



iNetVu® 1200/1000 Flyaway User Manual

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1. Introduction

1.1. About This Manual

This manual explains the iNetVu® Flyaway System Installation and Operation. An electronic version of this manual is included on the iNetVu® CD that came with your system.

1.2. System Overview

Equipped to work with the iNetVu® 7000 Controller, the iNetVu® Flyaway antenna is an easily assembled, rugged and reliable product for automatic satellite acquisition. This lightweight antenna is a rapidly deployable unit that is ideal for applications that require satellite communication over Ku-Band. The Flyaway empowers users with the ability to stop anywhere there exists satellite coverage and access Internet at broadband speeds.

The 1.2M Flyaway System comes with a protective case that has been designed to be airline checkable. Without the use of any tools, the Flyaway could be field assembled and operational in less than 10 minutes by one person.



Fig. 1: iNetVu® 1200/1000 Flyaway

The iNetVu® Flyaway system offers the following additional capabilities and features:

- 3-Axes DC motor drive system
- Highly reliable linear actuator to control elevation
- Satellite acquisition within 5 minutes (under normal operating conditions)
- Compatible with any configured satellite over the Ku Band
- Fully automatic, software controlled satellite acquisition
- Optimized signal reception and transmission
- Self-calibrating and tuning after satellite acquisition
- Stand Alone – Satellite Acquisition via DVB (modem independent)
- Integrated with some of the leading satellite service providers available.
- Easily assembled, light-weight carry gear

2. Physical Outline



3. Assembly and Disassembly

3.1. Assembly Procedure

Support Stand Assembly

- 1) Unfold the tripod assembly and lock the leg assemblies into place with the T-Handled threaded knob as pictured below.



- 2) Unlock the two (2) T-Handled threaded knobs gripping the lock plate above the pivot location of the lower reflector assembly. Lift the lock plate, and slide the lower reflector assembly into the pivot as depicted in the figure below.



- 3) Push the lock plate towards the lower reflector assembly, and lock the two (2) threaded knobs.

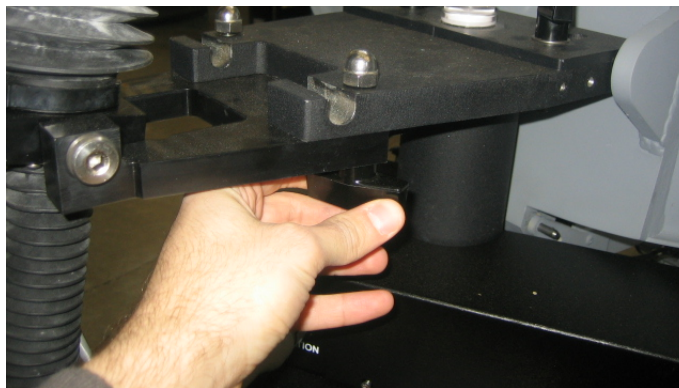


- 4) Attach the elevation motor assembly to the tripod assembly by sliding the elevation bracket between the tripod assembly and the washers of the T-handled threaded knobs. You may have to loosen the knobs before insertion.

When the elevation bracket is locked into place, tighten the two (2) T-handled threaded knobs such that the washer firmly grips the bracket to the tripod assembly.

Facing the back of the reflector, the elevation motor should be facing left.

Note: Avoid twisting the bellows when handling the elevation motor assembly.



- 5) Lock the elevation motor assembly into place by lining the mounting holes between the lower reflector assembly and the elevation motor assembly and inserting the quick release pin as depicted below.



- 6) Attach the upper reflector assembly to the lower reflector assembly making sure the dowel pins fit securely in place.



- 7) Lock the reflectors together using the three (3) latches on the back and on both sides of the reflector.



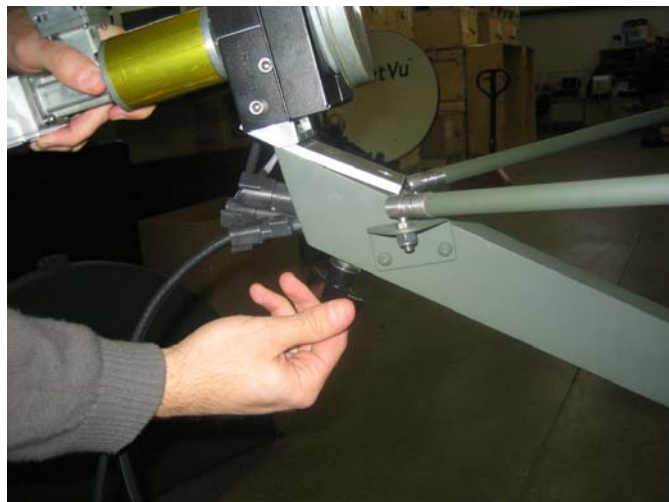
- 8) Attach the feed arm to the lower reflector by lining the mounting holes between the feed arm and the attachment block of the lower reflector and inserting the pin.



- 9) Snap the feed arm strut to the feed arm and reflector sides by retracting the spring-loaded barrel on the ball socket end fitting and snapping it into place



- 10) **If the polarization assembly is not already attached to the feed arm**, attach the feed polarization assembly to the feed arm assembly, and secure it with the T-Handled threaded knob located on the bottom side of the feedarm.



- 11) Connect the RX Cable running through the feedarm to the LNB, and the TX Cable to the BUC.



- 12) Connect the internal Motor/Sensor cable, as well as the labelled RX, and TX coax cables running through the bottom of the feedarm to their corresponding inputs on the connector plate labelled "FEEDARM" on the platform.



- 13) Connect the reflector (inclinometer) and elevation (elevation motor) cables to the area on the connector plate labelled “REFLECTOR” and “ELEVATION”. The cables only fit in one direction.



- 14) Insert the external Motor/Sensor Cable, RX and TX coax cables into the proper location on the connector plate labelled “CONTROLLER”.



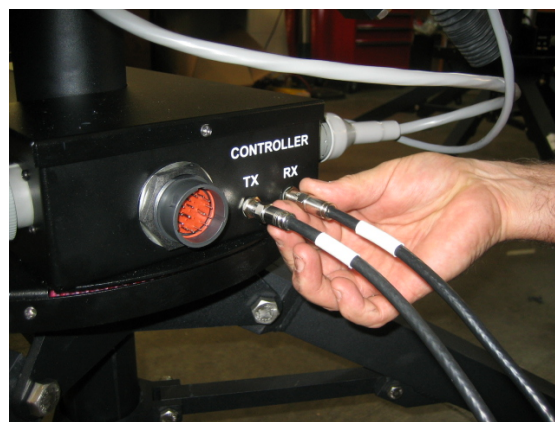
- 15) Follow the “Installing BUC with the Universal Mounting Clamp kit” for mounting the BUC onto the mounting plate of the feed arm.
- 16) See section 4) for controller connectivity based on your desired connection preferences.
- 17) Congratulations, you have successfully assembled the iNetVu® Flyaway System!

3.2. Disassembly Procedure

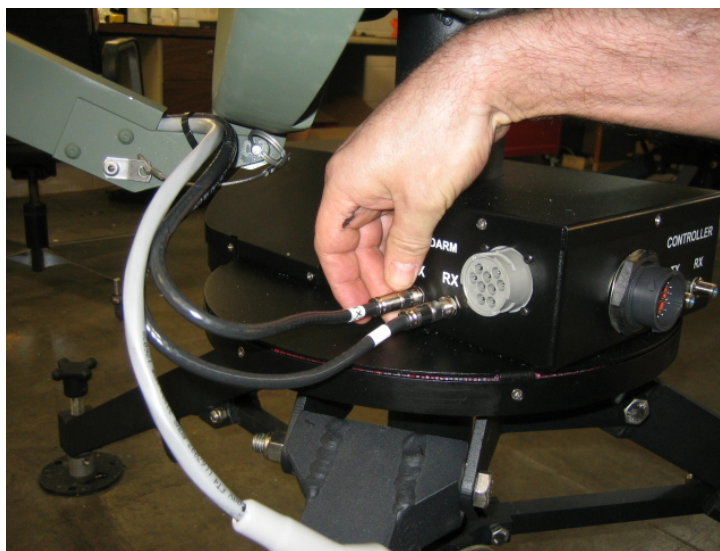
WARNING: ENSURE THE PLATFORM IS STOWED BEFORE DISASSEMBLY

Disconnecting Cables

- 1) Disconnect the External Sensor/Motor cable, RX, and TX coax cables from the connector plate labelled CONTROLLER on the platform.



- 2) Disconnect the internal Motor/Sensor cable, RX, and TX coax cables from the connector plate labelled "FEEDARM" on the platform.



- 3) Disconnect the cables from the connector plate labelled “REFLECTOR” and “ELEVATION”



- 4) Disconnect the RX and TX Coax cables attached to the BUC and LNB

Polarization and Feed Arm Assembly Removal

- 5) Detach the two (2) feedarm struts on both ends by retracting the spring-loaded barrel on the ball socket end fitting and remove.

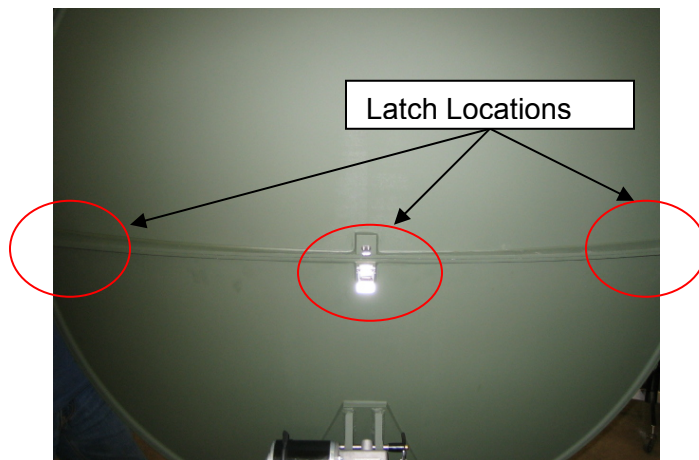


- 6) Gently lower the feedarm, and remove the supporting pin to detach the feedarm from the reflector.



Reflector and Elevation Motor Assembly Removal

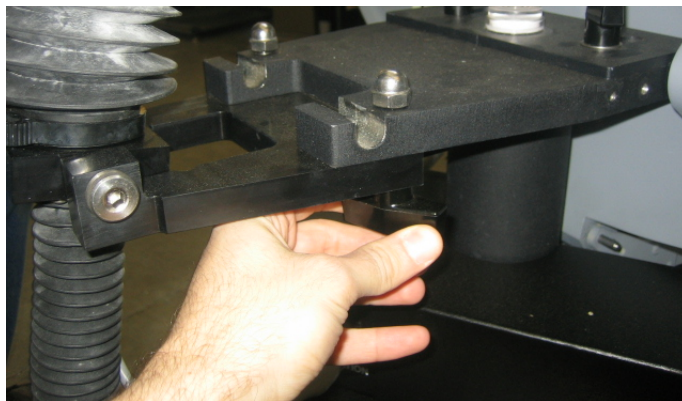
- 7) Unhook the three (3) latches holding the two-piece reflector together, and detach the top reflector assembly.



- 8) Remove the Quick Release T-Pin attaching the elevation motor assembly to the reflector; ensure to hold the lower reflector assembly during removal of the t-pin.



- 9) Unlock the two (2) T-Handle threaded knobs securing the elevation motor assembly to the tripod assembly, and slide the elevation bracket out.



Note: Avoid twisting the bellows covering the actuator when handling the elevation motor assembly.

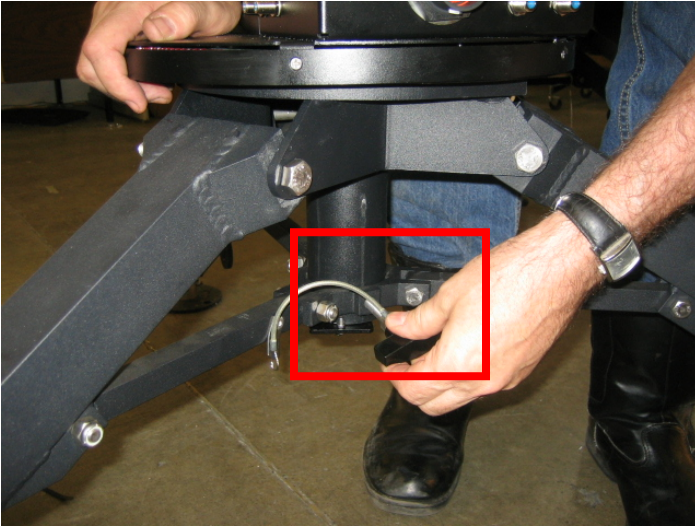
- 10) Unlock the two (2) T-Handle threaded knobs attaching the reflector to the tripod assembly. Ensure to hold the bottom reflector assembly while loosening the knobs.



- 11) Slide the reflector from under the lock plate, and remove from the base tripod assembly.



- 12) Loosen the T-Handle threaded knob locking the leg assemblies, and fold in the tripod assembly.



3.3. Packaging

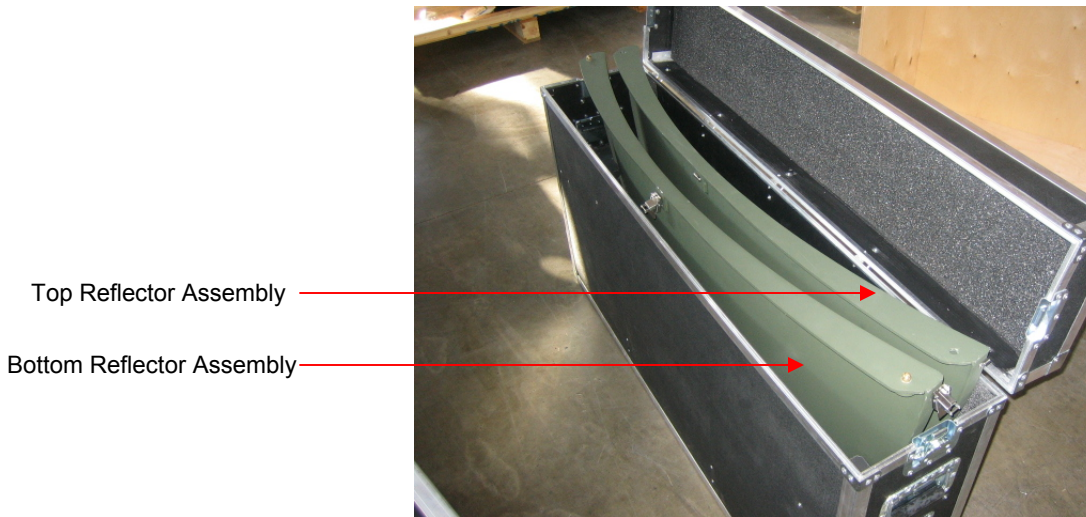
To avoid damaging hardware components during travel and handling, this section will outline the ideal procedure of packaging the iNetVu® 1.2/1.0 Flyaway Antenna systems.

- 1) Place the feed boom and elevation assemblies into the feed case as depicted in the picture below.



- 2) Insert the bottom and top reflector assemblies into the reflector case as depicted in the figure below.

Place the top reflector assembly in the section of the case closest to the pivot joints of the top cover, facing inwards.



- 3) Place the tripod assembly into the tripod case as depicted in the picture below.



- 4) Congratulations you have successfully packaged the iNetVu® Flyaway System.

4. System Connectivity

The iNetVu® 1200/1000 Flyaway Antenna has been built to operate with the iNetVu® 7000 Controller. The typical connection configuration for each service will be the same regardless of the Satellite Modem / VSAT. However, the configuration parameters for Satellite Modem / VSAT Communication will differ depending on service. The user may select the connection that corresponds to his/her preferred system setup prior to configuration.

4.1. Typical Connection – PC Free

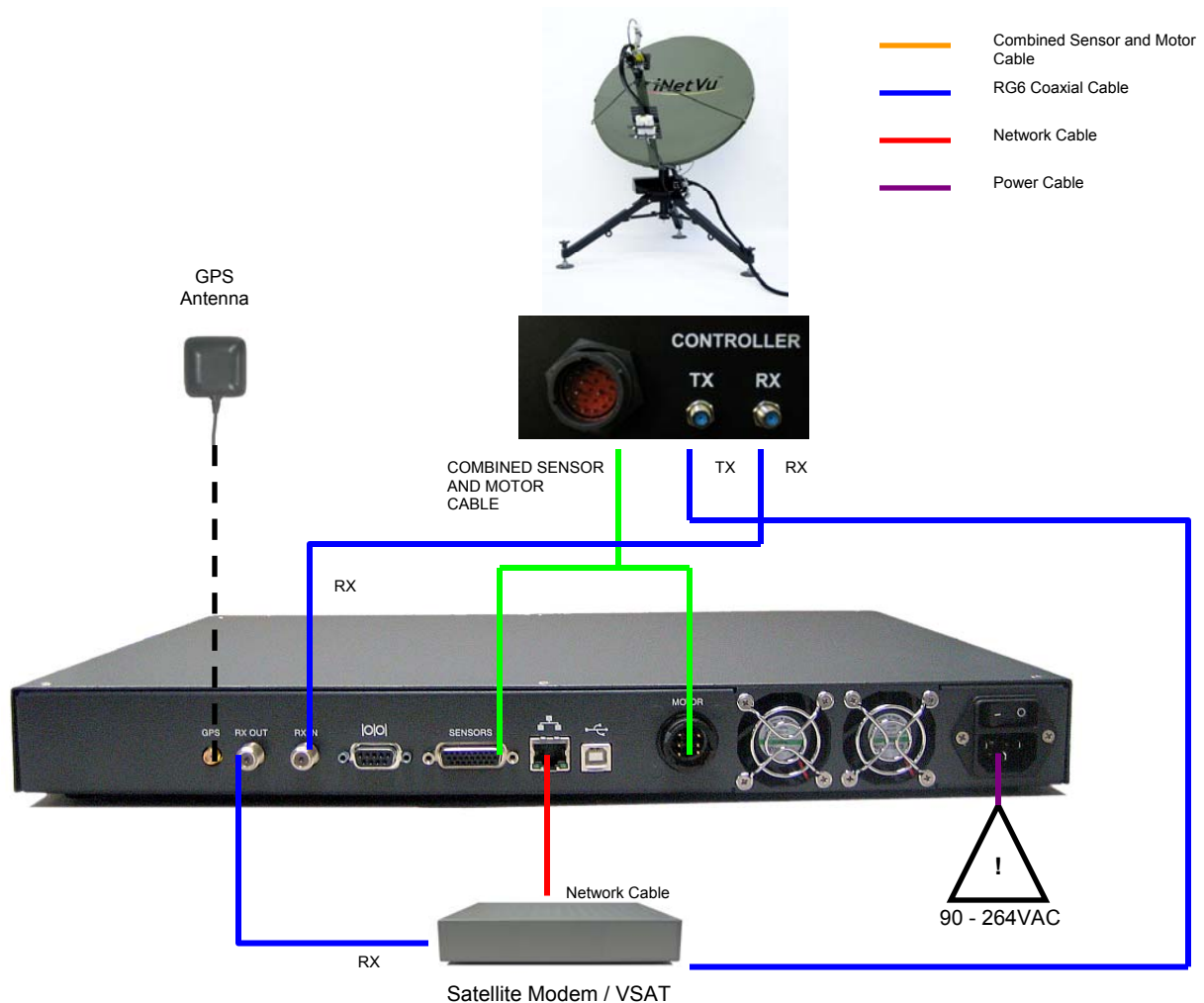


Fig. 2: iNetVu® 7000 Controller PC Free Connection Configuration

4.2. Network/Web Interface Connection

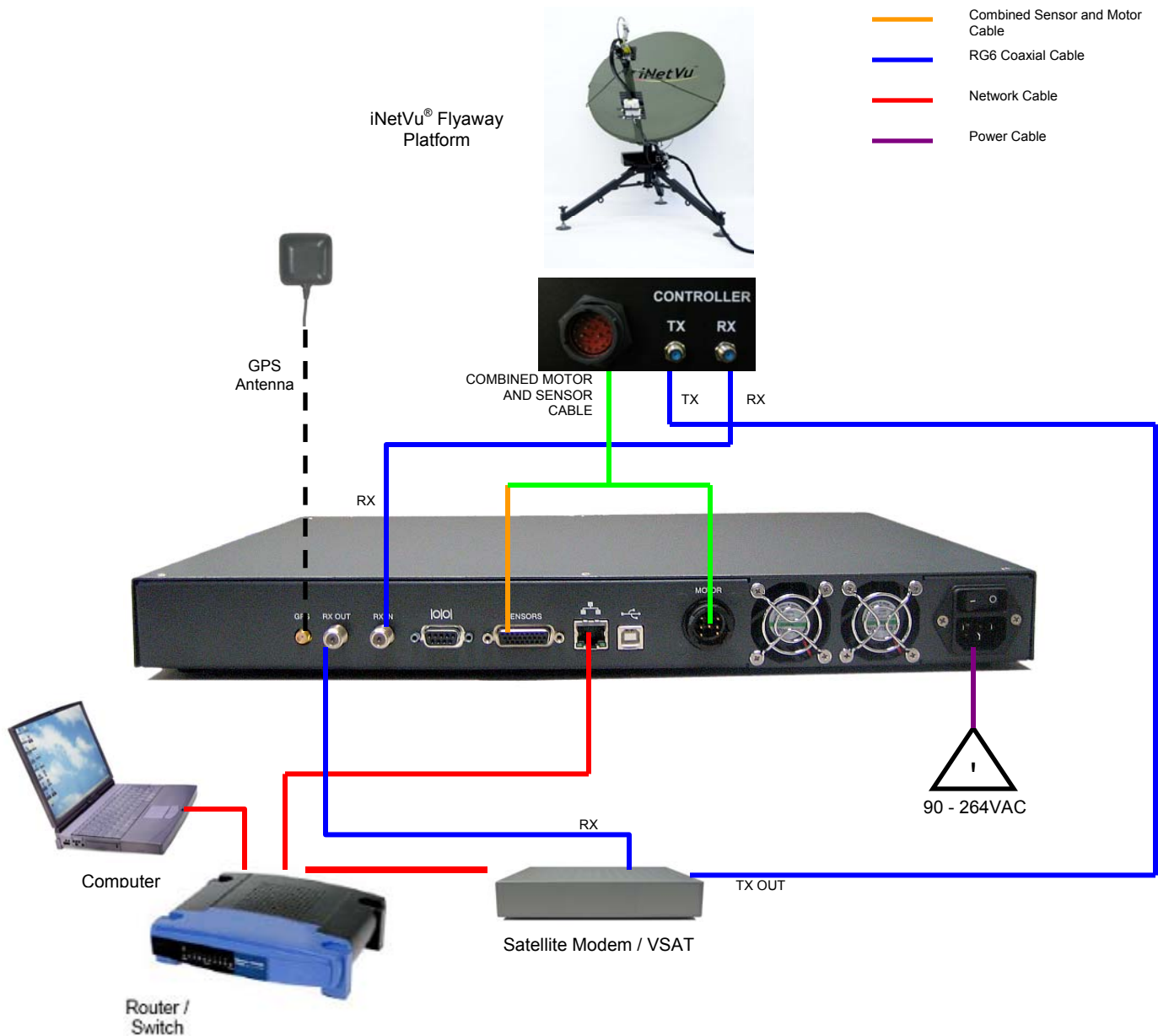


Fig. 3: iNetVu® 7000 Controller Typical Connection Configuration

4.3. Typical USB Communication Interface

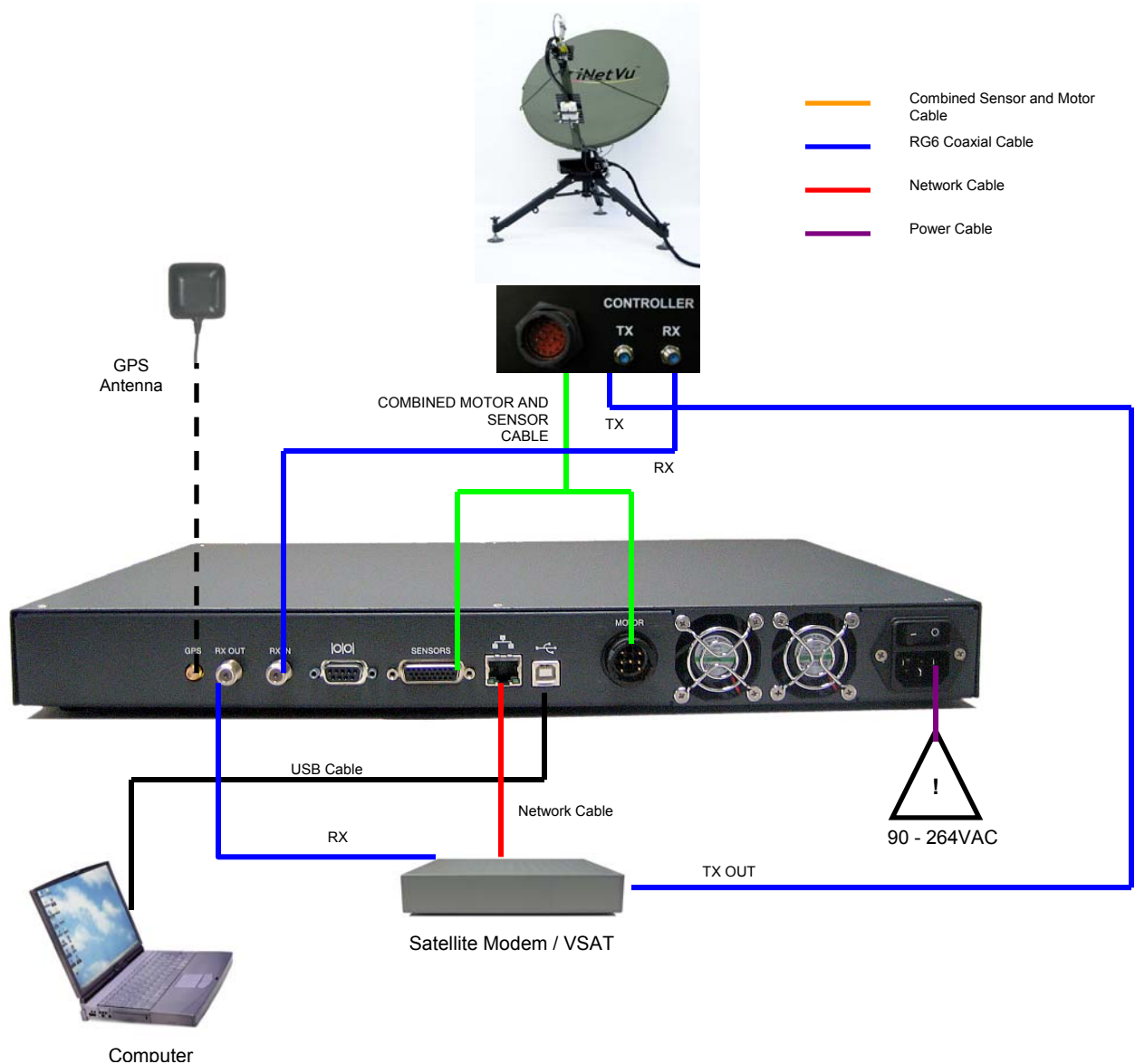
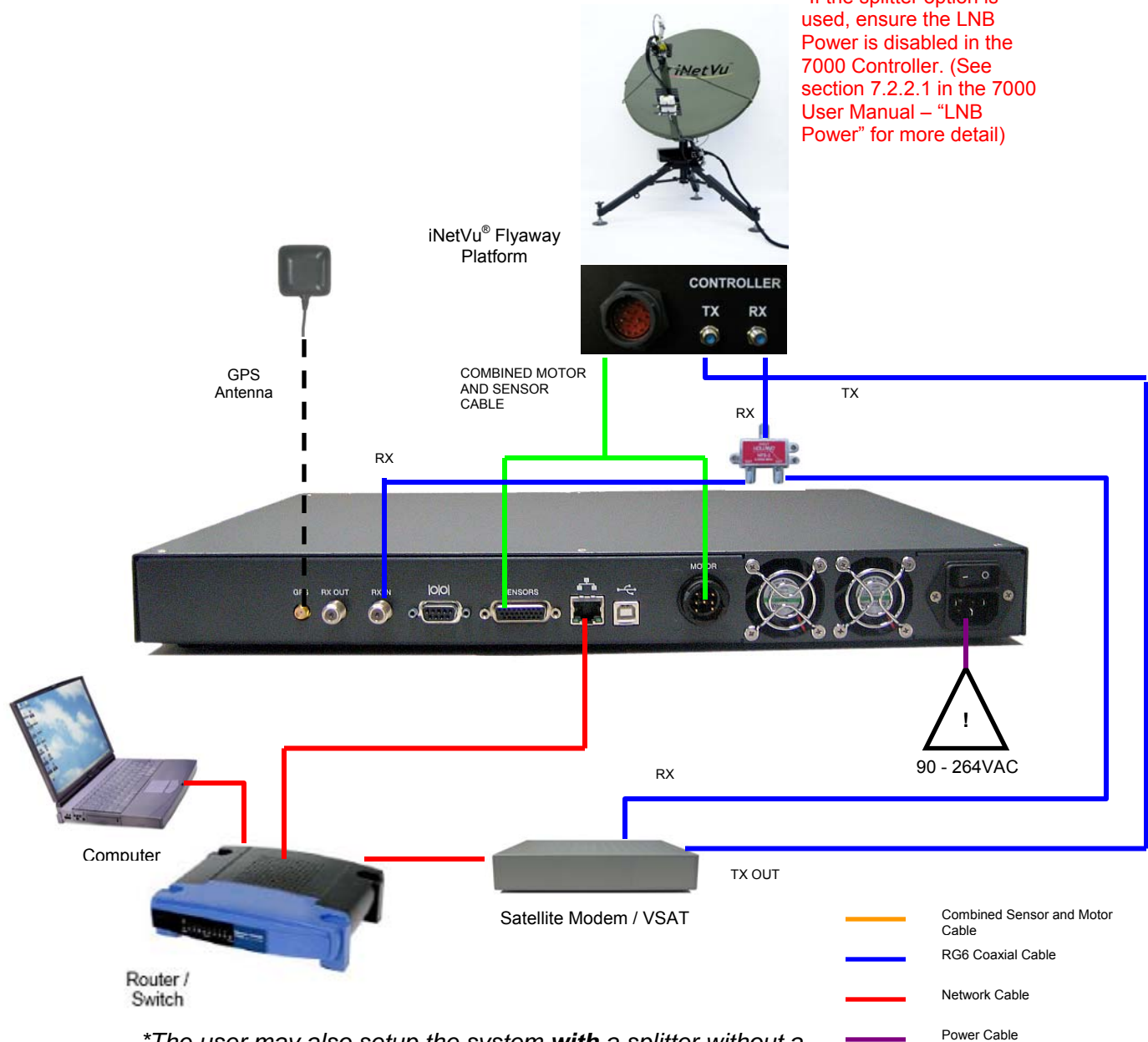


Fig. 4: USB Configuration Interface

4.4. System Diagram with Splitter

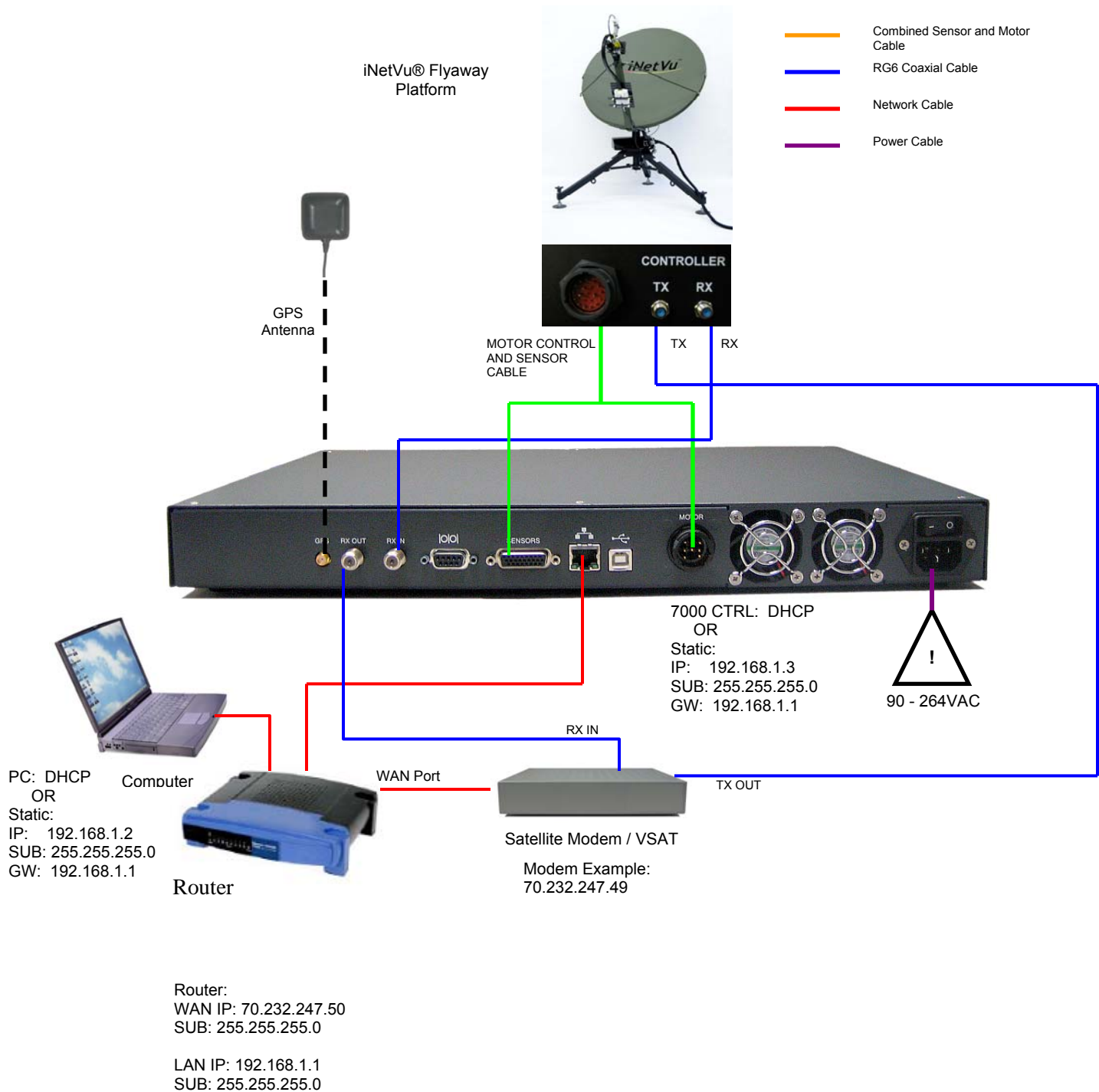
***Please Note:** Using a splitter is optional. If the user does not wish to power the LNB from the Controller, a splitter must be used such that power is passed to the LNB from the VSAT Modem (or alternate power source).

**If the splitter option is used, ensure the LNB Power is disabled in the 7000 Controller. (See section 7.2.2.1 in the 7000 User Manual – “LNB Power” for more detail)*

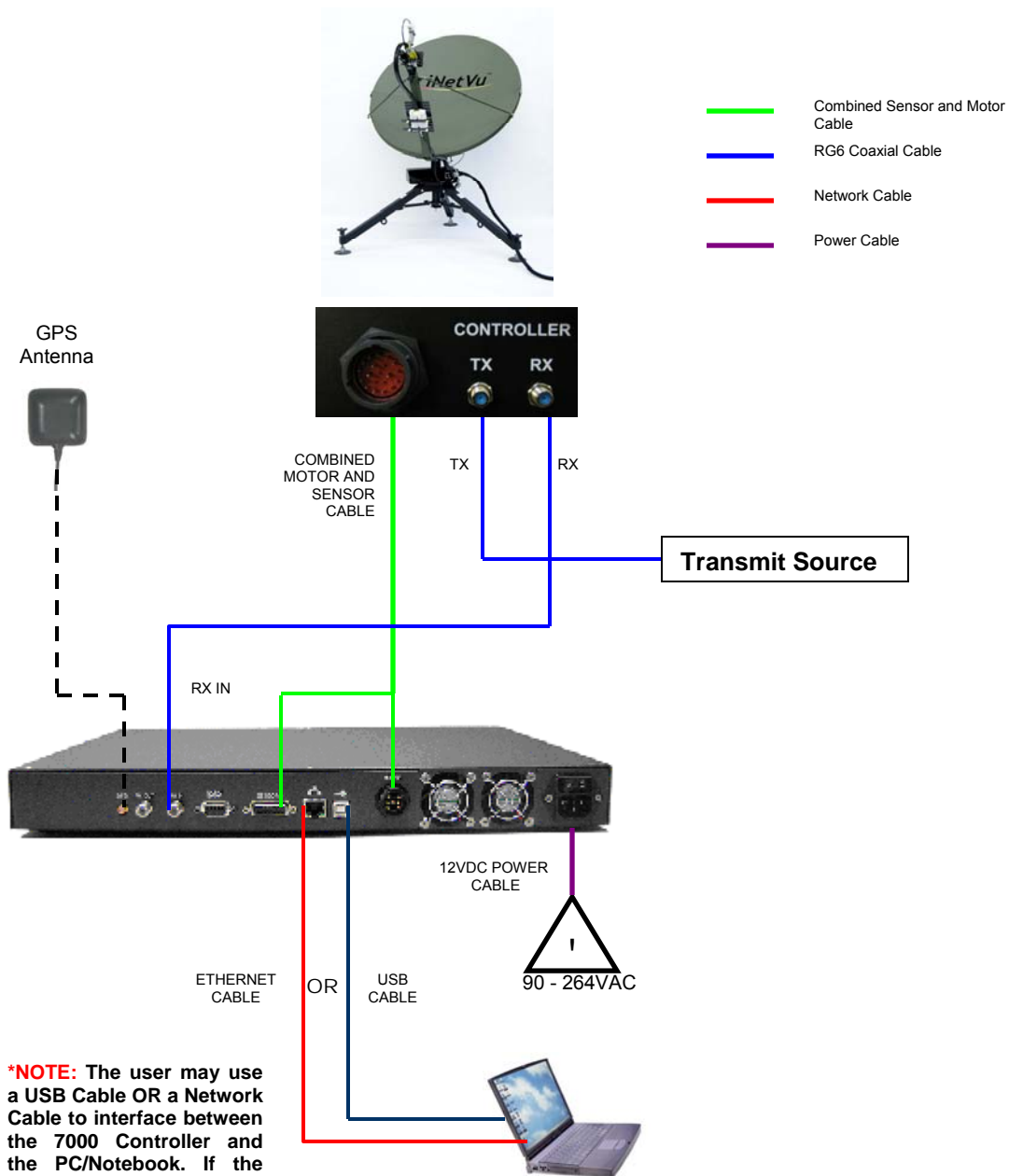


The user may also setup the system **with a splitter without a PC (must configure from LCD) or through USB interface instead of using Ethernet to interface between the PC and the 7000 Controller.*

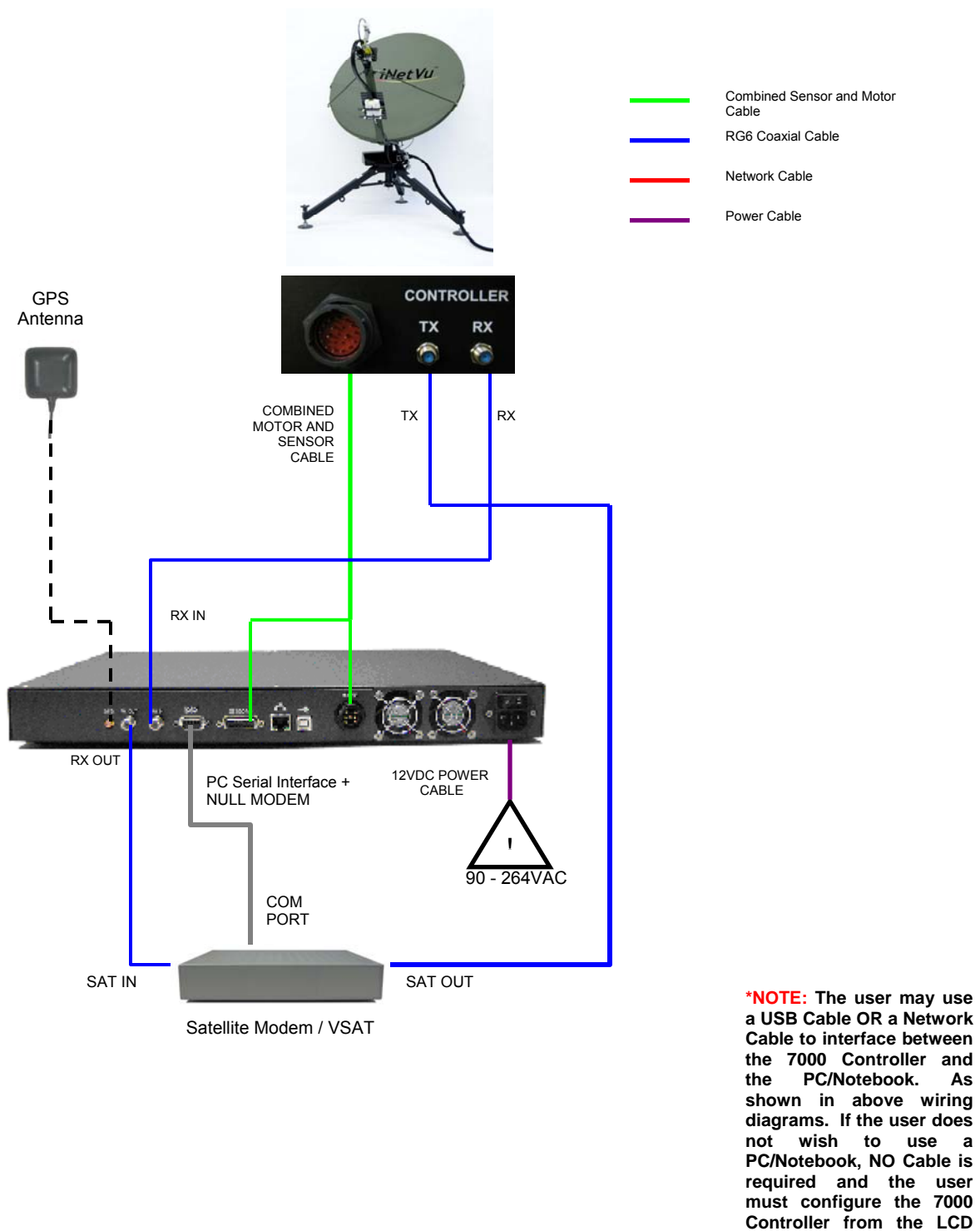
4.5. Router Configuration Example



4.6. Modem Independent Setup (Stand Alone)



4.7. USING MODEM COM PORT



5. iNetVu® 7000 Controller Configuration

5.1. Software Initial Configuration and Verification

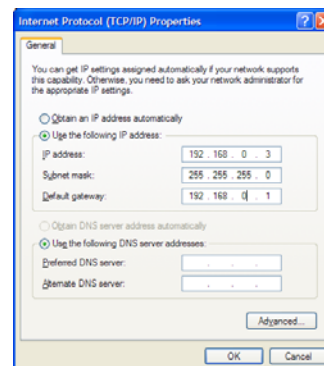
The iNetVu® 7000 Controller allows for the complete setup and configuration of the iNetVu® system through the LCD interface, web or software using the USB or Network Interface. The following is a step-by-step procedure of how to configure the system.

Note: This procedure should be applied only after the system cabling and the network cabling are complete. (See section 4.2 - 4.6 of this manual), and is only required to be done once.

- 1) Adjust the Flyaway platform such that the leg that is NOT labeled is pointed as follows: (two of the legs are labeled “FRONT” and one is not labeled. The legs labeled FRONT cover the search window)
 - If you are located in the Northern Hemisphere (your GPS Latitude is North), the leg not labeled should be pointed north.
 - If you are located in the Southern Hemisphere (your GPS Latitude is South), the leg not labeled should be pointed south
- 2) Power **ON** your PC/Notebook, 7000 Controller and install the iNetVu® 7000 Mobile Software from the installation CD.
- 3) If you are using the network interface to communicate with the 7000 Controller, set the PC/Notebook to the same network as the 7000 Controller and VSAT Modem.
(If you are using the USB interface, you may skip to step (6)).

PC IP address: A.B.C.D+2
Subnet Mask: 255.255.255.X
Gateway: A.B.C.D

The Gateway is usually the Router IP address. If no router is used, it is usually the VSAT Modem IP Address.



- 4) Set the 7000 Controller to the same network as the PC and VSAT Modem.

***Note:** The controller IP should be set in the controller through the LCD interface prior to entering it into the software tool for proper PC to Controller Communication through network interface. **(USB Interface users may skip this step)**

To Configure the IP address on the controller, you must navigate to the CONFIG menu using the LCD Interface. (config menu access password = "password" by default)

- a. Navigate to the "IP" menu and press the "ENTER" button.
- b. Press the '↑' button to allow for modification on the C_IP field and set the IP address of the controller.

If router/modem IP is A.B.C.D, controller IP could be A.B.C.D+1. Press the "ENTER" button once the change is complete. For example, if the Modem/Router IP is 192.168.0.1 then the controller IP could be set to 192.168.0.2.

- c. Press the "Exit" button twice to exit out of the configuration menu. When prompted if you would like to save configuration, press the '↑' button to select "Y" (yes), and press "Enter".

7000 IP: A.B.C.D+1
Subnet Mask: 255.255.255.X (Modem/Router Dependent)
Gateway: A.B.C.D (Router/Modem IP)

- d. Click the "reset" button on the controller.

- 5) Run the iNetVu® 7000 Mobile Software from the shortcut located on the desktop. Advance to the "Configuration" screen, by right clicking on the "Controls" screen, and selecting "Configuration", and enter the controller IP address in the "TCP/IP Settings" section as depicted in the figure below. **USB users may skip this step.**

The screenshot shows the 'Controller Configuration' window. The 'TCP/IP Settings' section is highlighted with a red box. It contains the following fields: IP Address (192.168.0.2), Subnet Mask (255.255.255.0), Default Gateway (192.168.0.1), DNS (192.168.0.1), and an 'Enable DHCP' checkbox. The 'COM Port Configuration' section shows 'Interface' set to 'DEBUG' and 'Baud Rate (bps)' set to '19200'. The 'Inclined Orbit Configuration' section shows 'Re-peak Time' set to 'DIS'. The 'Features' section has four checkboxes: 'Motion Protection', 'Automatic Tx Disable', 'Enable Beep', and 'Unattended Operation'. The 'Log Data and Controller ID' section shows 'Controller ID' as '11797', 'Log Data' as '1H', 'LNB 22KHz Tone' as an unchecked checkbox, and 'LNB_LO' as '10.75'. The 'PC Application' section shows 'PC IP Address' as '192.168.0.2' and 'COM Port' as 'COM11'. At the bottom, there are buttons for 'Configure File', 'Save Config File', 'Read Config File', 'Write EPROM', and 'Send All'. The 'Send All' button is highlighted with a red box.

Click the "Send All" button once the correct IP address is entered.

6) While on the “Configuration” screen, Enter the **Satellite Longitude** and **Sat Offset**

General Case:

1.2/1.0 Flyaway

--Receive Horizontal→ Offset = 0

--Receive Vertical → Offset = 90

The DVB Parameters (TR No., Freq, Sym, Code Rate), and the LNB_P can be left as is. The software will automatically set these parameters after configuration is complete. More detail will be explained in step 12).

7) Under the **Modem** section, set according to your modem specifications:

Type: HNS / iDirect / Viasat / Comtech / Radyne / NA / iPSTAR / Gilat / STM/ Paradise / Tachyon / (NA-is used for stand alone modem independent satellite acquisition)

INF (Interface): HTTP (for HNS Only)
 TELNET (iDirect / Viasat / Comtech Telnet Interface)
 COM (iDirect / Viasat / Comtech / Radyne / STM / Paradise Console Interface)
 SNMP (Radyne Interface)
 UDP
 NA (Must be selected if **NA** is the **Type**)

Rx-Pol (Receive Polarity): H (Horizontal Receive)
 V (Vertical Receive)

Tx-Pol (Transmit Polarity): H (Horizontal Transmit)
 V (Vertical Transmit)

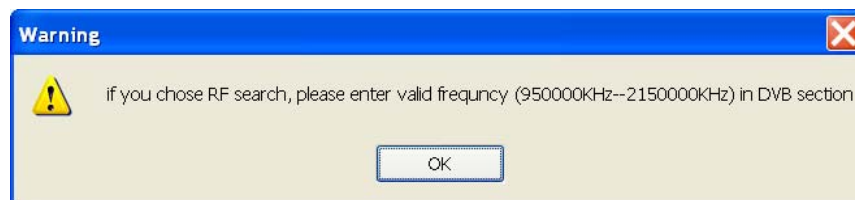
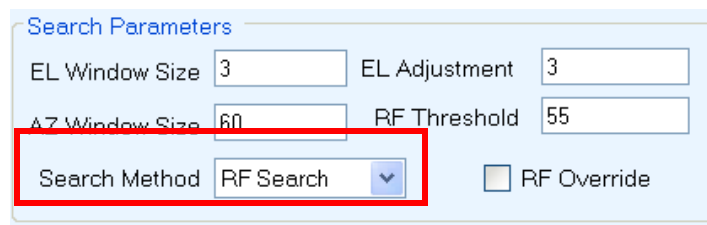
H (Hemisphere): Hemisphere of Operation (East or West)

***Note:** Freq (MHz), Symb (Ksps), IP, and Password fields are **NOT** required for Stand Alone Users (Type: NA), and may be left as is.

Freq (MHz): **(HNS Users Only)** Enter the Modem Frequency
Symb (Ksps): **(HNS Users Only)** Enter the Modem Symbol Rate

DN (Demod No.)	(RADYNE MDX Users ONLY) Enter Demodulator No.
CN (Carrier No.)	(RADYNE MDX Users ONLY) Enter Carrier No.
IP:	Enter the Modem IP Address (Default: 192.168.0.1)
Password:	Enter the Modem Password. If there is no password, leave this field blank.
BR_F	BR300L users Only (Enter Beacon Frequency)
BR_DB	BR300L users Only (Beacon attenuation level: 0dB = max gain)
22K	Enable if 22KHz tone is required for LNB

- 8) **If and only if** the user chooses to search and peak using RF (not DVB), this option can be selected in the “Search Parameters” section on the “Maintenance” screen (valid frequency must be entered in the DVB section of the Configuration screen).



- 9) Under the “Platform” section ensure the platform type and serial numbers are correct. (**A1200P/A1000P** → Flyaway)

10) Under the “TCP/IP Settings” section, enter the following:

IP: Controller IP Address
SUB: Controller Subnet Mask
GW: Controller Gateway
DNS: Disregard
RIP: Disregard

The screenshot shows the 'Controller Configuration' window. It has several sections: 'TCP/IP Settings' (IP Address: 192.168.0.2, Subnet Mask: 255.255.255.0, Default Gateway: 192.168.0.1, DNS: 192.168.0.1, Enable DHCP checkbox), 'COM Port Configuration' (Interface: MODEM, Baud Rate: 9600), 'Inclined Orbit Configuration' (Re-peak Time: DIS), 'Features' (Motion Protection, Automatic Tx Disable, Enable Beep, Unattended Operation checkboxes), 'Log Data and Controller ID' (Controller ID: 11797, Log Data: 1H, LNB 22KHz Tone checkbox, LNB_LO: 10.75), and 'PC Application' (PC IP Address: 192.168.0.2, COM Port: COM1). Red boxes highlight the TCP/IP Settings, COM Port Configuration, and PC Application sections.

Note: PC IP Address must be entered and it must be the same as the controller you want to connect to.

For iDirect/Viasat/Radyne/Comtech/Gilat/STM/Paradise Users using the Console Interface:

In the “COM port Configuration” Enter the following:

COM: Modem
SPEED: Depending on the modem baud rate

*All other fields could be left as is unless specifically desired. See 7000 Manual details for other options

11) Click “**SEND ALL**”. This will send all configured parameters to the controller.

In the Target Satellite Section, the DVB Transponder Frequency, Symbol Rate, FEC Rate and LNB Power information should automatically set and propagate according to the Longitude and Transponder selected.

Note: If you choose to modify the DVB Transponder Information, or the LNB Power, you may do so and click the “**Send All**” button again.

Remember to click on the “**Write EPROM**” button to save the data in the controller.

Satellite Configuration

Target Satellite Reference Satellite (Optional)

Satellite Parameters

Satellite No. 0

Longitude 89.0 W

Offset 90.0

LNB Power 18V

DVB Settings

Transponder No. TR0_H

DVB Type DVB-S1

Frequency(KHz) 1170000

Symbol Rate(Ksps) 30000

FEC Rate 7/8

*if you are using a splitter and powering the LNB from the modem, ensure the LNB_P is **DIS**. If you are powering the LNB from the controller, enter the proper LNB voltage requirements.

12) Congratulations you have successfully configured your iNetVu® Flyaway System. Navigate to the “Advanced Controls” menu, if there are any flashing Red, and Yellow components, stop and troubleshoot. Otherwise, click “Find Satellite”. You should be online within 2-5 minutes.

13) When complete, you may click on the “Stow Antenna” button, wait until the antenna is stowed, and power off your 7000 Controller.

**For more detailed information on the iNetVu® 7000 Controller interfaces, refer to the iNetVu® 7000 Controller Manual.*

6. Appendix

6.1. Appendix 1: Default Limits and Configuration Data Tables

Elevation Offset

	1200/1000 Flyaway
EL OFFSET	31.00

Table 2: Default Elevation Offsets. All values are $\pm 2^\circ$ after Target Calibration.

AZ Potentiometer

	1200/1000 Flyaway
AZ ZERO	140.5

Table 3: Azimuth Potentiometer Default Values

PL Potentiometer

	1200/1000 Flyaway
PL ZERO	190.7

Table 4: Polarization Potentiometer Default Values

Default Platform Speeds and Limits

	PLATFORM TYPES
	1200/1000 Flyaway
EL SLOW	6
EL CURRENT6	4.50
EL CURRENT9	6.50
AZ SLOW	5
AZ CURRENT6	4.0
AZ CURRENT9	10.00
PL SLOW	4
PL CURRENT6	1.5
PL CURRENT9	2.0

Table 5 Default values for speed and current limits