Application Note

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Application Note of Using David GNSS Receiver with FieldGenius Data Collection Software

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FieldGenius data collection software from MicroSurvey is a mature, professional and full featured field survey software. It is brand neutral and has been widely used by surveyors from all over the world with different brands of hardware.

In this documentation, I will explain how to connect the David GNSS Receiver with FieldGenius at the first time.

Step 1: Setup David GNSS Receiver

We need to connect GNSS Antenna on David GNSS Receiver, connect Bluetooth and provide power to David Receiver.



Step 2: Launch FieldGenius software

FieldGenius can support Windows Mobile Handheld, Windows CE Handheld and Windows (X86 or X64) Tablets and Desktops. You can download the latest version for demo. http://helpdesk.microsurvey.com/index.php?/Knowledgebase/Article/View/1544

I use Windows Desktops version running on my working laptop for example. After installation and then you can launch the software. Choose Run Demo Mode to have a try. The demonstration version has all the same features as a licensed version, but is limited to 30 data points. If you would like to use FieldGenius in your surveying project, please contact Tersus Sales Team (sales@tersus-gnss.com) or your sales contacts for purchase license.



Step 3: Create a new project

Click New Project.

🔏 Fie	dGenius	- D X		
Pro	oject Manager	🕌 83 📀		
	C:\Users\wellcores\Documents\Mid Projects\	croSurvey\FieldGenius\FG		
	Project	Date 🗸		
6	Nick	2019/1/4		
6	FG Sample	2018/11/15		
V	Open Review & Open	New Project Exit		

Key in your project name and then click **Project Settings**.

🔏 FieldGenius					225		×
New Pr	oject						00
Name:		David GNS	5S Testing	1			
Curren	t Project S	Settings	-				
Units Proje Direc Coord Verti Raw F AutoM AutoM	: METER ct Scale tion Forr inate Sys cal Systa ile Type ap File: ap Templa	Factor: mat: Nort stem: UTM em: Ellip : NOT ENC survey.c ate: surv	1.000000 h Azimuth 83-11 soidal (WGS: RYPTED sv ey.csv	34) ^		~	
	ОК		Project Settings	X	Ca	ancel	

In Project Settings, you can see several settings. Normally, you need to configure the Coordinate System when you first time use this software.





You can click **Edit List** to select pre-defined coordinate system or create your own ones. Then click **OK** for next step.

🔏 FieldGenius				<u>22</u> 5		×		
Coordin	nate Sys	tem Settings		H	5 00	?		
Horizonta	1							
System	Beijing54	.GK-13	•	Edi	t List			
	UTM83-1			1				
Info	Beijing54	.GK-13						
	Beijing 1954, EPSG:6214 Krassovsky - 1940/1948 More Info							
Vortical								
Vertical						_		
System Ellipsoidal (WGS84)								
	1							
	ОК	Save As Default	X	C	ancel			

Then click **OK** to finish Project Settings

🐳 FieldGer	nius					2121	\times
Proje	ect Settin	ngs					000
-	Å		Unit	s an <mark>d Sca</mark> l	le		
e			Coord	in <mark>ate Sys</mark> t	em		
-			Pro	oject Files			
	A DECEMBER OF A		Projec	t Informat	tion		
	(ОК	1	X	c	ancel	

Then Click **OK** to finish project creation.

💜 FieldGenius		- 🗆 X
New Proje	ct	<u>></u> 00
Name:	David GNSS Testing	
Current Pro	ject Settings	
Units: ME Project S Direction Coordinat Vertical Raw File	TER cale Factor: 1.000000 Format: North Azimuth e System: Beijing54.GK-13 System: Ellipsoidal (WGS84) Type: NOT ENCRYPTED	^
AutoMap F AutoMap T	ile: survey.csv emplate: survey.csv	~
	K Project Settings	Cancel



Step 4: Connect David GNSS Receiver

Click Select Instrument



Choose GNSS Rover, click Add to add a new instrument profile.

🗳 FieldGenius		- 🗆 X
Instrument Selectio	n	à 🕄 🔇
Instrument Type C Total Station C GNSS Reference GNSS Rover Disto/Laser Simulator None	Instrument Profile Rover Sample Add Delete Profiles contain equip settings and measure tolerances.	- Edit ment ment
□ Always Auto-Reconnect		
Connect	C C	lose

Input Profile Name, for exsample David GNSS Receiver, and click Save.

🐳 FieldGenius	<u>202</u> 4	\times
New Instrument Profile		000
Profile Name:		
David GNSS Receiver		
Save 🔀	Cancel	



Choose David GNSS Receiver and click Edit

🐳 FieldGenius	- 🗆 🗙
Instrument Selectio	n 🚵 😂 📀
Instrument Type C Total Station C GNSS Reference GNSS Rover Disto/Laser Simulator None	Instrument Profile David GNSS Receiver
🗆 Always Auto-Reconnect	
Connect	Close

You will see a lot of settings in this page, but the first one, Model and Communication is a must you need to configure, So, click **Model and Communication**

🔏 FieldGeniu	15		- 🗆 X
GNSS	Profile))))))
	Model and Communication		Active Tolerance: [Autonomous]
	Tolerance Setting: [Autonomous]		Antenna Height
2	Tolerance Setting: [RTK Float]		Auto Recording
3	Tolerance Setting: [RTK Fixed]		
X		Close	

Choose Tersus in Make and David in Model. Choose Bluetooth in Port. Then click **Bluetooth Device List.**

FieldGenius		– 🗆 X
Model a	nd Communication	
Make	Tersus Model Status: Not Connected	David
Port	Bluetooth	•
Device		•
	Bluetooth De	evice List
Carl I	Connect	Close



Click Search to search Bluetooth of David Receiver.

🗳 FieldGenius			- D X
Bluetooth D	evice List		
Name	Bluetooth ID	PIN	
Se	Bluetooth Searc	: h Devices	
Search	Edit		Delete
X	Close		

Then Choose the Bluetooth of David. It starts with BT420. Then the number 00094 are the last 5 number of SN of Bluetooth. You can find it on Bluetooth device.

🗳 FieldGenius	— 🗆 X
Select Bluetooth Devic	ce 🛁 😂
FZ-B2D	Galaxy C9 Pro
(222228383889)	(14568E60A239)
ANDROID BT	Bose QuietControl 30
(001706C03F76)	(2811A507F604)
LAPTOP-JKSOM8Q2	BT-A0003C
(74E5F999632F)	(0D0018A0003C)
客厅的小米盒子	BT420A-00094-A00152
(1048B1EB089C)	(0D0018A00152)
Refresh List	Cancel

PIN Code is not required, leave it blank, and click OK

🗳 FieldGenius		<u>22</u> 3		\times
New Bluetooth	Device			000
Name:	420A-00094-A00152			
Bluetooth ID:	BT420A-00094-A001			
PIN Code:	- No	t Requ	irec	ł
Leave PIN Code bl	ank if not required			
ОК		Cancel		



Choose the Bluetooth device and click Connect

🗘 tislatessius		
• Heiddenids		
Model ar	nd Communication	
Make	Tersus <u>Model</u> David	•
	Status: Not Connected	
		1
Port	Bluetooth	•
Device	BT420A-00094-A00152	•
	Bluetooth Device L	ist
	/	
Card I	Connect 🖌 🔀	Close

As I'm using FieldGenius on Windows 10, the Operation System will give a prompt about Bluetooth. Just click it.

	₽	添加设 点击()	路 以设置	BT42	0A-0()094-A(00152	×
_			цр.		EØ			150%
Μ	^	🔊 🗞	S 😢	1		(d)) 🗲	15:34 2019/1/4	5

Click allow to let the OS to pair the Bluetooth with David.

设置		- 🗆 X
\$ 命 主页	蓝牙和其他设备	
直找设置の	添加蓝牙或其他设备	更快地打开蓝牙
	+	若要在不打开"设置"的情况下开 启"蓝牙" 请打开操作中心,然后选
设备	陈牙	择蓝牙图标。如果想要关闭蓝牙,
	<u>т</u>	请重复上述操作。 获取有关蓝牙的详细信息
XIMULUUVIAL C	现在可以TEAJ TERSUS-INICK 板发现	相关沿案
0 鼠标	鼠标、键盘和笔	设备和打印机
日触摸板	为设备配对 X	士卒沿军
圖 输入		显示设置
参 笔和 Windows Ink	B1420A-00094-A00152 想要当此 Windows 设备靠C对。要无许此操作吗?	更多蓝牙选项
	允许 取消	通过蓝牙发送或接收文件
(1) 自动通应		
🖞 USB		有疑问?
		获取帮助
1	DLNA-Player-MediaCenter	让 Windows 变得更好
		向我们提供反馈
	FZ-B2D 已配对	
1		
	Galaxy C9 PIO	
	□ 显示使用"迅速配对"进行连接的通知	
	如果选中此选项,则可以在受支持的蓝牙设备位于附近且处于配对 槽式时中海连接到这些沿各	
	1961-0411-0-1251-0-2510公元 0K 篇 6	

Then FieldGenius will connect with David Receiver via Bluetooth, and prompt a window for Link configure.





Step 5: Configure the datalink

If you choose other device and COMM2, it means the David will receive correction data from COMM2. Then you can use radio mode of David. The baud rate of David 2W/460Mhz radio is 38400, so choose 38400 as Baud Rate.

Li	nk Configure	•				00	2
T	Device						^
	Device Type	Other Devic	e 🔨			•	•
	Device Port	СОММ2 🛹	-	Radio		-	•
	Communication	n Paramete	rs				
	Baud Rate	38400 🔶				-	•
	Flow Control	None				-	•
	Correction Dat	a					
	Message Type	RTCM 3 🔶				-	·
	Base Station ID	Any				-	
((1	Conr	nect	X		Close		

If you want to use Internet for data transfer, like working with CORS, you can choose **Data Collector Internet**

N F	ieldGenius			220		\times
Li	nk Configure	•			00	?
Ξ	Device			/		
	Device Type	Data Collec	tor Internet			•
	Device Setup		Press to Se	etup 🔨		
	Correction Dat	a				
	Message Type	RTCM 3				▼
	Base Station ID	Any				▼
	RTCM Transfor	mation				
	Enable					
((1	Coni	nect	X	Close		

Modify the Network settings.

M	obile Settings	5	Same s	00
	Data Source			^
	Source Type	Network		~
	Network Settings	Press to Modify		
	Description			
	Address			
	Port		1	
	Send GGA	No		
	Username			
	Password			~
		ОК		



Key in the IP, Port, Username and Password of the CORS. Choose if the CORS need GGA or not.

S F	ieldGenius			<u>28-</u> 5	\times
N	etwork Se	ervers			00
	Settings				
	Description	CORS			
	Address	60.2C			
	Port	80			
	GGA	•			
	Username	tersu			
	Password	tersu			
					_
2		OK	X	Cancel	

Select the Server you just key in.



Click **OK** to finish setting.

🤏 F	ieldGenius		<u>216</u> 5		×
M	obile Settings	;			00
	Data Source				^
	Source Type	Network		•	•
	Network Settings	Press to Modify			
	Description	CORS			
	Address	60.202			
	Port	801			
	Send GGA	Yes			
	Username	tersus			
	Password	ters			~
		ок 📕			



Then click **Connect** to get correction data.

🐝 F	ieldGenius		- 0	\times		
Li	nk Configure	2				
	Device					
	Device Type	Data Collector Internet		▼		
	Device Setup	Press to Setup				
	Correction Dat	a				
	Message Type	RTCM 3		•		
	Base Station ID	Any		•		
	RTCM Transfor	mation				
	Enable /					
1.						
((1	Conr	nect 📕 🔀 Cl	ose			

Step 6: Go to survey

Please notice that you must set correct antenna height to get correct height reading.



Choose TRSAX3702 if you are using Tersus AX3702 antenna. Use User Defined if you use other antennas. And then key in antenna height.



🔏 FieldGenius		- 🗆 X
Antenna Heigh	t	🗎 🕄 🔮
Model	TRSAX3702	•
Measured Height	TRSAX3702 User Defined	
Measure Point	Bottom of antenna mou	unt -
Offsets		
Measure Point to	ARP Offset - Horizontal	0.0mm
Measure Point to	ARP Offset - Vertical	0.0mm
ARP to APC (L1) C	Offset - Vertical	54.0mm
	OK	

You will see it's already RTK Fixed. Just click this icon and you can store point. Now you can go to the field to be a surveying genius!





🗳 FieldGenius		- 🗆 X
GNSS Measur	ement	🛁 😂 🔇
Solution: R Satellites: 2 PDOP: 1 Real Time Status: Horizontal StdDev Vertical StdDev:	Accepted Accepted 0.006m 0.004m	
Post Process Status: Total Time:	Position	Cancel

🔏 FieldGenius				<u>195</u> 4		
Store Point				à 🕄 📀		
Point ID	1	2		5"	*	
Description		List				
Northing	4588474.601m		Review Measurement			
Easting	18147763.879m		GIS	GIS Attributes		
Elevation	38.399m		,		and a	
Antenna Hgt	1.800m		Auvanceu			
Store As	GNSS Point	it 🔹			Enter Note	
		2				
	Store Pnt		Ca	Cancel		

There are lots of features in FieldGenius, you can check them here https://www.microsurvey.com/products/fieldgenius/

Thank you!

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