iNetVu® 1.8 Fixed Motorized System User Manual

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www.c-comsat.com
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iNetVu 180 Antenna

1. Introduction

1.1. About This Manual

This manual explains the iNetVu® 1.8m Fixed Motorized 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 Series Controller, the iNetVu® 1.8m Fixed Motorized antenna is a rugged and reliable product for satellite acquisition.

The iNetVu® Fixed Motorized 1.8m system offers the following additional capabilities and features:

- 3-Axes DC motor drive system
- Highly reliable actuators to control elevation and azimuth
- Satellite acquisition within 5 minutes (under normal operating conditions)
- 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.

1.3. Site Selection

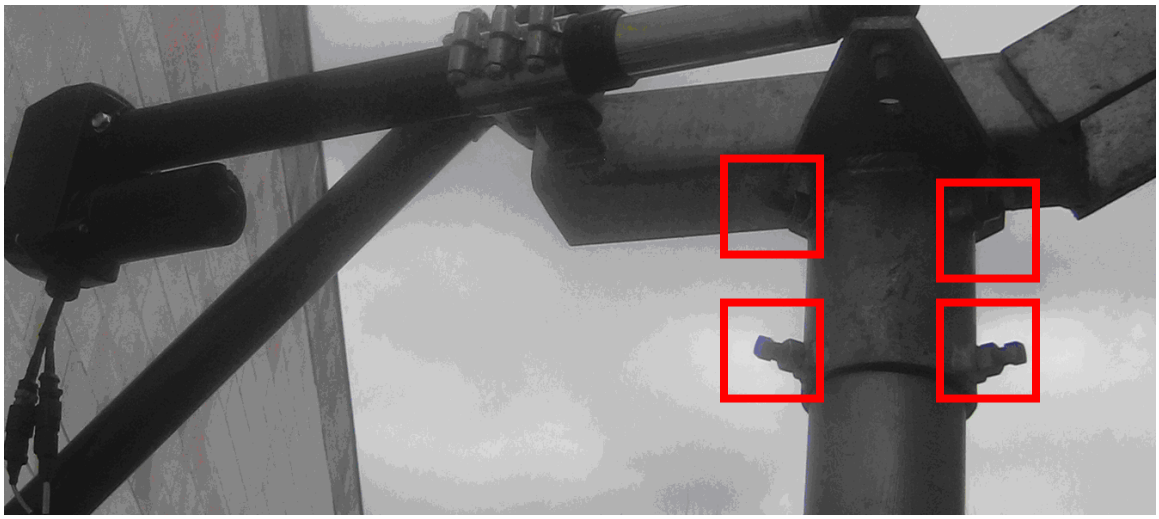
Ensure that the line of site to satellite is clear of any obstructing objects such as trees and buildings. All local building codes should be adhered to. Ensure to face the antenna within 90 degrees of where the satellite is located to allow for automatic operation.

2. Assembly Procedure

1) Install pre-assembled AZ/EL housing with actuators onto the post as depicted in the picture below. Picture shows 4" EL/AZ housing.

    - Ensure you point the front of the housing towards the approximate direction of the satellite

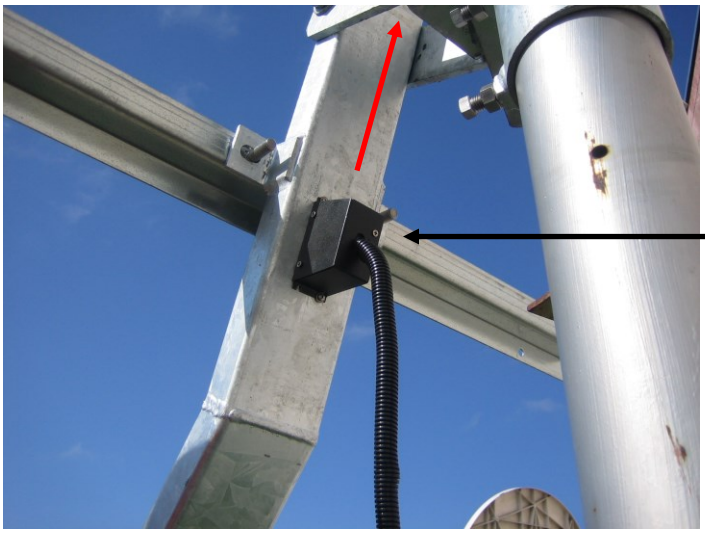
    - Using a ½" wrench tighten the qty (6) collar set screws. Ensure the AZ/EL housing does not rotate after tightening.



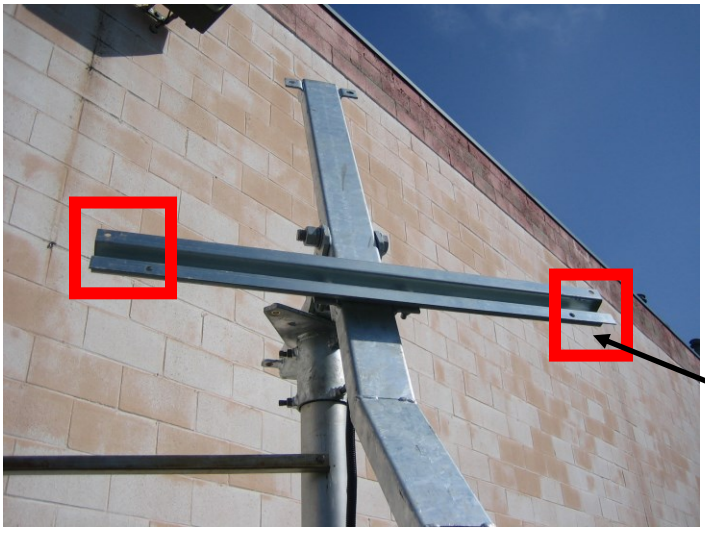
2) Tighten the lock nut until snug such that you are capable of freely moving the elevation frame by hand. The elevation frame should **not** move or wobble freely if left idle.

3) Install the top and bottom reflector support brackets with the ½" bolts.

- Insert the lower reflector support bracket with the bottom holes inset closer to the center. Secure the bottom reflector support to the elevation frame by securing the corresponding lock nuts. For the bottom bracket, ensure the bottom holes are inset as depicted in the picture below.



Note: EL Inclinometer has been moved to the upper part of the EL Arm.



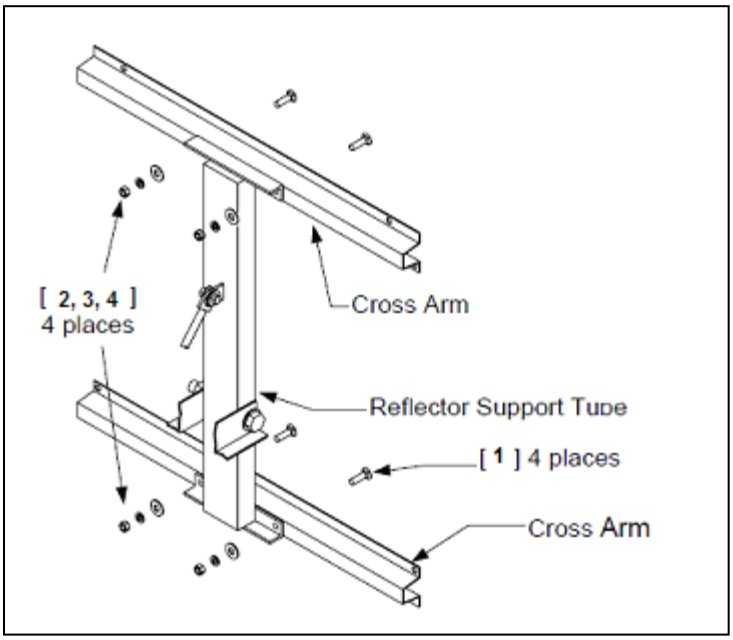
Bottom Holes inset as depicted in the picture below.

Fig. 1: Lower reflector bracket installation

4) Install the top reflector support bracket as depicted in the picture below. The top holes should be inset closer to the center.

Fig. 2: Top reflector bracket installation

5) Reflector support brackets mounting illustration



NUTS AND BOLTS

1- ½" x 1.50" BOLT
2- ½" Hex Nut
3- ½" Lock Washer
4- ½" Washer

6) Install the elevation actuator as depicted in the picture below using the hardware provided. Ensure not to turn the inner tubing of the actuator while handling.

Fig. 3: Assembled Elevation Actuator

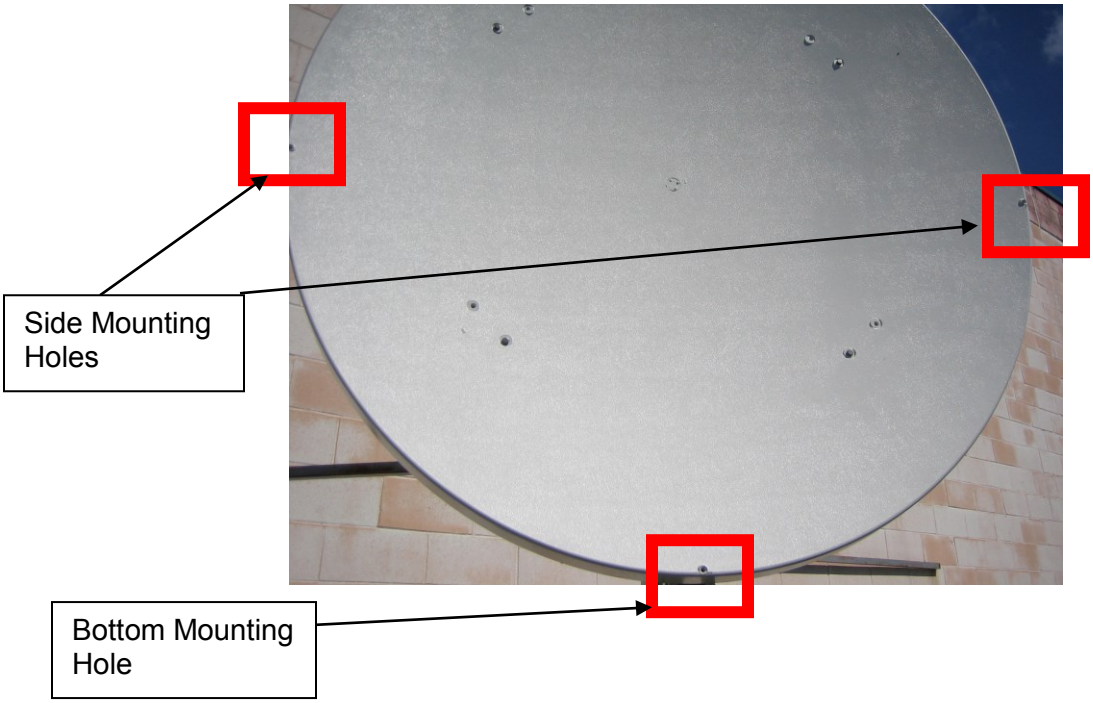
Fig. 4:

7) Install the reflector to the elevation frame using the prodelin supplied bolts. See Prodelin manual details. The reflector has two side holes, and one bottom hole as depicted in the picture below. Ensure the reflector is mounted such that the bottom mounting hole between the feed boom and reflector align.

TIP:

You may install the Controller Motor Cable to the controller port and connect the EL Motor connector to the actuator in order to adjust elevation.

1. turn on the power button of the controller,
2. press the SELECT button until the EL LED lights up
3. Press on the "-" to lower the elevation until you can install the reflector sideways.



8) Install the feed arm with the qty (two) provided carriage bolts (refer to prodelin manual for bolt size details). Tighten the inner lock nuts by hand until snug.

Fig. 5: Feed arm installation

9) Install the bottom reflector bolt (See Prodelin manual for bolt size details). Tighten the lock nut until snug.

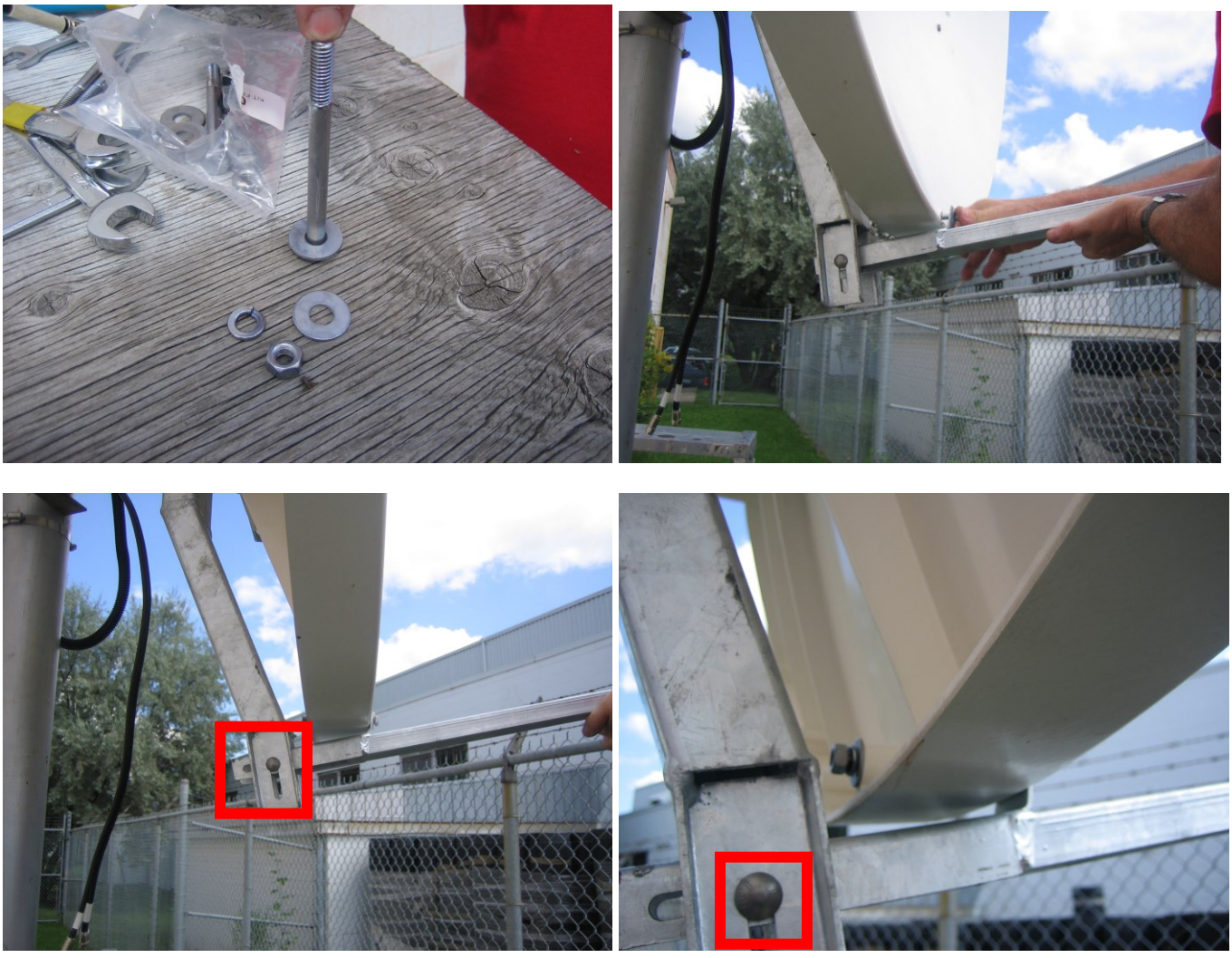


Fig. 6: Bottom reflector bolt installation

10) Install feed boom support bars as depicted in the pictures below. You may have to adjust the feed arm in order to align the mounting holes. (See Prodelin Manual for buts bolts sizes)

Fig. 7: Feed Boom Support bars installation

11) Tighten and secure all nuts and bolts connected to the feed boom as depicted in the pictures below.

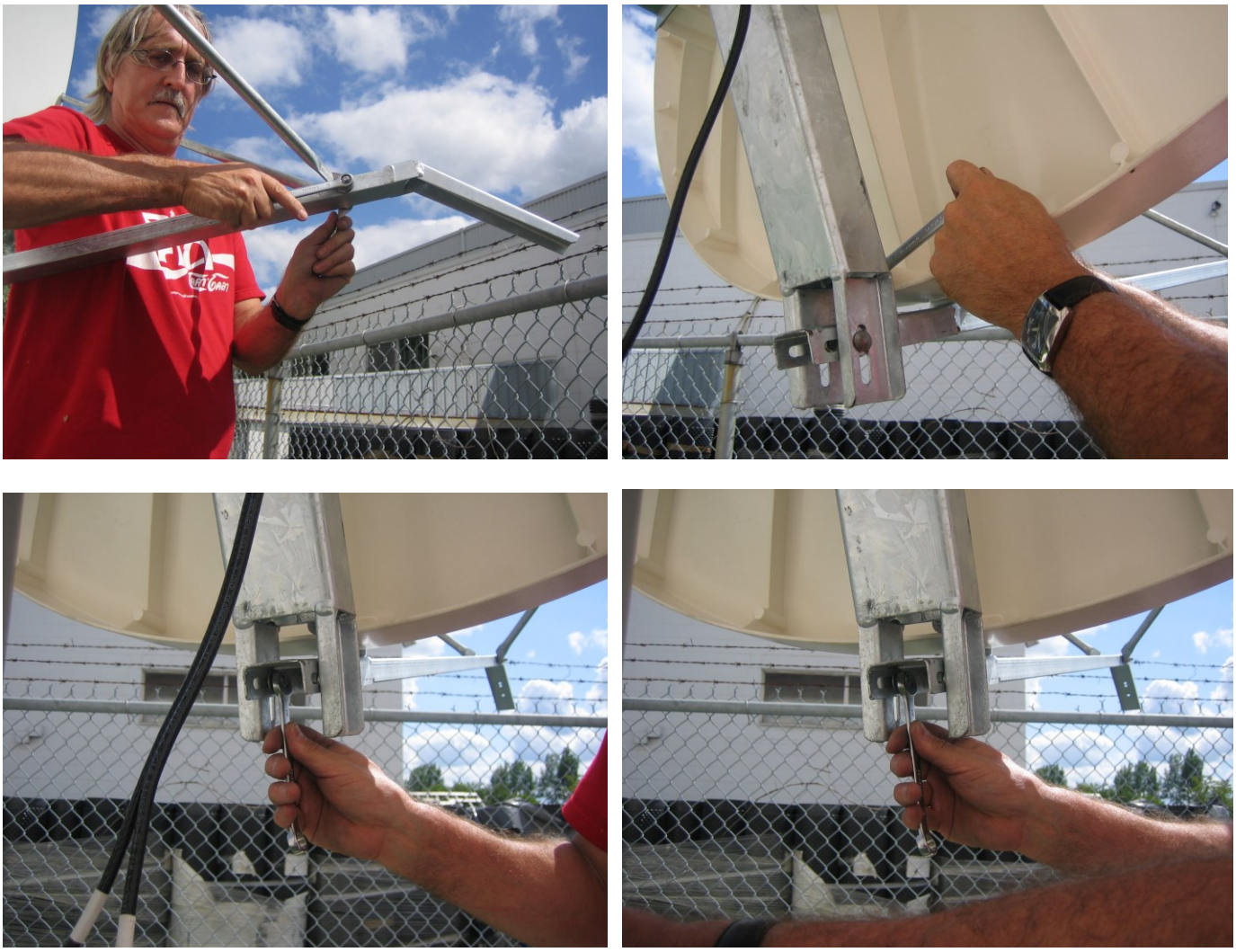


Fig. 8: Securing Feed Arm

12) Install Motorized Polarization assembly onto feed arm with the feed horn facing the reflector using provided bolts. One of the bolts is tightened from inside the cage; bolts should be inserted from top to bottom with the head of the bolt facing up.

Fig. 9: Polarization mounting hardware

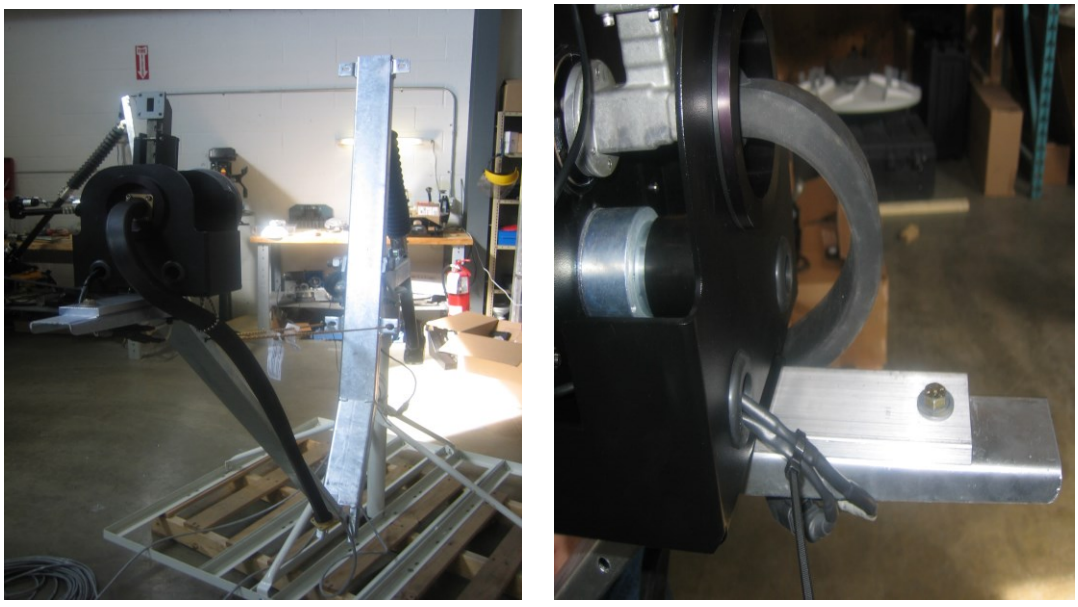


Fig. 10: Polarization Assembly Installation

13) Install the LNB onto the diplexer and the BUC onto the flex waveguide.

14) Connect all cables as follows:

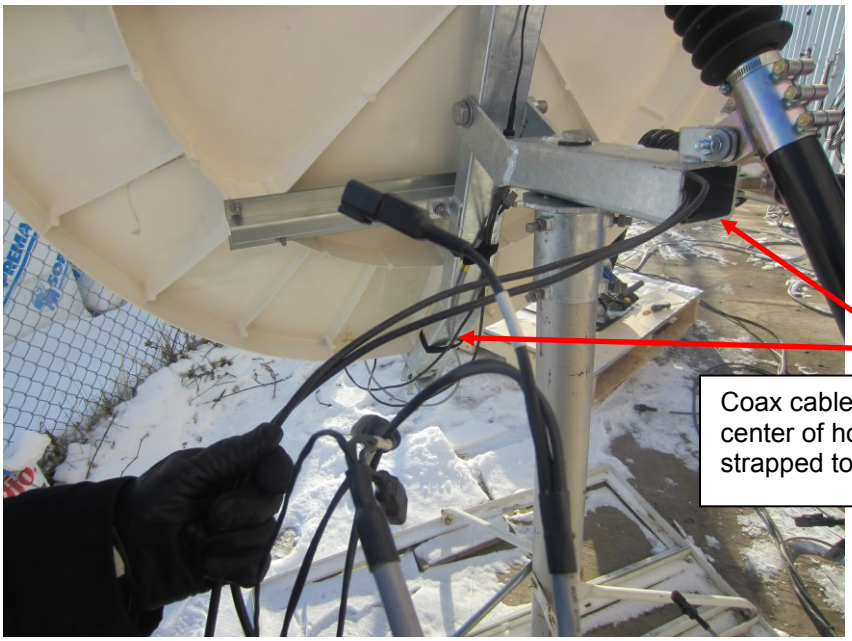
Cable From Controller	Component on Antenna
Rx Coax	LNB
Tx Coax	BUC
AZ Pot	AZ Encoder (Cable Labelled AZ Encoder)
AZ Motor	AZ Motor (Cable Labelled AZ Motor)
EL Motor	EL Actuator (Cable Labelled EL Motor)
EL Inclinometer	Inclinometer Cable on Elevation Frame
PL Motor	PL Tilt Sensor Motor
PL Tilt	PL Tilt Sensor
External Cable – to Feed Arm Cable	Components

3. Cable Installation and Routing

Materials :

1 pc – F6N1.00-1 F6 Wrap, Split Sleeve, 1 in Dia, Black , 9 Inches Lg
1 pc – F6N1.00-1 F6 Wrap, Split Sleeve, 1 in Dia, Black , 3 Inches Lg
2 – Cables Ties, Nylon, Black, 6 Inches Lg
2 – Cable Ties, Velcro, Black, 15 Inches Lg
2 – Cable Ties, Velcro, Black, 13 Inches, Lg

1) Feed Coax cables through center of AZ/EL housing as shown here and strap down using large Velcro straps to EL Arm.



2) Feed Motor and Sensor cables through center of AZ/EL housing. Center housing bolt will spilt the cables to one aside.

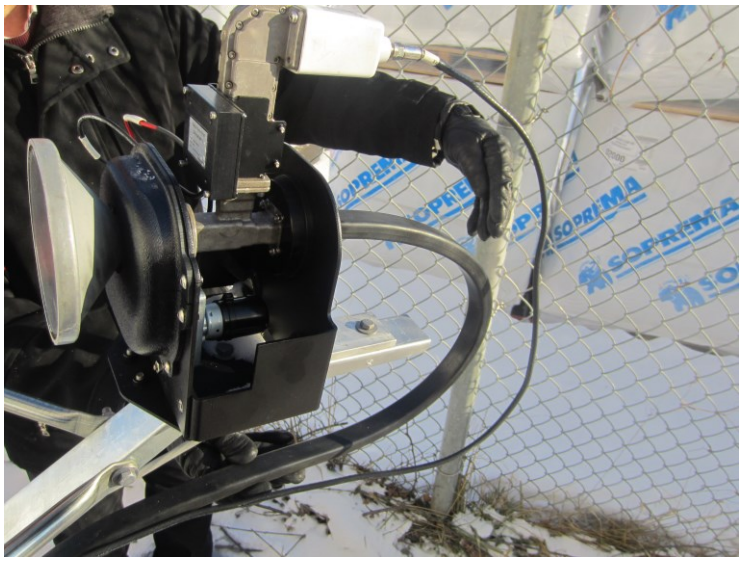
3) Connect cables to corresponding ends. Elevation Inclinometer, Polarization Motor and Inclinometer. Strap cables alongside the coax cables.

Elevation Inclinometer

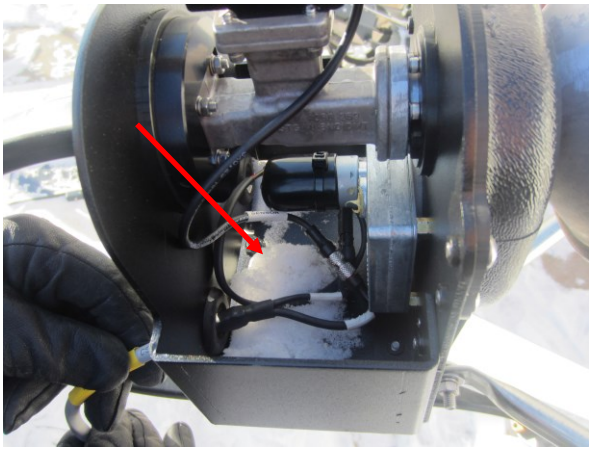
Polarization Motor and Inclinometer

4) Strap cables to Elevation Arm, ensure you leave enough slack after installing and connecting BUC on Feed Arm.

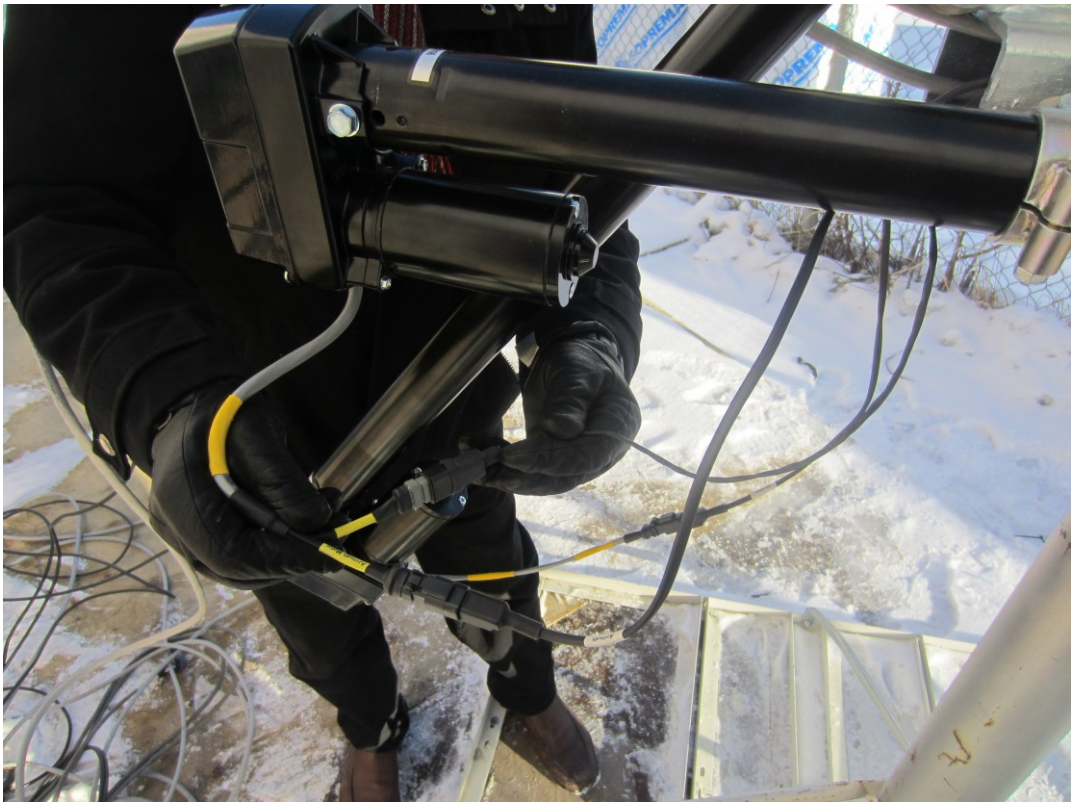
5) Connect Coax cable to LNB.



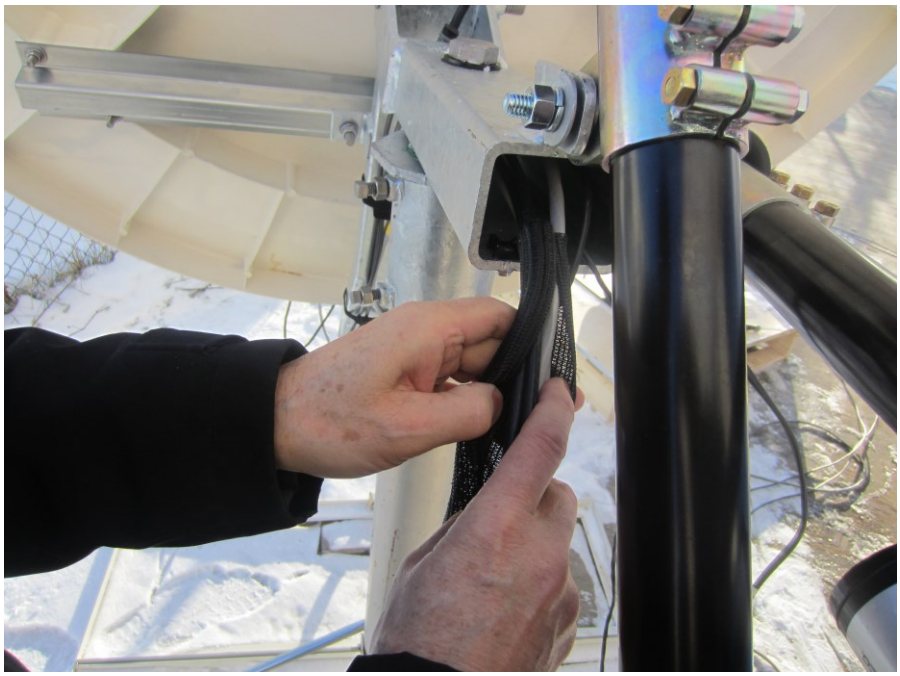
6) Connect Polarization motor and Tilt Sensor. Tuck cables inside Polarization cage.



7) Connect Elevation motor, Azimuth motor and Azimuth potentiometer.



8) Install the 9” long split sleeve mesh wrap over the cables at the end closest to the actuators at the housing opening.



9) Tie down cables with mesh to cable tie mount inside the housing.

10) Install shorter 3” split sleeve wrap at opposite end of the housing. Cable tie goes directly over wrap and cables no cable tie mount used at this end.

4. System Configuration Connectivity

The iNetVu® 1.8m fixed motorized antenna has been built to operate with the iNetVu® 7000 Series (7024B/C) 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 – Network Modem Interface

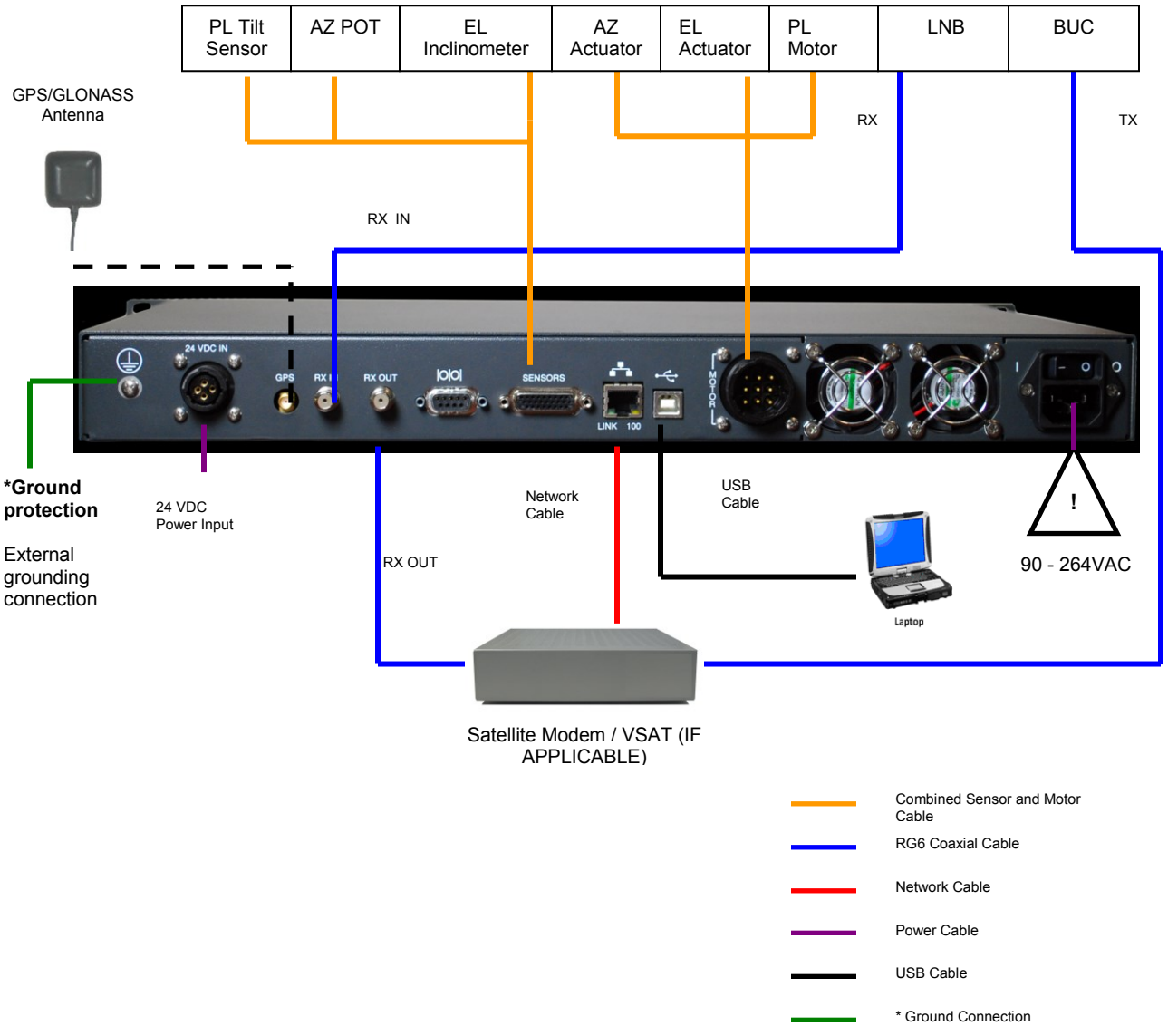


Fig. 11: iNetVu® 7000 Series Controller Network Connection Configuration

4.2. Typical Connection - COM Modem Interface

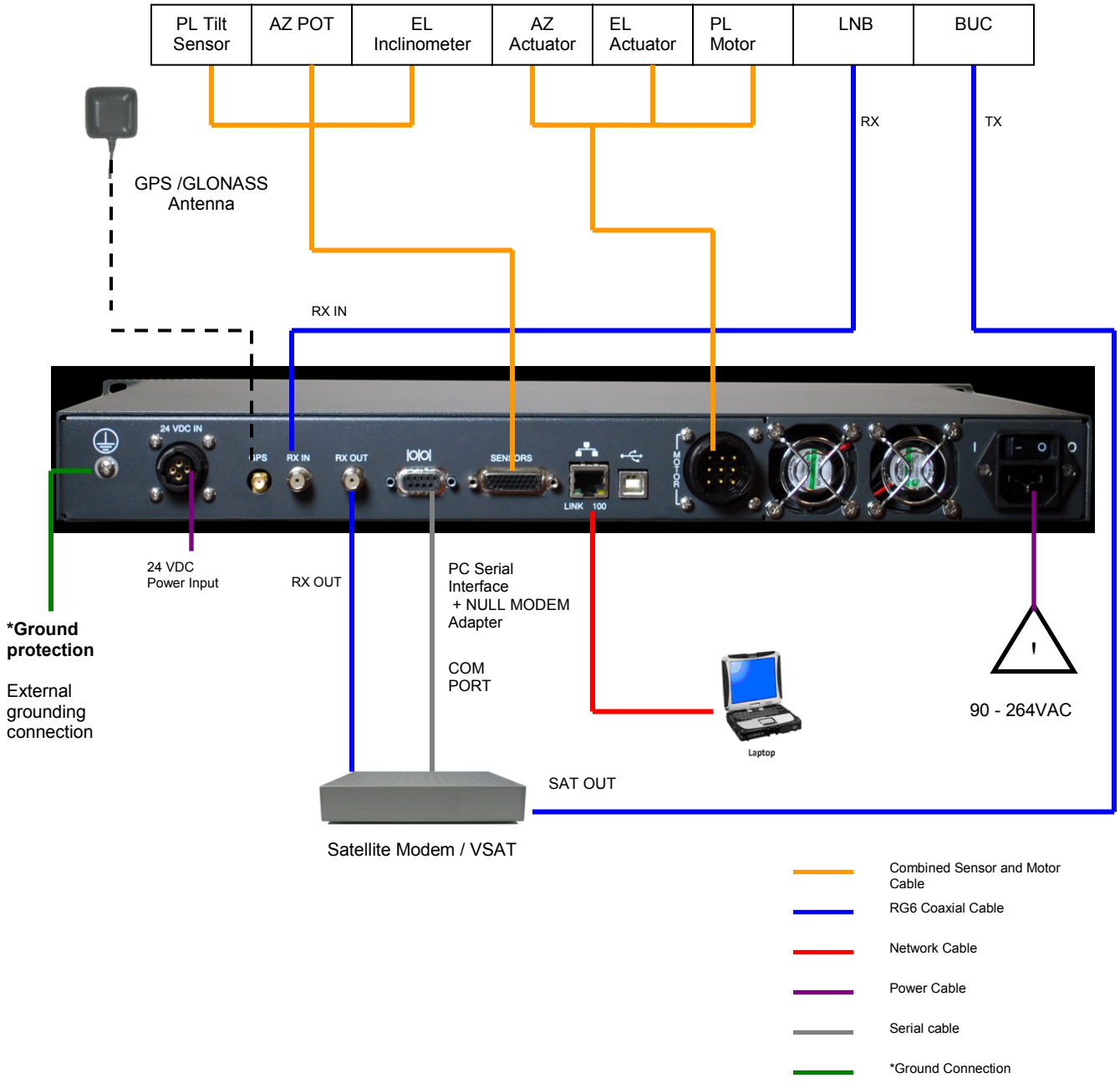


Fig. 12: 7000 Series Controller COM Modem Configuration

4.3. Typical Connection – Stand Alone (No Modem Interface)

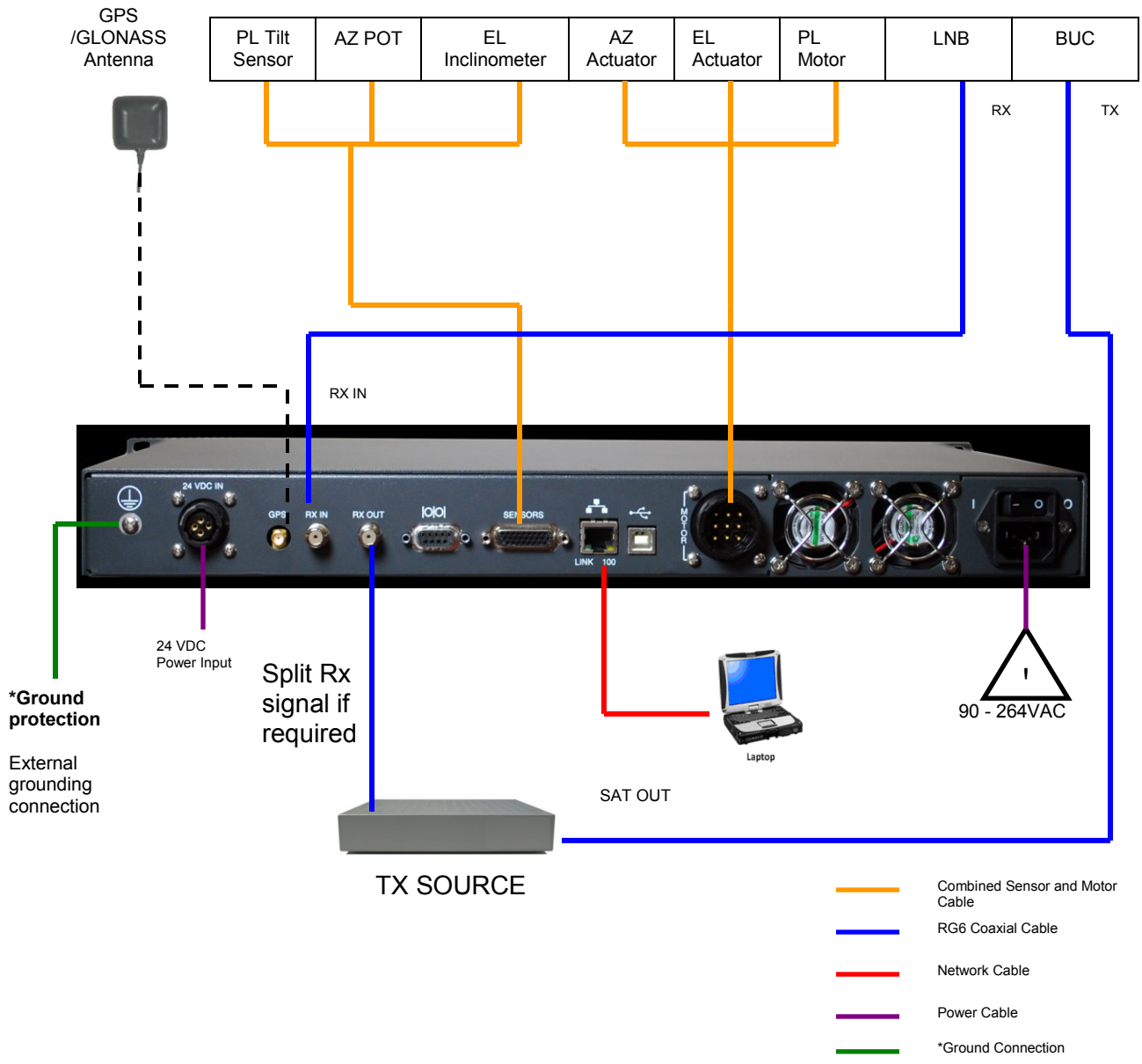


Fig. 13: 7000 Series Controller stand alone Configuration

Note Refer to iNetVu 7000 Series Controller Manual for more information on configuration and setup.

5. iNetVu® 7000 Controller Configuration Quick Start

5.1. Software Initial Configuration and Verification Test

The iNetVu® 7000 Series Controller allows for the complete setup and configuration of the iNetVu® system through the LCD interface, web and software using the USB, Network Interface or Serial Com port. 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, and is only required to be done once as long as no changes are made to configuration settings.

1) Power **ON** your PC/Notebook and 7000 Series Controller, install the iNetVu® 7000 Mobile Software from the installation package on the USB Flash drive.

2) Install the USB drivers if you are using a USB interface to the controller as explained in the appendix A.

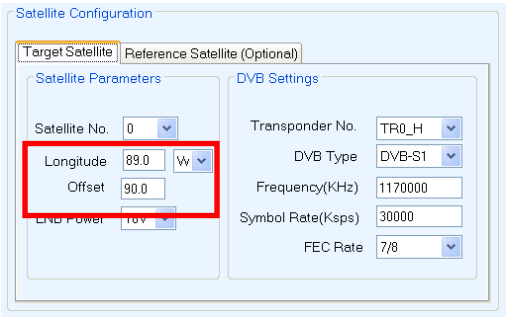
3) Run the iNetVu Mobile 7000 application by double clicking on the shortcut, or the executable (.exe) file.

4) Advance to the “Configuration” screen, by right clicking on the “Controls” screen, and selecting “Configuration”.

5) Enter the **Satellite Longitude** and **Sat Offset**

General Case:

1.0/1.2/1.5/1.8 Antennas	–Receive Horizontal→ Offset = 0 --Receive Vertical → Offset = 90
9XX/7XX Antennas	- Offset = 0 (Manual adjustment may be required – see installation manual for details)



The DVB Parameters (TR No., Freq, Sym, Code Rate), and the LNB Power can be left as is. The software will automatically set these parameters after configuration is complete. More detail will be explained in step 10).

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

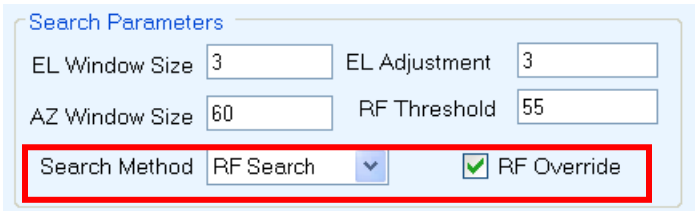
Type:	Choose Vendor (NA-is used for stand alone modem independent satellite acquisition)
INF (Interface):	HTTP TELNET COM SNMP UDP NA (for stand alone systems – modem not applicable)
Rx-Pol (Receive Polarity):	H (Horizontal Receive) V (Vertical Receive)
Tx-Pol (Transmit Polarity):	H (Horizontal Transmit) 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 blank.*

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 if using Hughes)
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)
LNB 22K	Enable if 22 KHz tone is required for LNB

7) **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 (Ensure the **RF Search** and

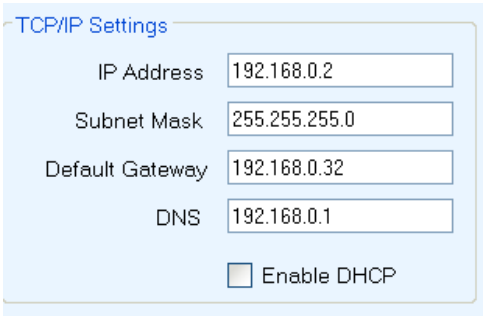
RF Override Check Box is selected). A valid Frequency must be entered in the DVB section. See Controller User Manual for more details.



8) Under the “Platform” section ensure the platform type and serial numbers are correct. (**A0180A**)

9) Under the “Controller” section, enter the following:

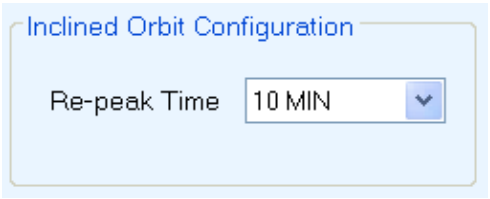
IP Address: Controller IP Address
Subnet Mask: Controller Subnet Mask
Default Gateway: Controller Gateway
DNS: Enter default DNS Server or Disregard
DHCP: Disregard



HOW INCLINED ORBIT WORKS

Enabling this option will allow the system to maintain signal with an inclined orbital satellite. The user may select the time difference between each re-peak on the inclined orbital satellite without disabling the transmitter and maximizing on the signal strength.

DIS: Disabled
1: Re-peak every 10 minutes
2: Re-peak every 30 minutes
3: Re-peak every 1 hours
4: Re-peak every 2 hours
5: Re-peak every 3 hours
6: Re-peak every 4 hours
7: Re-peak every 6 hours
8: Re-peak every 8 hours
9: Re-peak every 12 hours



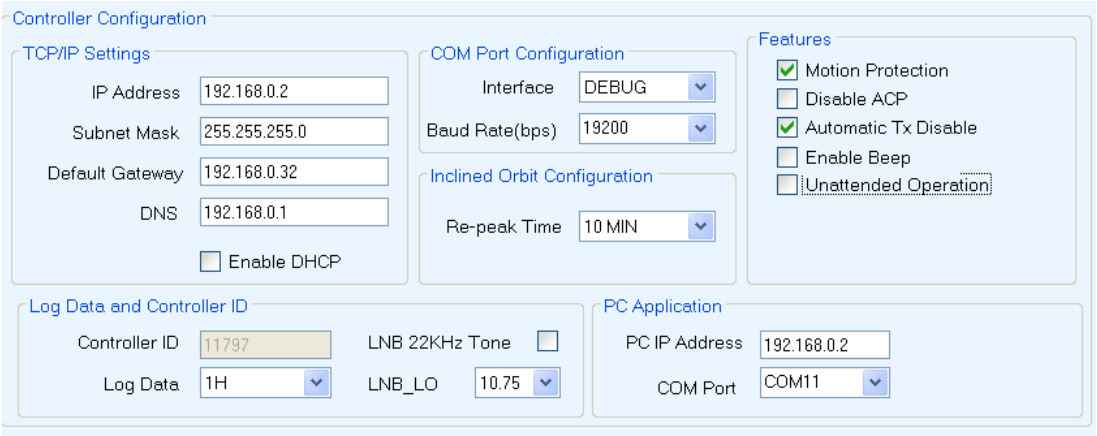
Re-peak Time: (Depends on Inclined Satellite)

For Console Interface to Modem Users:

Enter the following under COM Port Configuration:

COM: Modem
BAUD: Depending on the modem baud rate

All other fields could be left as default.

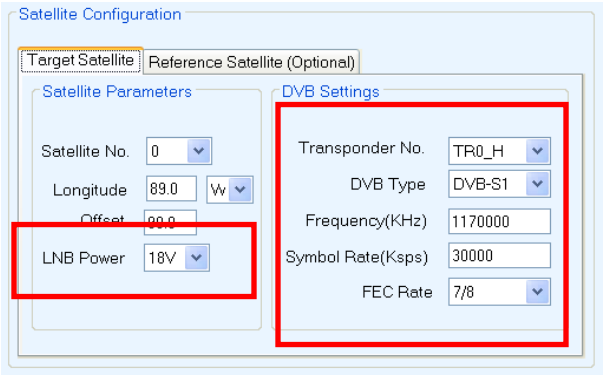


10) Click "**SEND ALL**". This will send all configured parameters to the controller.

In the Satellite Configuration Section, the DVB Transponder and LNB Power information should automatically populate.

Note: If you choose to modify the DVB Transponder Information, or the LNB Power, you may do so by selecting one from the Tr No. list (V is for vertical receive / H is for horizontal Receive) or enter your own and click the **"Send All"** button again.

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



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

11) Congratulations you have successfully configured your iNetVu® fixed motorized system. Navigate to the “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.

12) When complete, you may click on the “Stow Antenna” button, wait until the antenna is stowed, and power off your 7000 Series Controller. You may remove the PC if required and use the one button solution to Find Satellite and Stow Antenna without re-configuring.

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

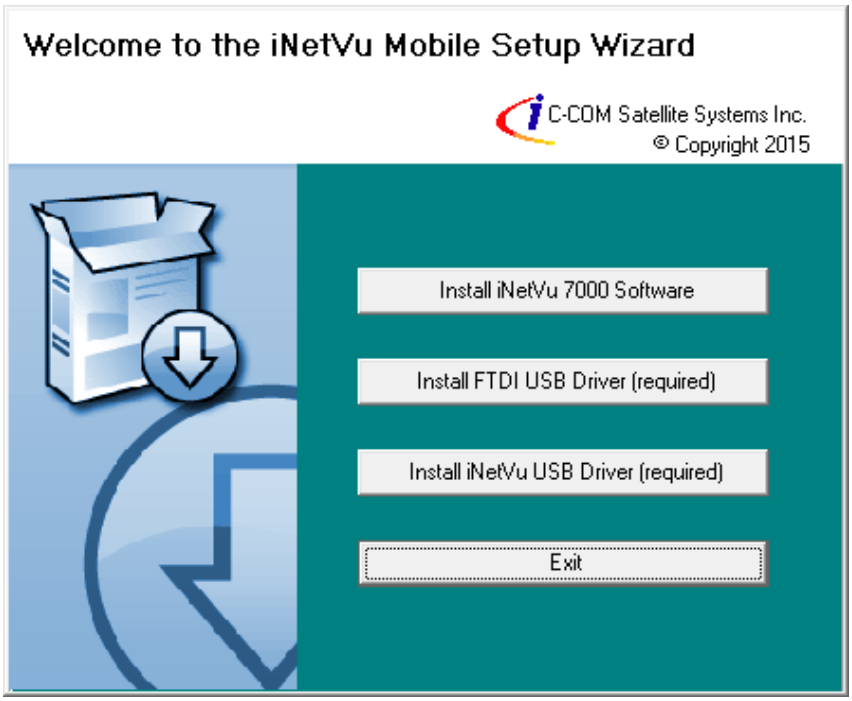
6. Appendix

6.1. Appendix A: Software & USB Driver Installation

It is recommended that the previous software be uninstalled before installing latest software version if upgrading. See minimum recommended pc requirements for most favorable working system.

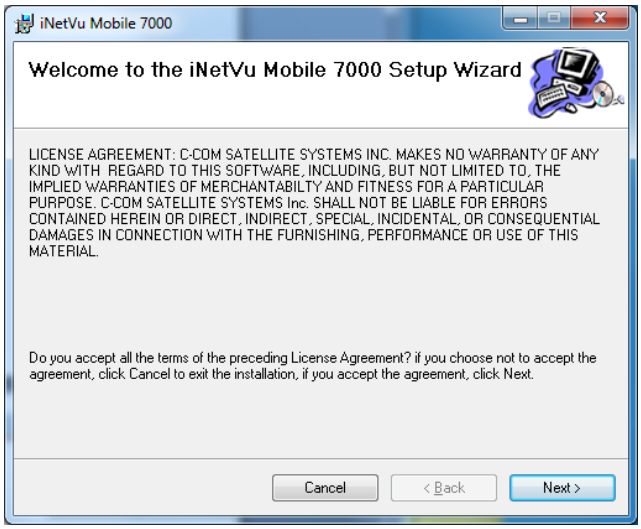
Please Note: Do not connect the Controller via USB until the drivers and software have been installed

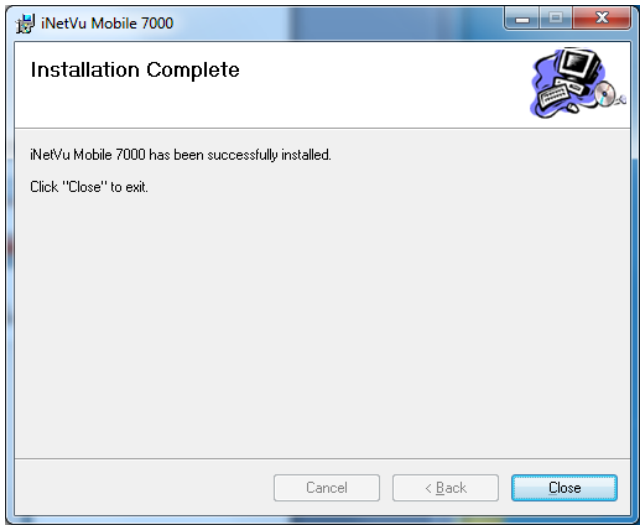
1. Install the software from the Memory Stick or from a downloaded file by double clicking on iNetVuSetup.exe and follow the installation wizard.



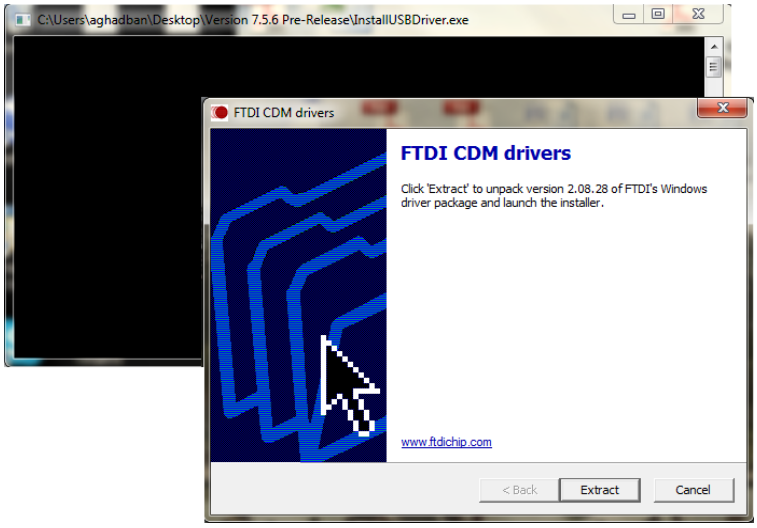
Note: The Driver installation will be done in two stages. FTDI CDM Drivers and, USB Drivers.

2. Install the iNetVu 7000 Software and close when complete.

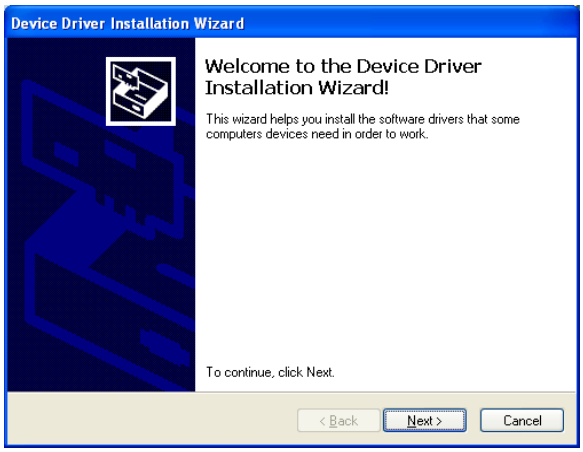




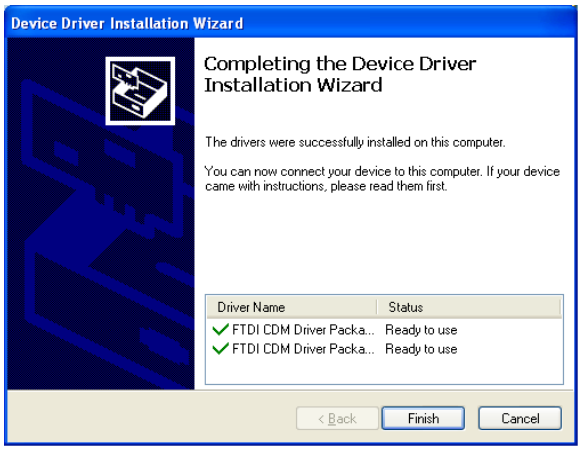
3. Install the **FTDI USB Drivers** and **iNetVu USB Drivers**. Both are required.



Click “Extract”

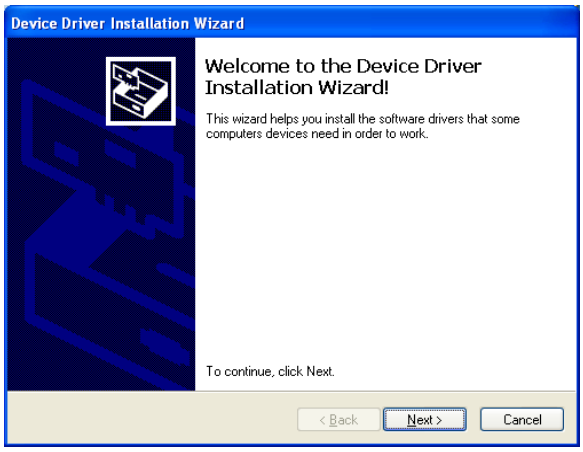


Click "Next"

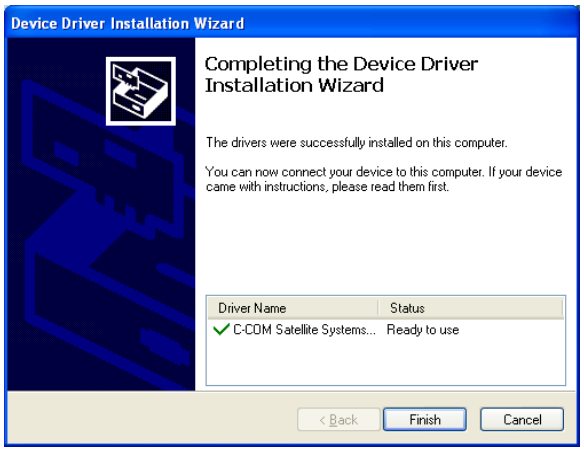


Click "Finish"

4. Click **Next** on "Device Driver installation Wizard" window. Two windows may appear one for FTDI and one for Legacy click Next on both.



Click "Next"

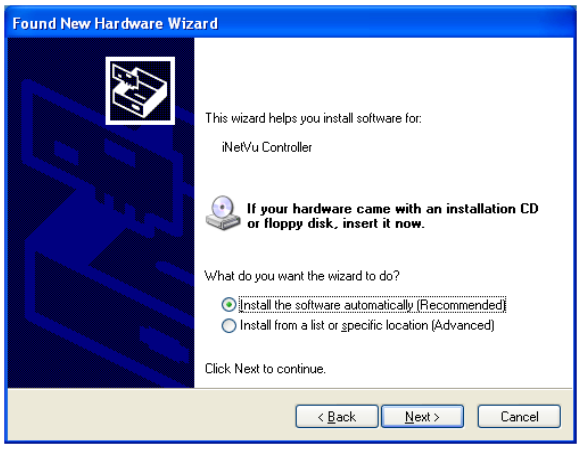


Click "Finish"

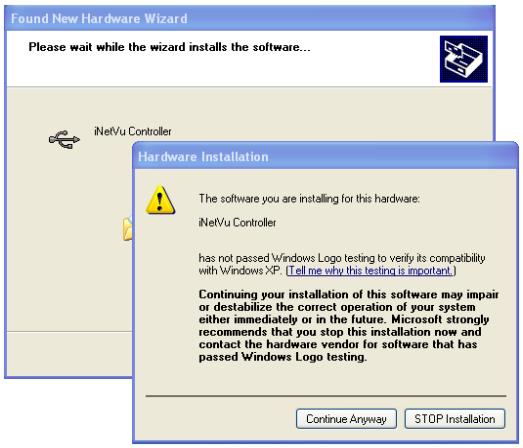
5. Now that the drivers and software package has been installed, connect the iNetVu 7000 Controller via USB to your PC.

6. **Windows XP** users will have to follow the new hardware wizard and let windows automatically install the drivers.

Select "No, not this time"



Select "Install the software automatically"

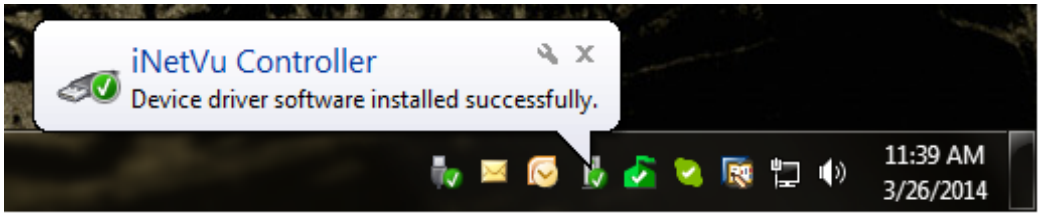


Click "Continue Anyway"

Click "Finish"

7. Now that the drivers and software package has been installed, connect the iNetVu 7000 Controller via USB to your PC.

8. **Windows Vista and 7** users, the drivers should install automatically without any further user action when the controller is powered up.



6.2. Appendix B: Setup

1. Connect all of the cables and components as depicted by section 3. Select connections that are best suited for your application.

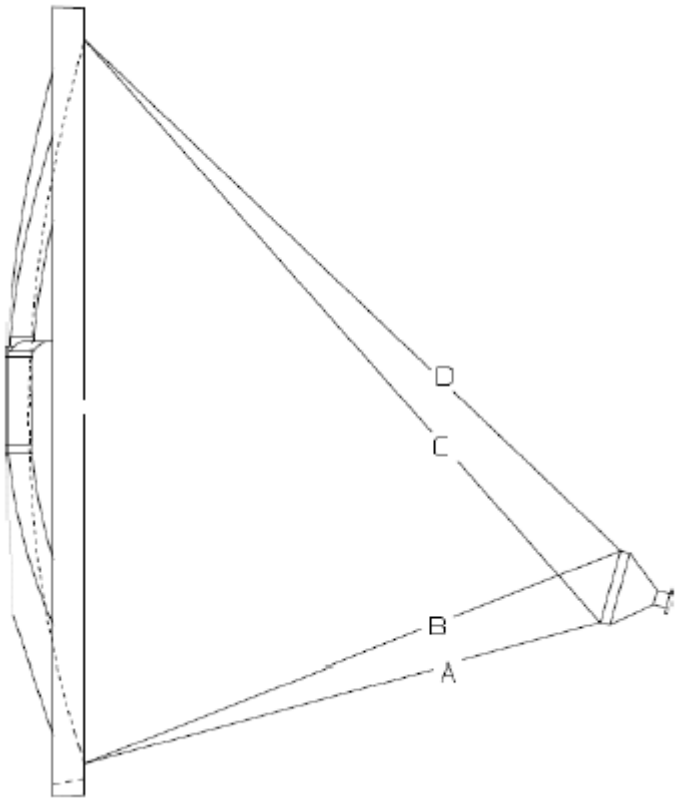
2. Power on the iNetVu® 7000 Series Controller.

3. Set your external PC to the same subnet as the iNetVu® 7000 Series Controller (Default IP Address of the Controller is 192.168.0.2)

4. Ethernet (LAN) and Serial communication may also be used to communicate between Controller and PC. LAN (Network Cable) or USB connections are recommended.

5. Refer to the appropriate User Manual for service based system configuration.

6.3. Appendix C: Platform ABCD Dimensions



A0180 (1.8 FMA)
GD Satcom Feed

A – 40.11”
B – 44.11”
C – 72.01”
D – 69.31”

Fig. 14: ABCD Geometry Dimensions