>G</u> et File Iransmit File <u>A</u> ctivate File Delete File	Filename Size Date Time DEFAULTS 3445 02-09-11 00:00 CURRENT 3584 02-09-11 00:00
	Receiver Details <u>R</u> eset Receiver <u>P</u> ort	Activate File Cancel

5.3. CONFIGURATION OF N71 WITH WEBEXPLORE[™]

When connecting the N71 to your PC using the LAN cable for the first time, follow the steps, if you already configuration N71 static IP (**in Chapter 5.1.2**), please directly using this static IP to configuration N71.

- Set your PC IP address to "Obtain an IP address automatically
- Connect PC with N71 with a LAN cable
- > Type <u>http://169.254.1.0</u> in your default Internet browser
- Enter the default User name = admin and Password = password

Connect to 192.	168.0.129
R	GP4
The server 192.16 password. Warning: This serv password be sent i without a secure co	8.0.129 at Trimble requires a username and er is requesting that your username and n an insecure manner (basic authentication onnection).
User name:	🖸 admin 💌
Password:	
	Remember my password
	OK Cancel

- Press OK to login.
- > The N71 GNSS Sensor configuration screen will appear

The following menus are available on the left side on the screen:

- ✓ Receiver Status
- ✓ Satellites
- ✓ Receiver Configuration
- ✓ I/O Configuration
- ✓ Network Configuration
- ✓ Security
- ✓ Firmware and Help
- → Change the User Interface Language
- → Check the receiver Status: differential status, receiver options
- → Satellites configuration (Enable / Disable)
- → Important Setting : set up NTRIP Client and Data output message
- → IP configuration to set the N71 Static IP address

xx 🛄 🖶 🚺 💳
Receiver Status
Satellites
Receiver Configuration
I/O Configuration
Network Configuration
Security
Firmware
Help

APPENDIX A : LEMO CONNECTOR PIN OUT



PIN	Signal Name	Description
1	TXD	Transmit Data (PC receive data through this pin)
2	RXD	Receive Data (PC transmit data through this pin)
3	PWR	External Power Input (9-15 V DC)
4	PWR	External Power Input (9-15 V DC)
5	GND	External Power Ground
6	GND	External Power Ground
7	USB PWR	
8	D-	
9	D+	
10	Not Used	

APPENDIX B : DOWNLOADING GNSS RAW DATA

- → Open HcLoader PC Software
- → Connect your PC to the N71 serial port
- → Click start → programs → HuaceNav → HcLoader
- → Click Connection → Setting

📲 No lin	k								
<u>E</u> ile <u>E</u> dit	<u>C</u> onnection	<u>T</u> ools	Language	⊻iew	<u>H</u> elp				
Down S	Connect Setting	Shift Ctrl+	+F1 , -5 ,	₩ Break	Setup CI	- ↓ OSE Update	ę	N?	
	Disconnec	t	Fi	le name		Begin time			Stop ti
⊕ 🖘 D:	Power Off	_							
. <u>+</u>									
⊕ 🍲 G:									
1									

- ➔ COM Select the Serial port of computer or USB
- → Baud Rate:115200
- → Click OK

Tips: if using USB to download data, please install driver first

(available on 32 bits OS PC)

Communicatio	n	
COM Baud Rate	COM1 - 115200 -	<u>O</u> k <u>S</u> etup
☐ Auto Ref ☐ Connect	resh by COM1(Baud:9600)	
		<u>C</u> ancel

→ Click Update: the N71 Serial Number appears on the top left corner

99 1918 - 400300 COM1							
<u>File Edit Connection Tools Langu</u>	iage ⊻iew <u>H</u> elp						
Down Stop Del Station Link Break Setup Close Update							
🕀 🖘 C:	File name	Begin time	Stop time	Size(KB)	Station name		
庄 🥪 D:	K001i287G.HCN	2010-10-14 14:53	14:57	20	K001i		
🖻 🥪 E:	400300287H.HCN	2010-10-14 15:01	15:11	32	400300		
- 🗀 1	400300287H.HCN	2010-10-14 15:12	15:12	0	400300		
🗖 🦰 opk10.13	400300287H.HCN	2010-10-14 15:14	15:16	15	400300		
Mov	400300287H.HCN	2010-10-14 15:21	15:25	13	400300		
Const Const	400300287H.HCN	2010-10-14 15:29	15:30	12	400300		
	400300287H.HCN	2010-10-14 15:33	15:48	60	400300		
+ C Report_a	400300287H.HCN	2010-10-14 15:49	15:50	6	400300		
	400300287H.HCN	2010-10-14 15:51	15:51	0	400300		
🛅 Res	400300287H.HCN	2010-10-14 15:56	15:57	16	400300		
Cinex	400300287I.HCN	2010-10-14 16:00	16:09	33	400300		
🕀 🦳 Program Files	400300287I.HCN	2010-10-14 16:14	16:21	29	400300		
F BECYCLER	400300287I.HCN	2010-10-14 16:23	16:27	20	400300		
Suctem Volume Informal	400300287I.HCN	2010-10-14 16:34	16:36	18	400300		
 □ System volume Information □ 海外测试数据 	<				>		
田 🛅 精密星历	File name	Download time	Size(KB)	Receiver N	D. N🔼		
	10.12.hcn	2000-01-01 16:25	528	1234	~		
< >	<				>		
Ready	Path	of download: E:\ppk10.13		Empty men	nory: 63.6M 🗶 🥢		

We suggest you to change the station information when download the HCN format data to ensure a proper conversion to Rinex.

By default, the N71 station name is the SN number of the receiver using 6 characters. The conversion to Rinex truncates the station name to 4 characters only.

						_
9 1918 - 400300 COM1						E
Ble Edit Connection Tools Langu	age ⊻iew <u>H</u> elp					
Down Stop Del Station	4 💥 Break Setup	Close Update ?	N ?	Г		
∄-⊛ C:	File name	Begin time	Stop time	Size(KB) Sta	ition name	An
🗄 🖘 D:	400300287G.HCN	2010-10-14 14:53	14:57	20	400300	C
Ξ 🥪 E:	400300287H.HCN	2010-10-14 15:01	15:11	32	400300	C
ppk10.13	400300287H.HCN	2010-10-14 15:12	15:12	0	400300	0
May	400300287H.HCN	2010-10-14 15:14	15:16	15	400300	0
- Report	400300287H.HCN	2010-10-14 15:21	15:25	13	400300	0
Report	400300287H.HCN	2010-10-14 15:29	15:30	12	400300	C
Report_a	400300287H.HCN	2010-10-14 15:33	15:48	60	400300	C
🕑 🧰 Report_b	400300287H.HCN	2010-10-14 15:49	15:50	6	400300	0
- Carl Res	400300287H.HCN	2010-10-14 15:51	15:51	0	400300	0
C Rinex	400300287H.HCN	2010-10-14 15:56	15:57	16	400300	0
Program Files	400300287I.HCN	2010-10-14 16:00	16:09	33	400300	C
	4003002871.HCN	2010-10-14 16:14	16:21	29	400300	C
Custon Values Tefernation	400300287I.HCN	2010-10-14 16:23	16:27	20	400300	0
System Volume Information	4003002871.HCN	2010-10-14 16:34	16:36	18	400300	0
🗉 🧰 海外測试数据						
	14					

To change the station name and enter the antenna height:

- → Select the one observation file
- → Click the right mouse and select Obs. Infor option
- → Enter the station name and antenna high
- → Click OK.

	000					
File name	Begin time		Stop time	Size(KB)	Station name	Ant. High
400300287G.HCN	2010-10-14 14:5	Export	Ctrl+E	20	400300	0.000
400300287H.HCN	2010-10-14 15:0	Stop		32	400300	0.000
400300287H.HCN	2010-10-14 15:1	Dtop		0	400300	0.000
400300287H.HCN	2010-10-14 15:1	Delete		15	400300	0.000
400300287H.HCN	2010-10-14 15:2	T		13	400300	0.000
400300287H.HCN	2010-10-14 15:2	Obs. In	for	12	400300	0.000
400300287H.HCN	2010-10-14 15:35		10:40	60	400300	0.000
400300287H.HCN	2010-10-14 15:49		15:50	6	400300	0.000



Please check the data information are properly applied by HcLoader \rightarrow You can download the GNSS Raw data to your compute and select the storage path.

→ Click right mouse on the file session to download, then select Export

*9 1918 - 400300 COM1					
<u>File Edit Connection Tools Langu</u>	age <u>V</u> iew <u>H</u> elp				
Down Stop Del Station	4 🔆 Break Setup CI	🔆 📝 🢡 🕅	•		
	File name	Begin time	Stop time	Size(KB)	Station name
i∰≪a> D:	K001i287G.HCN	2010-10-14 14:53	14:57	20	K001i
E: 	400300287H.HCN	2010-10-14 15:01	15:11	32	400300
	400300287H.HCN	2010-10-14 15:12	15:12	0	400300
🕀 🦳 ppk10.13	400300287H.HCN	2010-10-14 15:14	15:16	15	400300
Program Files RECYCLER System Volume Information	400300287H.HCN	2010-10-14 15:21	15:25	13	400300
	400300287H.HCN	2010-10-14 15:29	15:30	12	400300
	400300287H.HCN	2010-10-14 15:33	15:48	60	400300
	400300287H.HCN	2010-10-14 15:49	15:50	6	400300
🗉 🧰 海外側试数据	400300287H.HCN	2010-10-14 15:51	15:51	0	400300
⊡ 🛅 精密星历	400300287H.HCN	2010-10-14 15:56	15:57	16	400300
🗉 🧰 下载	400300287I.HCN	2010-10-14 16:00	16:09	33	400300
由 合 杂项	400300287I.HCN	2010-10-14 16:14	16:21	29	400300
〒 🦰 赵文龙6.04	400300287I.HCN	2010-10-14 16:23	16:27	20	400300
	400300287I.HCN	2010-10-14 16:34	16:36	18	400300
⊞	<	1111			>
	File name	Download time	Size(KB)	Receiver N	o. Moc
	911693117E.HCN	2010-04-28 08:59	234	911693	191
< >	<				>
Ready	Path	of download: E:\1		Empty men	nory: 63.6M 🔔 🏑

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