CONFIGURATION MANUAL

SBGuidance

Slingshot Field Hub 2.0

016-8000-045 Rev. A

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1. Sign up Slingshot Field Hub

The next steps have to be completed to sign up a Slingshot Field Hub in the Slingshot Portal:

1. Open the link: https://portal.ravenSlingshot.com/
2. Login with username and password. When you don't have an account, create one by using *Request Account* (Figure 1). To make sure the account has the right permissions, please contact SBG.
3. When the account is correct and you are logged in, open Manage > Subscriptions > New Activation (Figure 2).
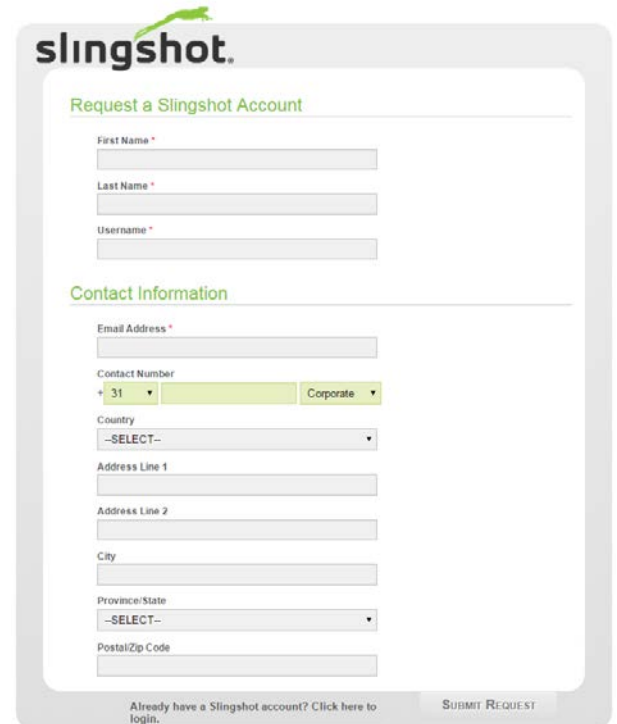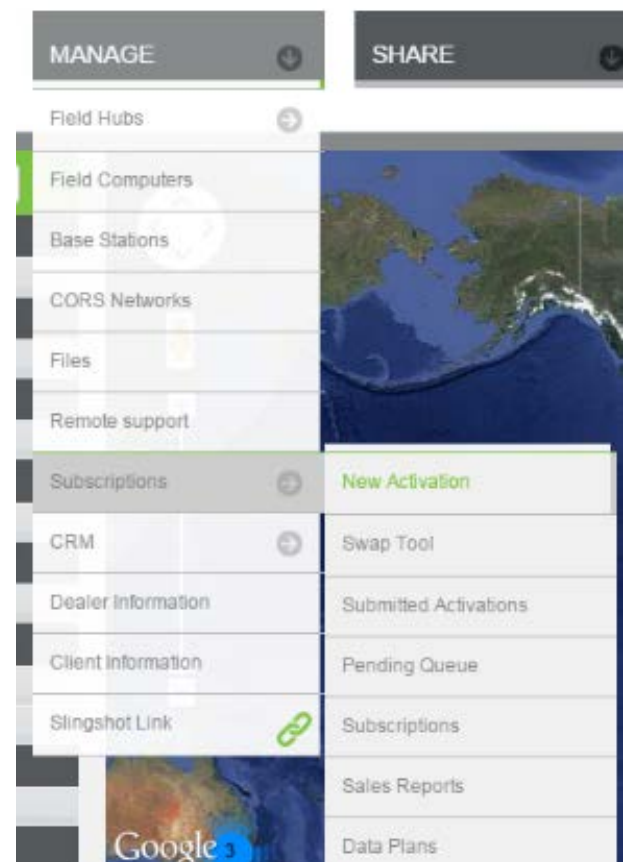

Figure 1 Request Slingshot account

Figure 2 New activation Slingshot field hub.

4. A new wizard (Start activation) is now open, select *Field Hub Activation* (Figure 3).
5. A new wizard opens, enter the next information; (Figure 4):

- *Modem ID/IMEI*: This number is on the Slingshot Field Hub
- *API services*. Do not select an unlock part.
- *Cellular Data*: Select *No Data Activation Required*.
- *Correction Unlock Options:* Select *Yes*.
- After the checkmark 'yes' is set, the wizard expects more information for the Correction Unlock.
- Select the option *CORS RTK (*Figure 5*)*. After this option is selected the wizard expands again (Figure 5). See next page.
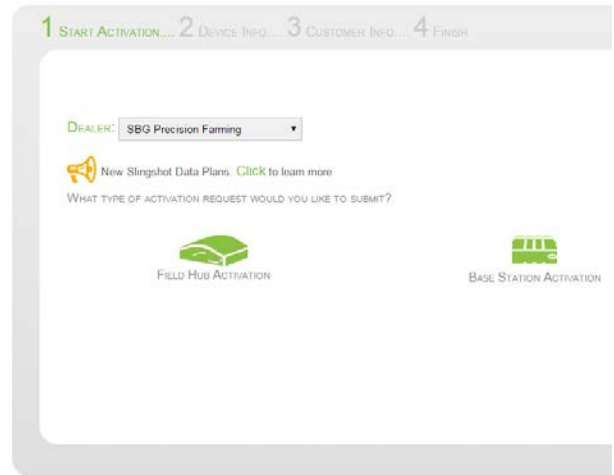

Figure 3 Step 1 activation procedure Slingshot field hub.

Figure 4 Step 2 activation procedure Slingshot field hub.

- *CORS Network:* Enter the Correction Data Supplier.
- *Correction Format:* Choose the format of the Correction Signal.
- *Mount point:* Choose the mount point or stream of the network.
- *Username:* Type the username of the CORS network for the customer.
- *Password:* Type the password of the CORS network for the customer.
- *Dealer PO#:* Fill in 0000.

CORRECTION UNLOCK OPTIONS

Do you want to unlock RTK, CORS, or Slingshot GS services for this field hub? * Part #077-7000-028

○ Yes
○ No

Which service type would you like to set-up for your default correction profile?

○ Slingshot RTK
● CORS RTK
○ Slingshot GS

CORS PROFILE INFORMATION

Please enter the information below to create the CORS Profile for this field hub.

CORS Network

| MoveRTK (NL) ▼ |

Correction Format *

| RTCMv3 ▼ |

Mount Point *

| VRS_GG_RTCM3.0 ▼ |

Username *

| mrsbg01 |

Password *

| ▬▬▬ |

DEALER PO #

| 0000 |

SAVE DEVICE

Figure 5 Step 2 activation procedure Slingshot field hub (continuation).

After the data has been entered, select *Save Device* and press *next*. A new wizard with the active information is opened (Figure 6). After a check of the entered data press *next* again.

DEVICES TO ACTIVATE

DEVICE	FEATURE	DETAILS	REQUIRE
353567042637059	• Correction Unlock • File Transfer *free* • Fleet View Basic *free* • Internet Access *free* • Remote Support *free*	CORS Network: MoveRTK (NL) rtcmv3: VRS_GG_RTCM3.0 Username: mr01 Password: 0000 Dealer PO#: No_Invoice_SBG	No

ADD ANOTHER DEVICE

Figure 6 Activate information.

Step 3 of the activation is to add a customer to the Slingshot Field Hub. At the top of this step is the name of the dealer, please check this before a customer is added.

If the name of the dealer is correct, fill in the customer information. When the customer is already a Slingshot Customer, you can search in the list of existing customers. When it is a new Slingshot customer, enter the information (Figure 7). It is needed to fill in all the information before the step can be finished. Select *Next* on the bottom of the screen, in the last step (*Step 4, Figure 8*) nothing has to be entered. Select *Finish* to close the activation procedure.

Figure 7 Step 3 of the activation procedure

Figure 8 Step 4 of the activation procedure

2. Mounting and wiring Slingshot Field Hub

The Slingshot Field Hub is mounted on the backside of the terminal by using a standard bracket. When it is mounted, six cables need to be connected. Power, Diversity, GPS, Antenna, Ethernet and RS-232 (Figure 9).
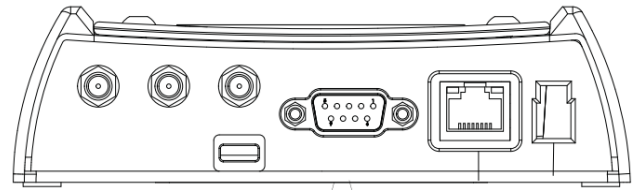

Figure 9 Connections at the backside of the Slingshot

2.1. Mounting antennas

By using a Slingshot Field Hub there are three cables for different antennas, needed for a stable operation (see Figure 10).

The two Laird (GSM) antennas needed to be connected to Diversity and Antenna. The mounting point 'GPS' is for the black GPS-patch antenna. Those three antennas needs to be mounted on the roof of the machine.

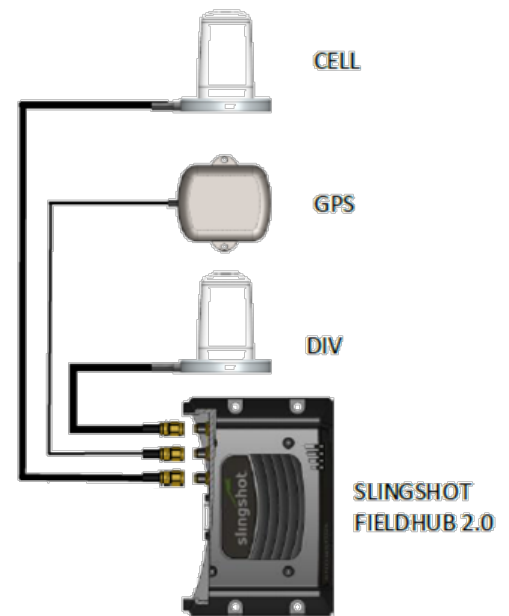> ! It is necessary to mount the antennas on the roof, with a clear view upwards.

Figure 10 Connections at the Slingshot Field Hub to the outside of the cabin

2.2. Connections in the terminal and cable boom

A Slingshot can be mounted on a GeoStar, Viper 4 and Viper 4+.

2.2.1. Viper 4(+) - Viper 4(+) cable boom

To connect the power cable, a standard 3-pin DT connector is mounted in the cable boom of the Viper. The Ethernet cable can be connected straight from the Slingshot to the Viper 4(+).

The serial connector is for the RTK corrections. On a Viper 4(+) cable boom the serial connector with label 'RTK Cor' has to be mounted in the Slingshot Field Hub. See Figure 11 for an overview of this connections.
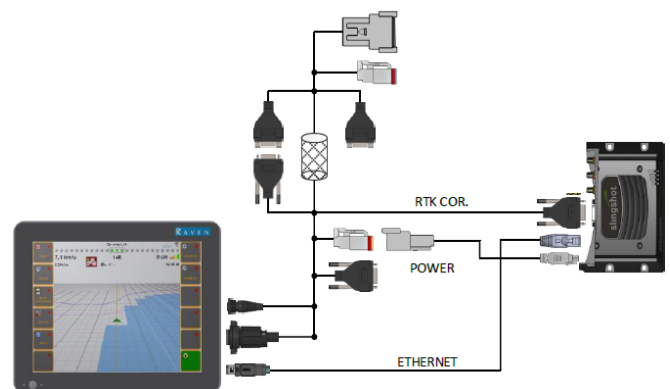

Figure 11 Connections in cabin with Viper 4 terminal harness at Viper 4 terminal.

2.2.2. Viper 4(+) - GeoStar cable boom including adapter cable

With a Viper 4(+) on a GeoStar cable boom incl. adapter cable there is an extra cable needed to mount the serial connector from the Slingshot to the Phoenix connector (with label DiCo In) in the adapter cable (see Figure 12).

The power cable can be mounted to the 3-pin DT connector in the adapter cable. The Ethernet cable can be connected straight from the Slingshot to the Viper 4(+).

See Figure 13 for an overview of these connections.
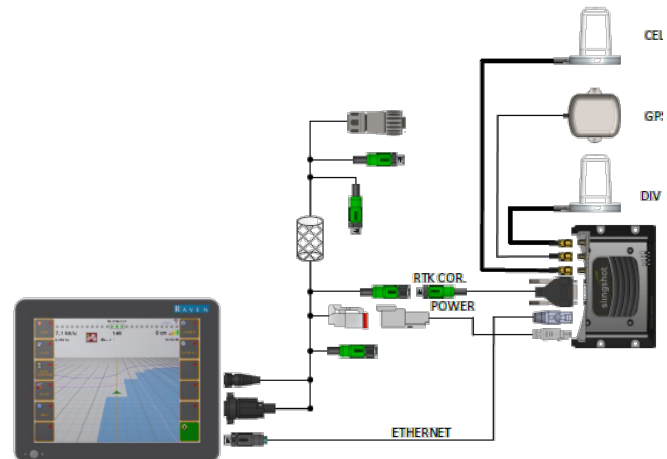

Figure 12   Adapter cable

Figure 13 Connections in the cabin with GeoStar harness + Viper 4 adapter cable at Viper 4 terminal.

2.2.3 GeoStar - GeoStar cable boom

When mounting a Slingshot Field Hub on a GeoStar, an extra adapter cable for the power is needed (SBG10372-05; Amphenol – 3-pin DT connector – Amphenol) and an adapter cable for the RTK corrections (serial – Phoenix connector).

The Ethernet cable needs to be mounted straight into the GeoStar. See Figure 14 for an overview of these connections.
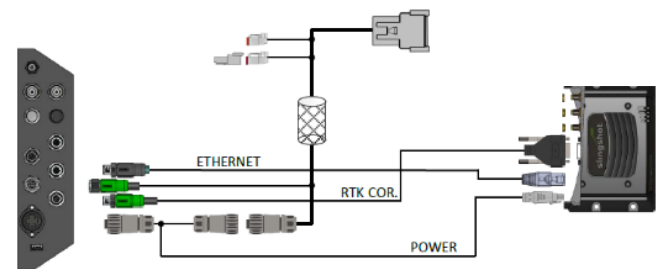

Figure 14 Connections in the cabin with GeoStar harness in a GeoStar terminal.

3. Configure Field Hub

For installing the Field Hub, a SIM card is required. It is possible that password is activated on the SIM card. However, this password must be deleted/deactivated. To do this, put the SIM card in a mobile phone. The SIM card password can be deleted/deactivated in the mobile phone settings.

Mount the SIM in the Slingshot Field Hub by loosening the 4 screws and release the cover of the Field Hub. The SIM can be mounted on the left side (see Figure 15).

Start the application Slingshot Manager, which can be found in the home screen, see Figure 16 (Loader). After starting the application, please make sure version 4.1.2 or newer is installed (version can be found on the left).

Once the Slingshot Manager is started, start a connection with the Slingshot Field Hub by pressing the button with the two red connectors (see Figure 17).

If the Field Hub is connected, the three red crosses will become a green checkmark. Press the checkmark on the downside to confirm the connection (Figure 18).
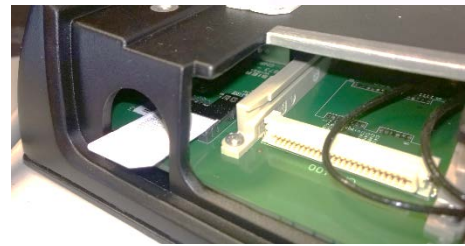
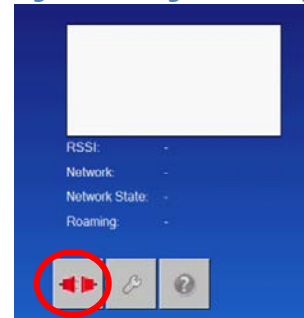**Figure 15 Mount the SIM card**

Figure 16 Slingshot Manager

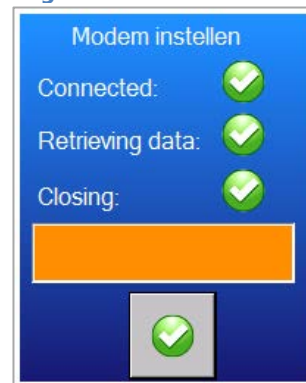**Figure 17 Create a connection**

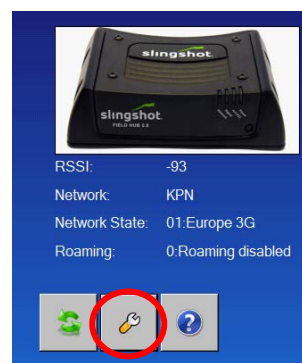**Figure 18 Connected with Field Hub**

Figure 19 Change settings

After a connection has been established, press the button with the 'wrench' on it to change the settings (Figure 19).

The possible settings are shown in Figure 20. Select the country and the network provider from the internet signal. If the used provider is not in the list, please only fill in the APN (always needed), Username (if needed) and Password (if needed, varies per provider).

Mode, Band and Roam can be set on 0 but it depends on preferences. SBG systems always use Baudrate 19200.

Figure 20 Settings Slingshot Manager

! *The Username and Password in the Slingshot Manager belongs to the network provider and NOT to the correction signal account from the customer!*

When all the settings are set they can be stored and verified by pressing the Save Button (Figure 20). The wizard as in Figure 21 appears. It can take up to 4 minutes before the Field Hub has been set with the given settings and has done the reboot.

When all checkmarks on the list are green, press the green checkmark on the bottom to close the setup wizard.

Figure 21 Setup modem

! *The Slingshot Field Hub is rebooting after the setup. This can take up to 4 minutes.*

4. Software settings

Open the SBGuidance Configurator in the terminal and go to Settings > System. In the tab NTRIP, only checkmark the first two (Enabled, Initialize at startup) checkmarks, see Figure 22.

Make sure that in the list of options, Slingshot Field Hub has been selected.
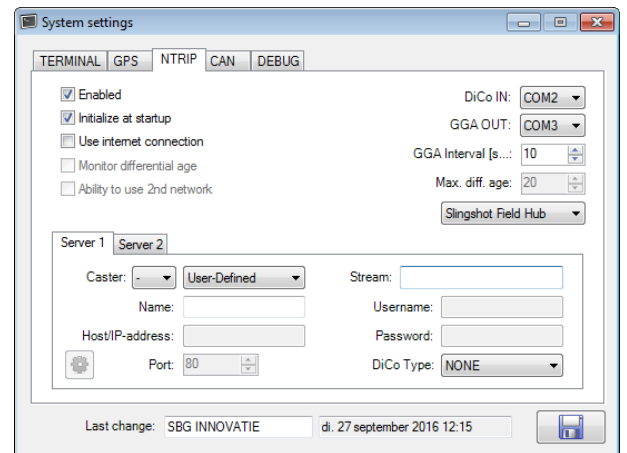
Figure 22 Settings configurator

5. Field Hub startup

When the terminal is started, the Field Hub is powered up automatically. The LED's on the Field Hub (see Figure 23) are lighting/flashing. Table 1 (see next page) shows the meaning of the colours, solid or blink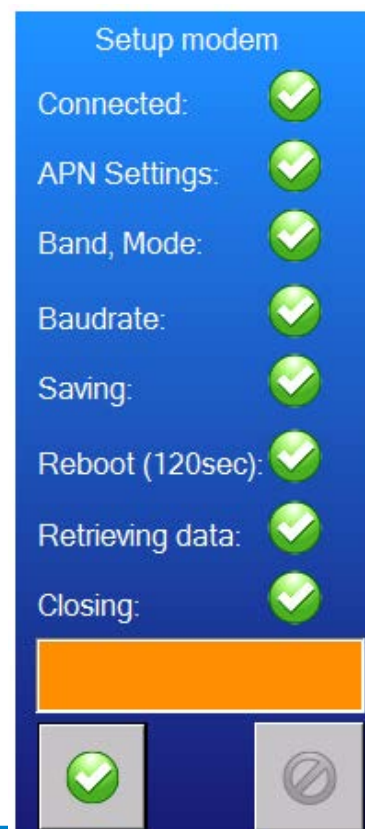ing per LED. The Slingshot Field Hub functions optimal when one of the light green and bold statuses is shown. A status which is only light green but not bold, should also work properly, however, the green and bold statuses show an optimum operation of the Field Hub.

Figure 23 LED Slingshot 2.0

Table 1 LED statuses Slingshot Field Hub

LED name	LED Status	Description
Power	Solid Green	The Field Hub is powered on
	Solid green with yellow flashing every four seconds	**The Field Hub has a fixed GPS signal**
	Solid yellow	The Field Hub ignition power is off and the Field Hub will shut down soon
	Solid red	The Field Hub is not operational
ACT/232	Flashing yellow	Data is being transmitted or received over the serial port and WAN interface at the same time
	Flashing red	Data is being transmitted or received over the serial port
	Flashing green	Data is being transmitted or received over the WAN interface
	Flashing yellow / red / green	**Data is being transmitted or received over the serial port and the WAN interface simultaneously**
Signal	**Solid green**	**The cellular signal is strong (RSSI >-85 dBm)**
	Solid yellow	The cellular signal is marginal (RSSI -100 dBm < RSSI < -85dBm)
	Solid red	The cellular signal is poor (RSSI -110 dBm < RSSI < -100 dBm)
	Flashing red	No cellular signal is available (RSSI <-110 dBm)
Network	**Solid green**	**The network is ready and LTE service is available**
	Flashing green	The network is ready and LTE service is roaming
	Flashing yellow / green	The network is ready, 2G or 3G service is available
	Flashing yellow / green / off	The network is ready, LTE service is not on, and roaming 2G or 3G
	Solid yellow	Connecting to the network
	Flashing yellow	No service is available
	Solid red	The link to the network is down, no cellular network is present
	Flashing red	Authentication/negotiation has failed (EV-DO only)

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6. Operating errors in the field

No Signal LED (flashing red);

- There is no cellular signal.
  - o Check the connection and the mounting of the Laird-antennas
  - o Is the SIM-card mounted correct?
  - o Is the SIM-card active? Check at the cellular provider or check in a mobile phone.

No GPS (power LED is not flashing yellow):

- The Field Hub have not received any GPS-signal from the GPS patch antenna (without GPS, no RTK signals are being sent out).
  - o Is the small Slingshot GPS patch-antenna (Figure 24) mounted and connected correct?
  - o Does the GPS patch-antenna free sight (mounted on the roof?)
  - o Is the antenna or the cable from the antenna damaged?

Figure 24 GPS-antenna Field Hub

Act/232 doesn't blink correct;

- The Field Hub does have internet but it doesn't send out correction signals;
  - o Check the account details at the Slingshot portal (is the account filled in properly?).
  - o Is the correction signal account active yet?
  - o Try a restart of the Field Hub.

All the LED's light up or blink correct, but there is no RTK:

- Is the cabling correct?
- Baudrate in the Slingshot Manager juist ingesteld (for the SBG system it must be 19200)?
- Are the settings in SBGuidance correct (SBGuidance configurator)?