iNetVu® Fly-1202 User Manual

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NOTICE

C-COM Satellite Systems Inc. makes no warranty of any kind with regards to this manual including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose.

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Table of Contents

1. Introduction

1.1 About This Manual

This manual explains the iNetVu® Fly-1202 Flyaway System Installation and Operation.

1.2 System Overview

Equipped to work with the iNetVu® 7710 Series Controller, the iNetVu® Fly-1202 Flyaway antenna is an easily assembled, rugged and reliable product for automatic satellite acquisition. This antenna is a rapidly deployable unit that is ideal for applications that require satellite communication over Ku/Ka-Band. The Flyaway empowers users with the ability to stop anywhere where satellite coverage exists and access the Internet at broadband speeds.

The 1.2M Fly-1202 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® 1202 Ku and Ka Flyaway

1.3 Power Consumption

Idle (Minimum) Power Consumption: 24VDC @ 0.19A for 7710 and
                                           24VDC @ 0.13A for 7720.

Maximum Power Consumption: 7710 plus 7720
                                           24V @ 14.6A = 350W (Max)

Controller AC Universal Input: 100 ~ 240 VAC, 50 ~ 60 Hz

(A1206A) Running Power Consumption: 24V@10A
(Max EL&AZ)
(A1206A) Maximum consumption: EL ---24VDC@10A, AZ---VDC@10A
(Stall Condition)

Fig. 2:   iNetVu® 7710 Controller

Fig. 3:   iNetVu® 7720 Remote Drive Module

The iNetVu® Fly-1202 Flyaway system offers the following additional capabilities and features:

- 3-Axes (Ku-Band), 2 Axis (Ka-Band) motor drive system
- Satellite acquisition within 5 minutes (under normal operating conditions)
- Compatible with any configured satellite over the Ku /Ka 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, and ruggedized transportable carry gear

2. Physical Outline

2.1 Receive Only Platform

2-piece
Detachable reflector

7720 Remote
Drive Module

Feed Horn

Elevation Motor

Feed Arm

Azimuth Motor

Compass

(3) Support Legs
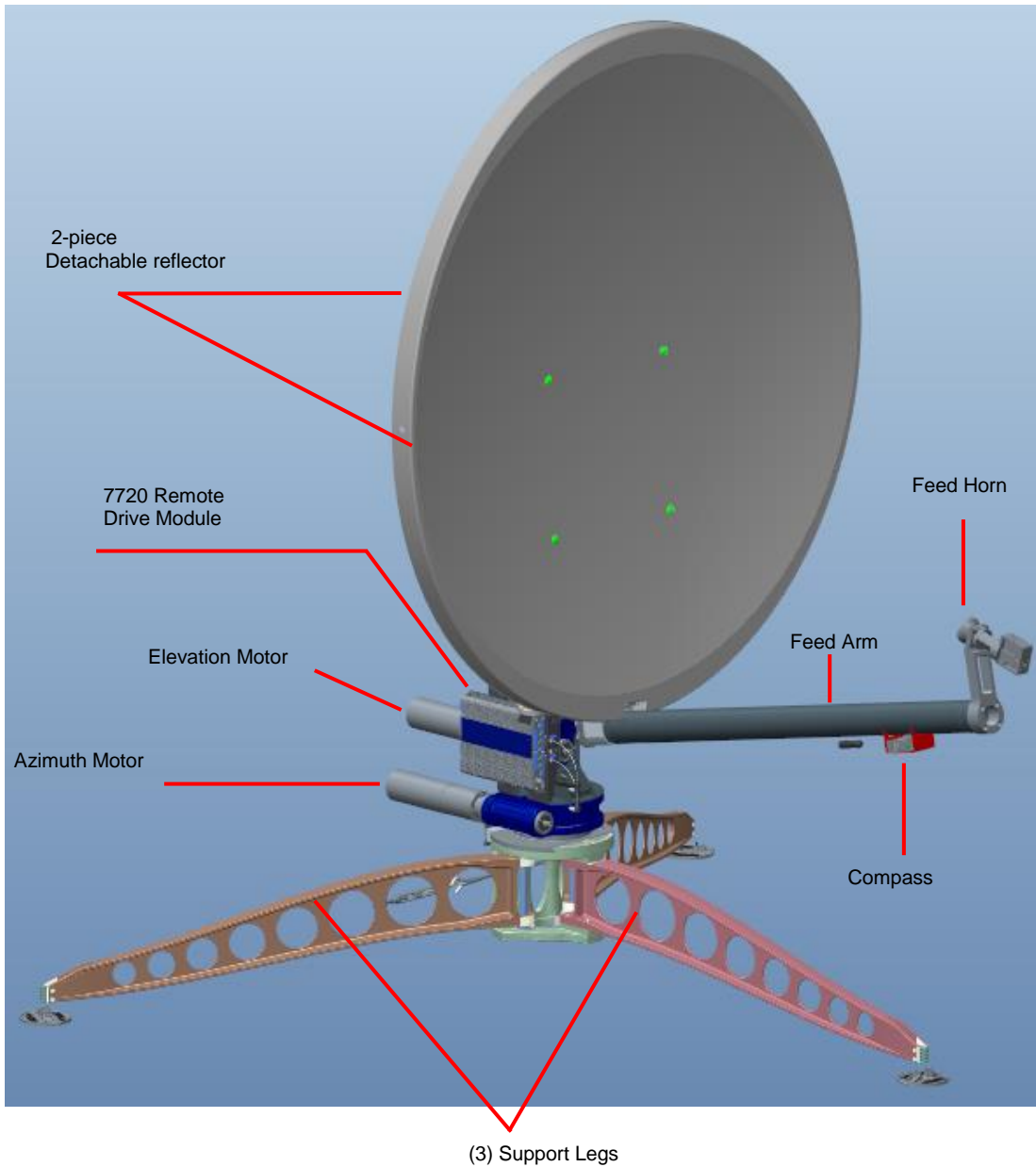
2.2 Ku Band Platform
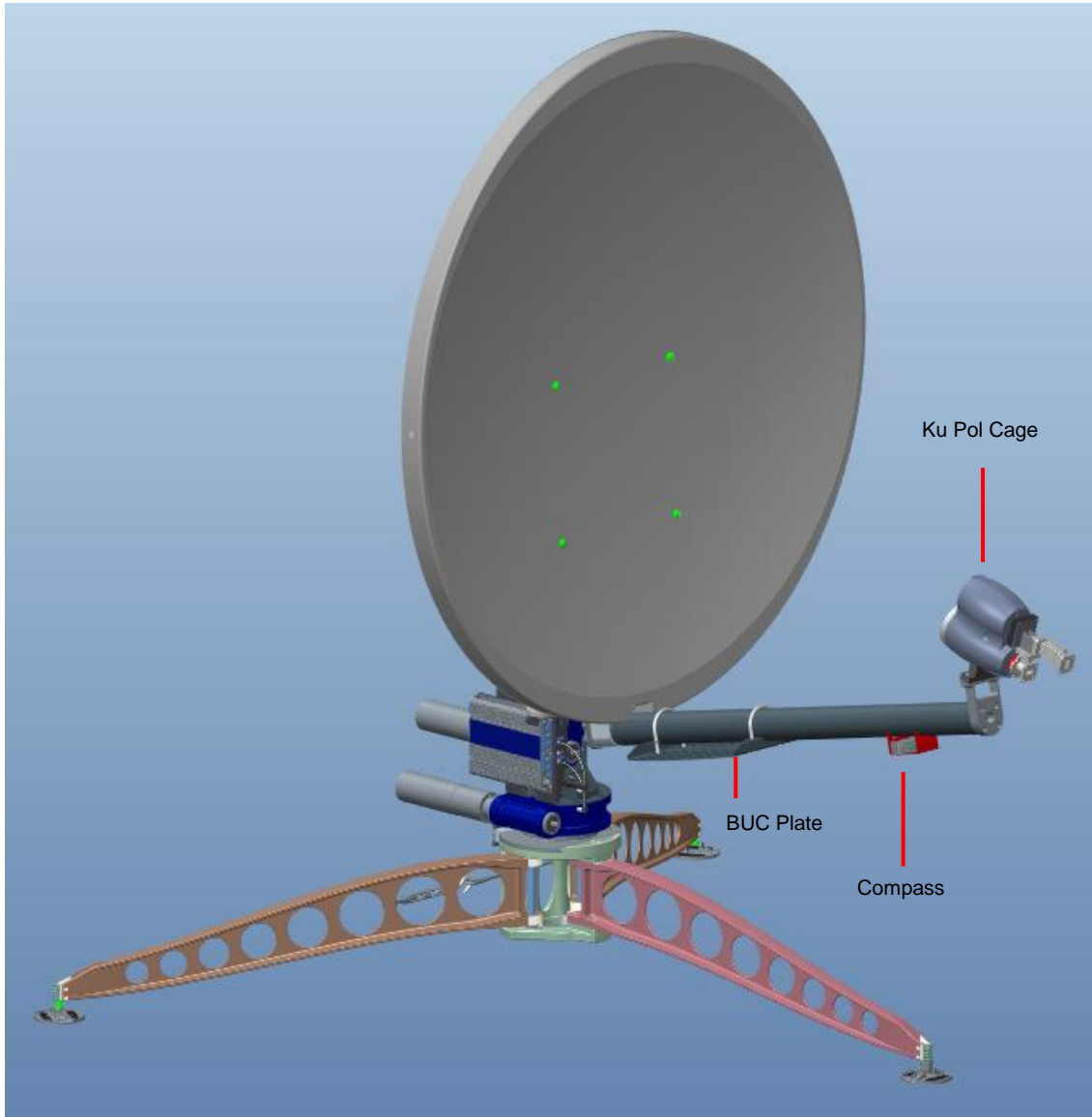
3. Clearance Requirements

3.1 Receive Only (RO)

Fig. 4: Clearance requirements for the iNetVu® Fly-1202 (RO) Platform

> **WARNING!!!**
> Prior to operation you must use ballasts or anchors to weigh down the fly-away at all times, failing to do so may result in property or equipment damage.

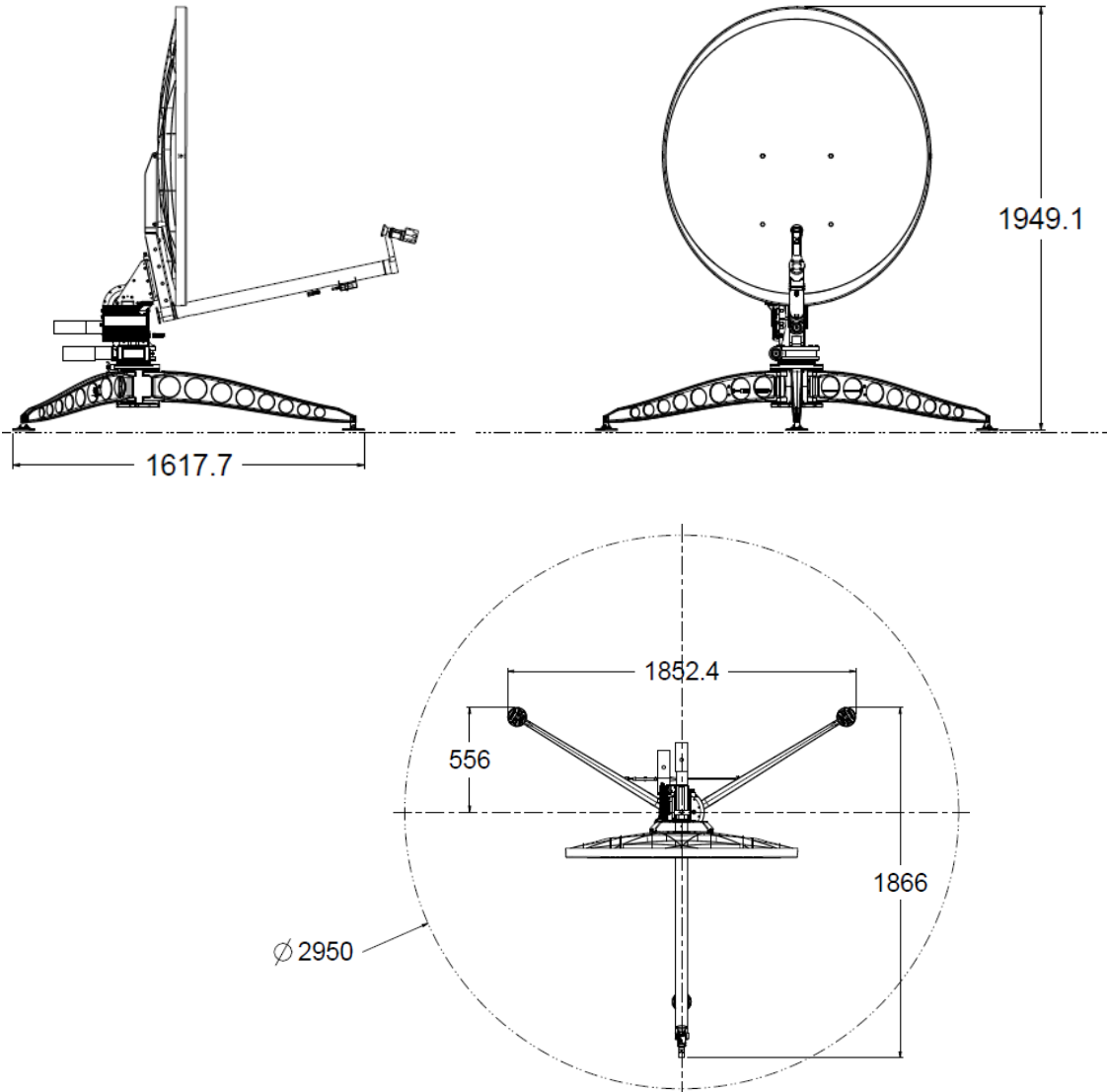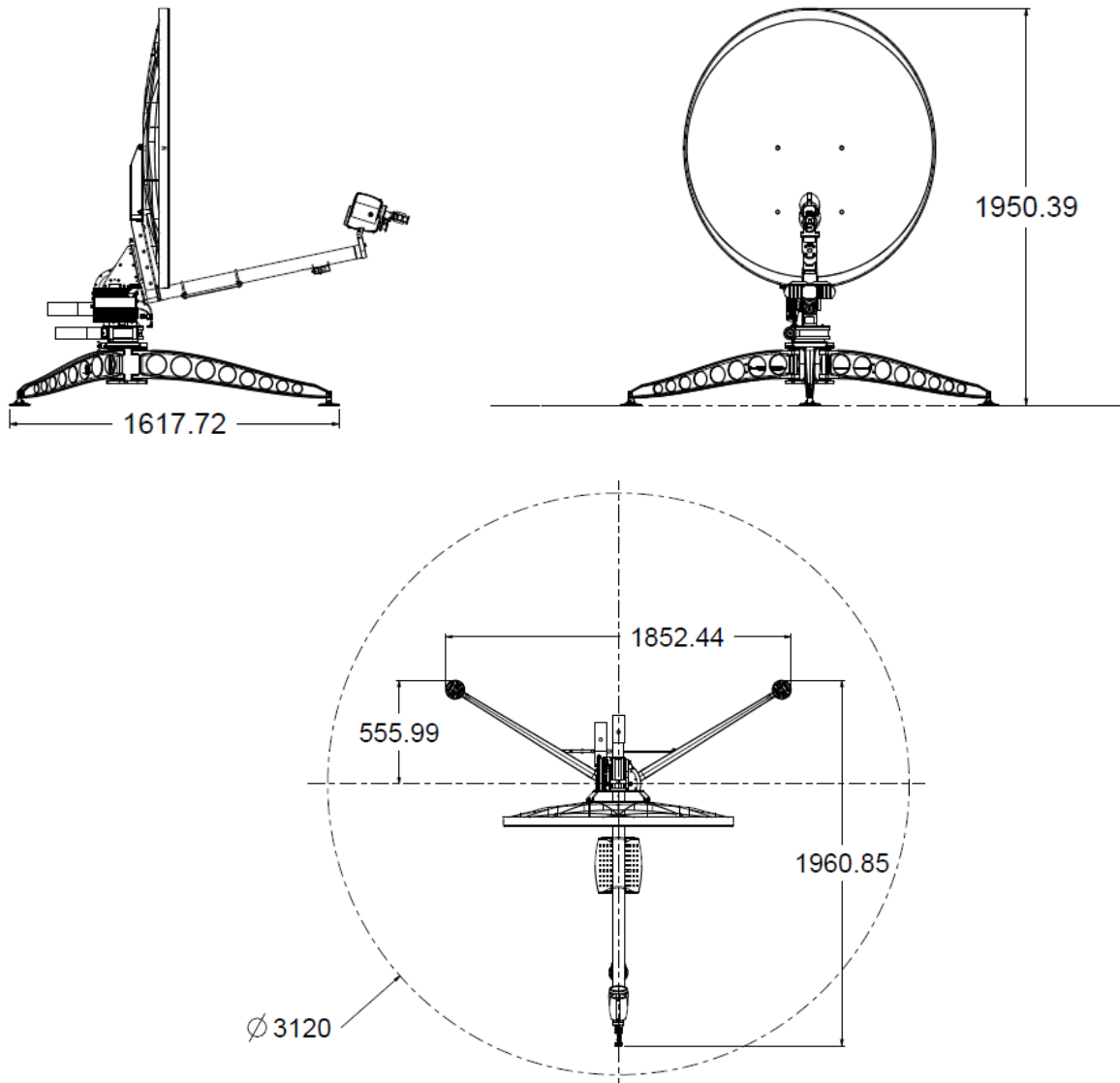## 3.2 Ku Band

Fig. 5:   Clearance requirements for the iNetVu® Fly-1202 (Ku) Platform

WARNING!!!
Prior to operation you must use ballasts or anchors to weigh down the fly-away at all times, failing to do so may result in property or equipment damage.

4. System Connections

The iNetVu® New Generation Flyaway (Fly-1202) Antennas have been built to operate with the iNetVu® 7710 Central Controller and a 7720 Remote (Onboard) Drive Module. 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. The system connections shown in this section can be used with either the Ka or Ku systems with one variable, the Ku will have two coax connections while the Ka in most cases will only have one.
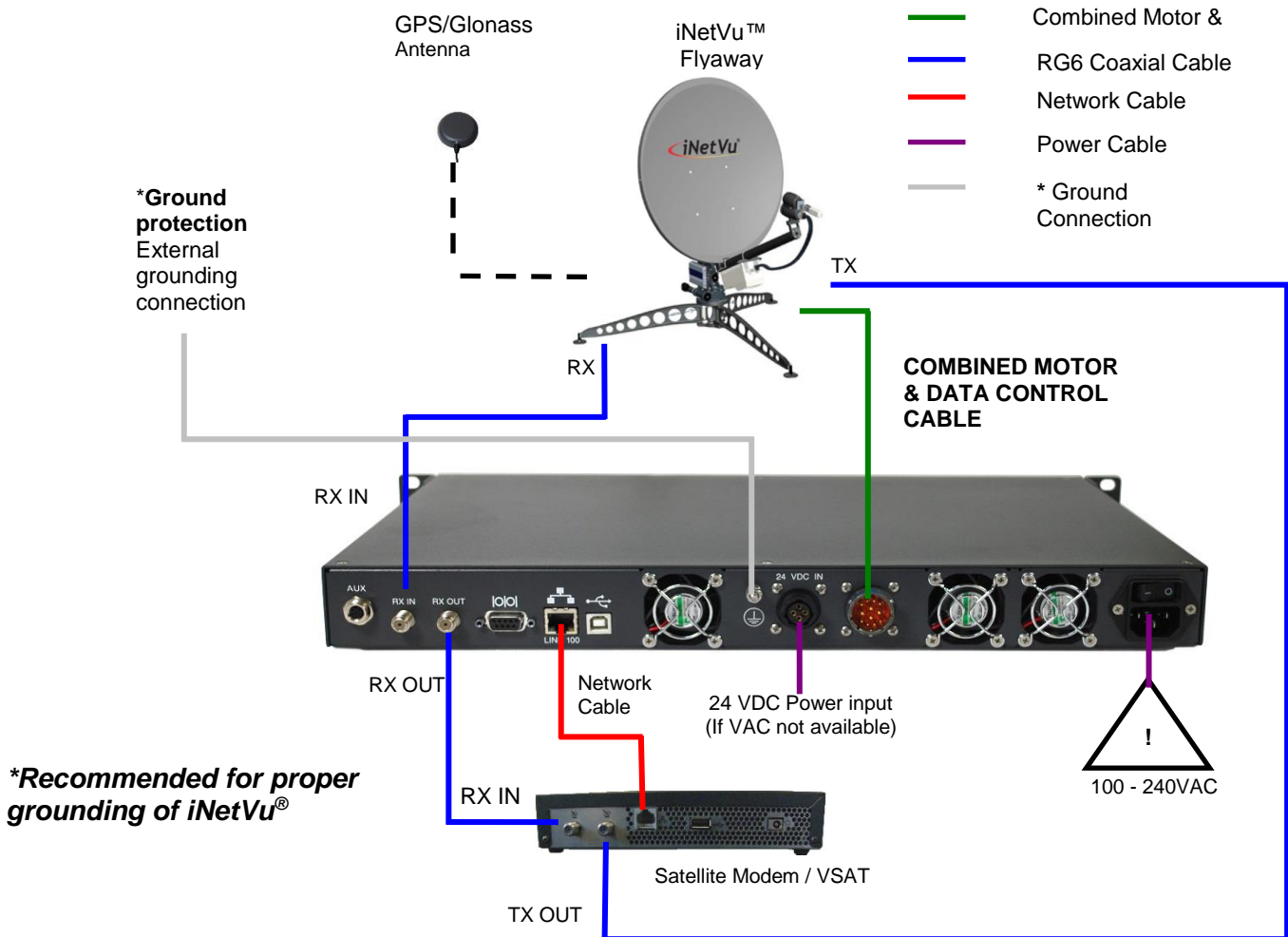
4.1 Typical Connection with Ku Service – PC Free

Fig. 6:   iNetVu® 7710 Controller & Ku Antenna Connection with PC Free Configuration

4.2 Typical Connection with Ka Service – PC Free

Combined Motor &

RG6 Coaxial Cable

Network Cable

Power Cable

* Ground Connection

GPS/Glonass Antenna

iNetVu™ Flyaway

*Ground protection External grounding connection

TX

COMBINED MOTOR & DATA CONTROL CABLE

RX IN

Network Cable

24 VDC Power input (If VAC not available)
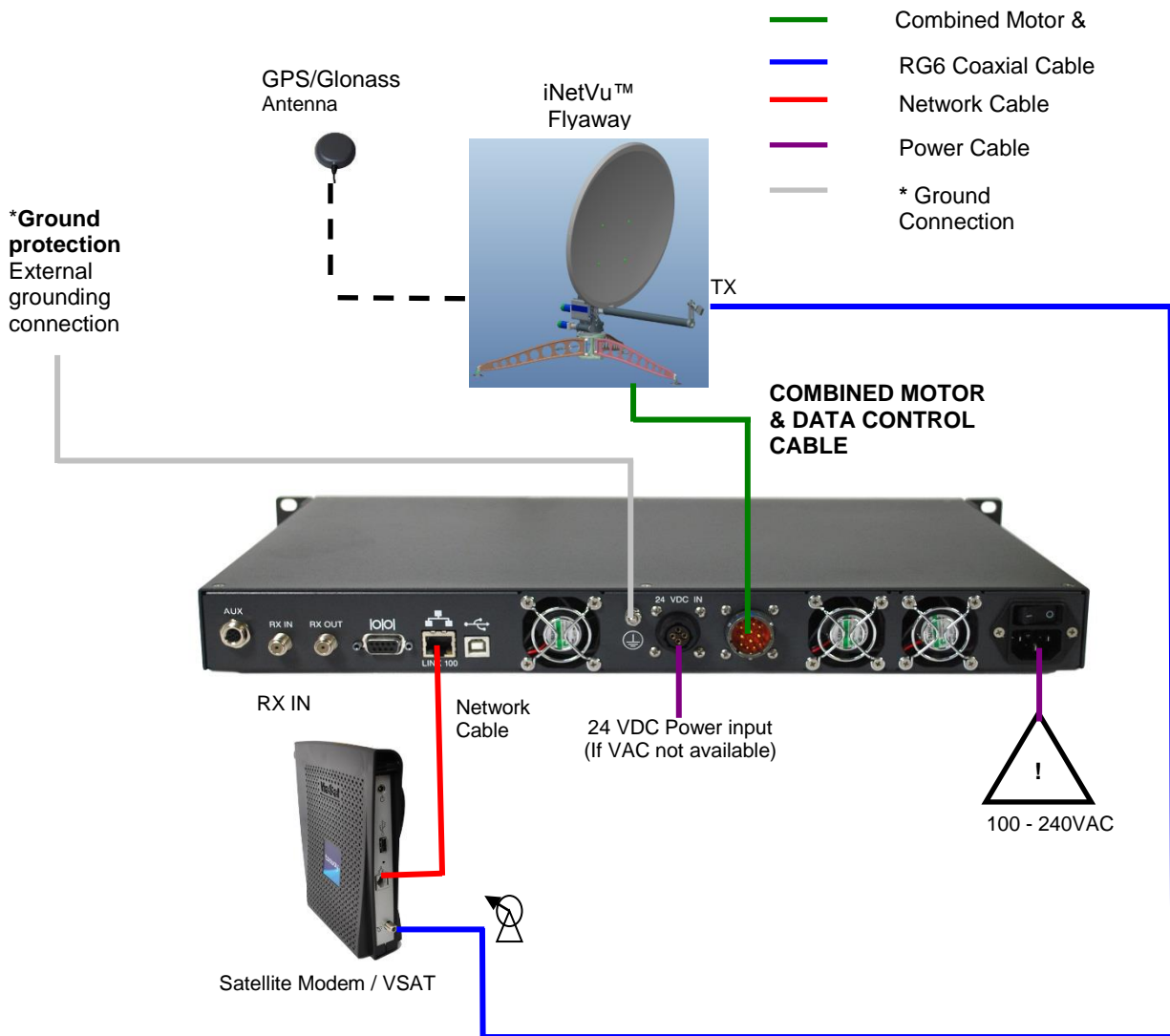
!

100 - 240VAC

Satellite Modem / VSAT

Fig. 7:   iNetVu® 7710 Controller & Ka Antenna with PC Free Connection Configuration

*Recommended for proper grounding of iNetVu® systems.

WARNING!!!
Prior to operation you must use ballasts or anchors to weigh down the fly-away at all times, failing to do so may result in property or equipment damage.
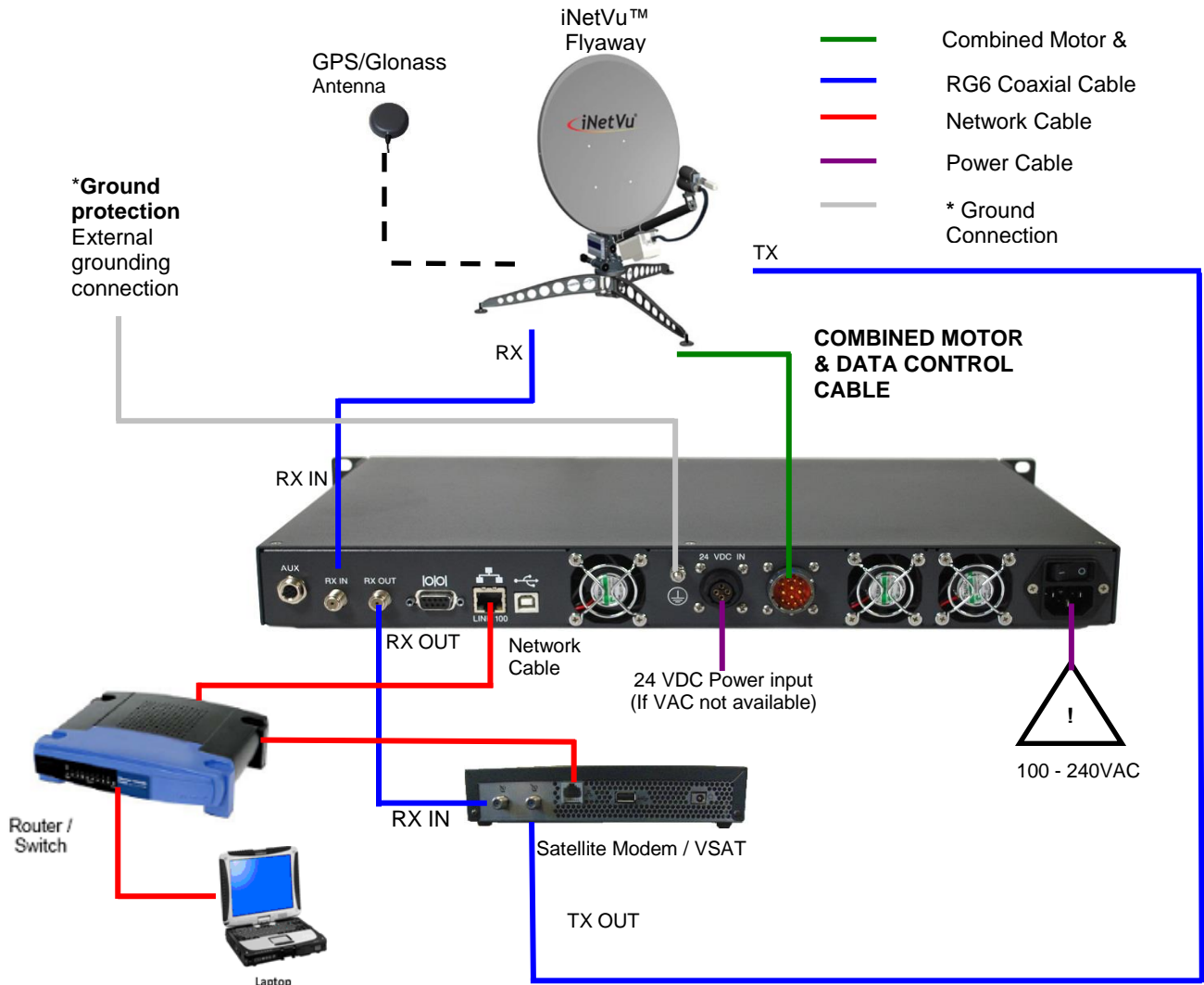
4.3 Typical Network Interface Connection - Ku

iNetVu™ Flyaway

GPS/Glonass Antenna

Combined Motor &
RG6 Coaxial Cable
Network Cable
Power Cable
* Ground Connection

*Ground protection
External grounding connection

TX

RX

COMBINED MOTOR & DATA CONTROL CABLE

RX IN

RX OUT   Network Cable

24 VDC Power input
(If VAC not available)

!

100 - 240VAC

Router / Switch

RX IN

Satellite Modem / VSAT

Laptop

TX OUT

Fig. 8:   iNetVu® LAN interface Connection Configuration with Ku Antenna

*Recommended for proper grounding of iNetVu® systems.

WARNING!!!
Prior to operation you must use ballasts or anchors to weigh down the fly-away at all times, failing to do so may result in property or equipment damage.

4.4 Typical USB Communication Interface - Ku

Fig. 9:   USB Interface Connection with Ku Antenna

*Recommended for proper grounding of iNetVu® systems.

> **WARNING!!!**
> Prior to operation you must use ballasts or anchors to weigh down the fly-away at all times, failing to do so may result in property or equipment damage.
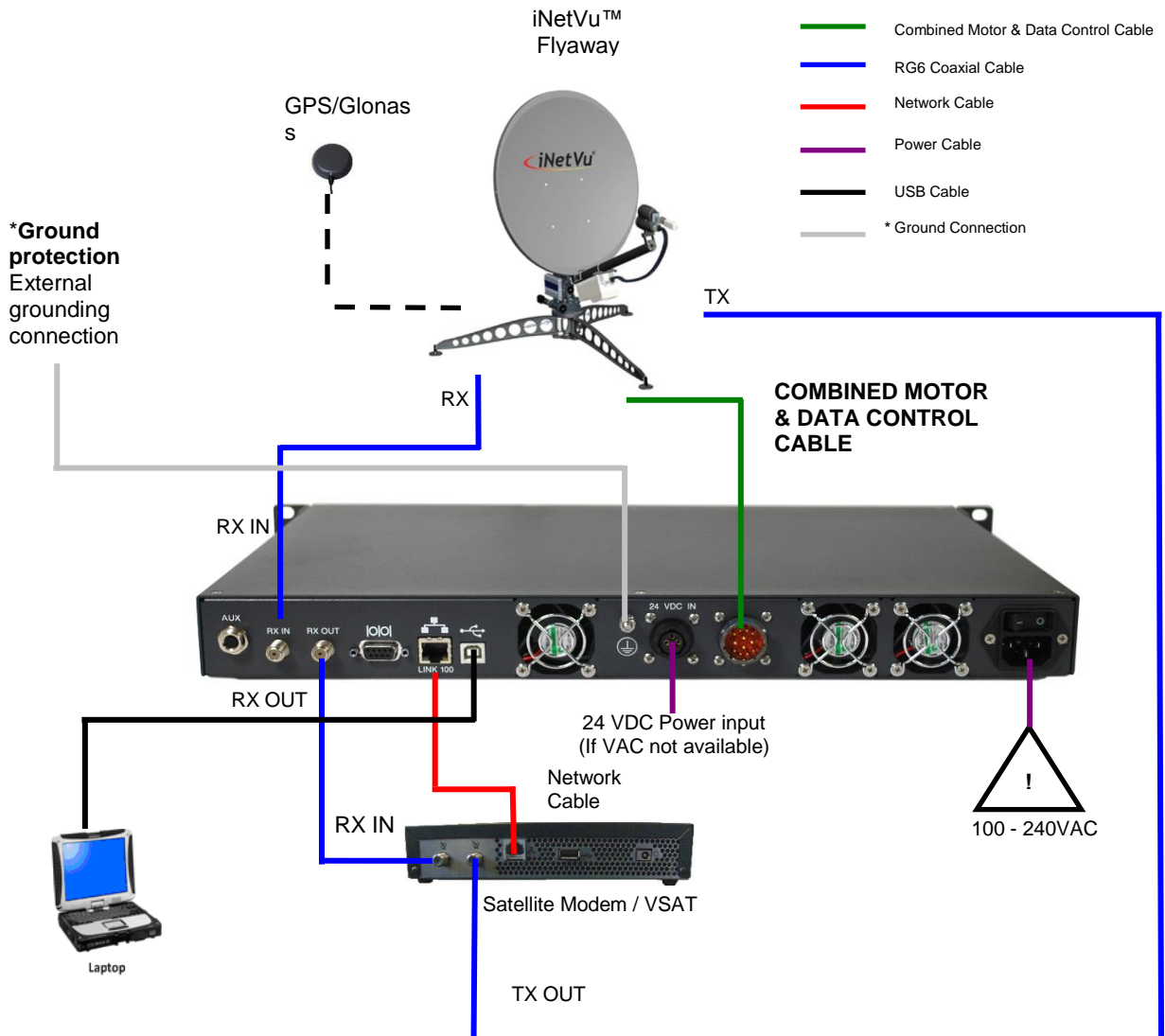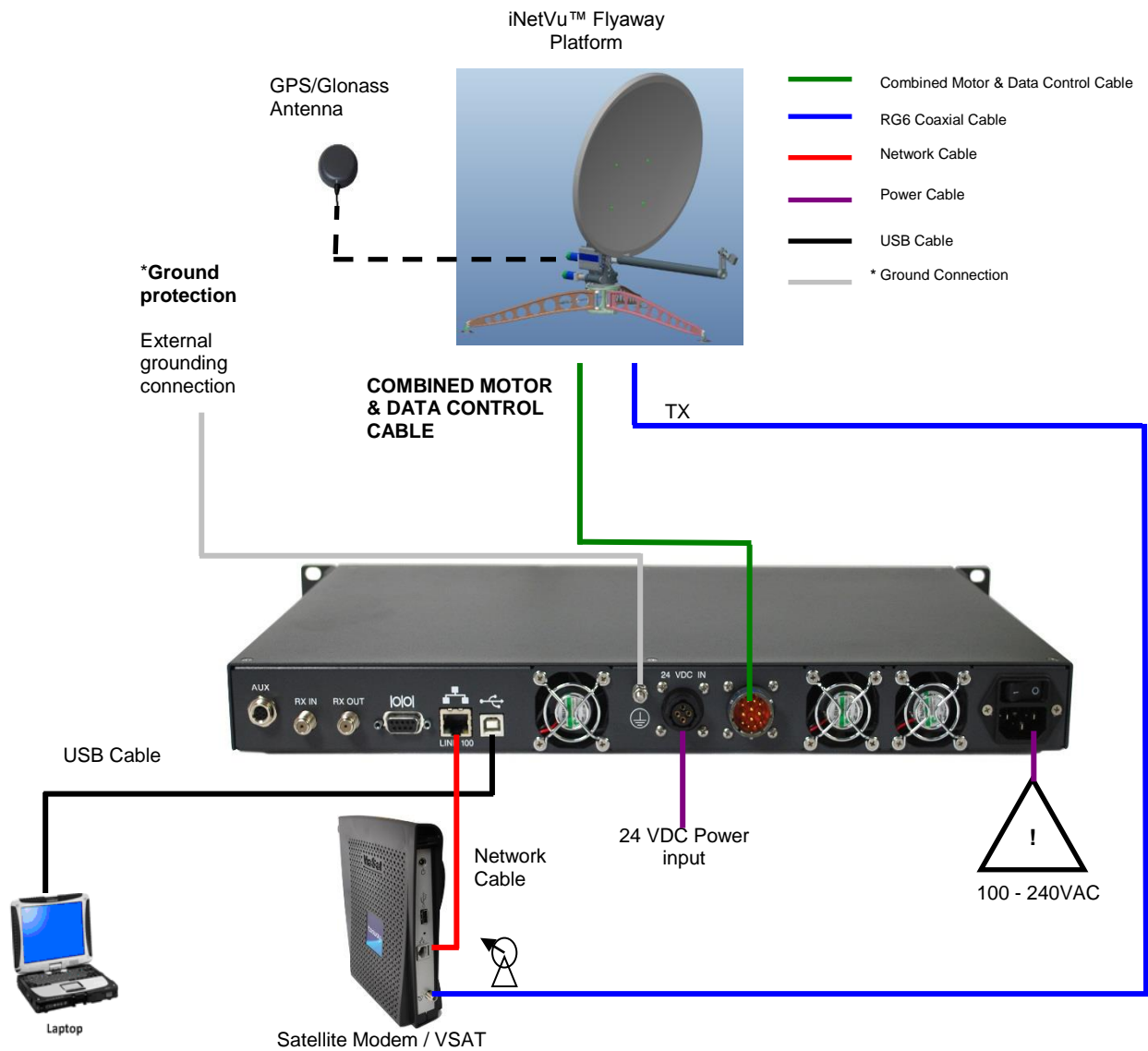
4.5 Typical USB Communication Interface - Ka

iNetVu™ Flyaway
Platform

GPS/Glonass
Antenna

Combined Motor & Data Control Cable

RG6 Coaxial Cable

Network Cable

Power Cable

USB Cable

* Ground Connection

*Ground
protection

External
grounding
connection

COMBINED MOTOR
& DATA CONTROL
CABLE

TX

AUX   RX IN   RX OUT |o|o| LIN 100   24 VDC IN

USB Cable

Network
Cable

24 VDC Power
input

!

100 - 240VAC

Laptop

Satellite Modem / VSAT

Fig. 10:   USB Configuration Interface with Ka Antenna

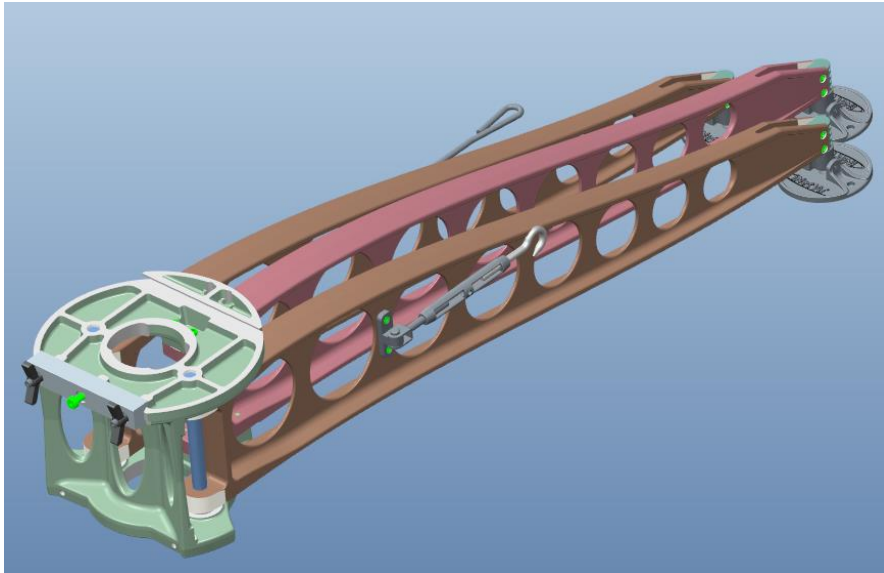## *Recommended for proper grounding of iNetVu® systems.

WARNING!!!
**Prior to operation you must use ballasts or anchors to
weigh down the fly-away at all times, failing to do so
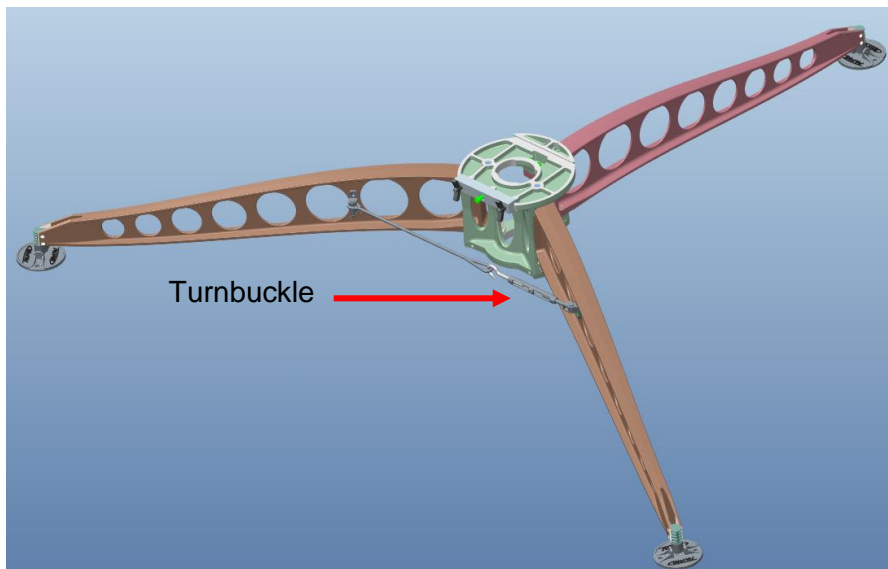may result in property or equipment damage.**

5. Assembly and Disassembly

5.1 Assembly Procedure
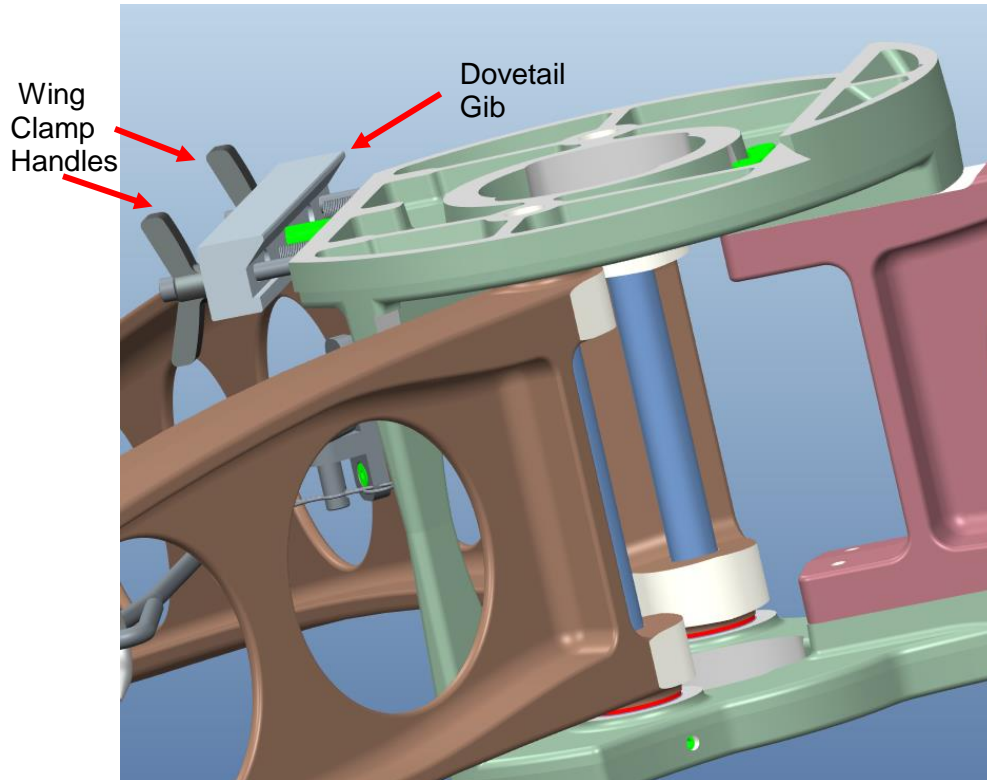
1) Open Tripod & Feed Arm case and remove Tripod.

2) Expand out Tripod legs to maximum distance until they are up against the stops, hook turnbuckle onto tension link. Rotate Turnbuckle applying tension to lock the legs.

3) Loosen Wing Clamp Handles to spring open the Dovetail Gib in order to install the AZ/EL assembly in place.

4) Remove AZ/EL assembly from case. Slowly lift the assembly upwards out of the case.
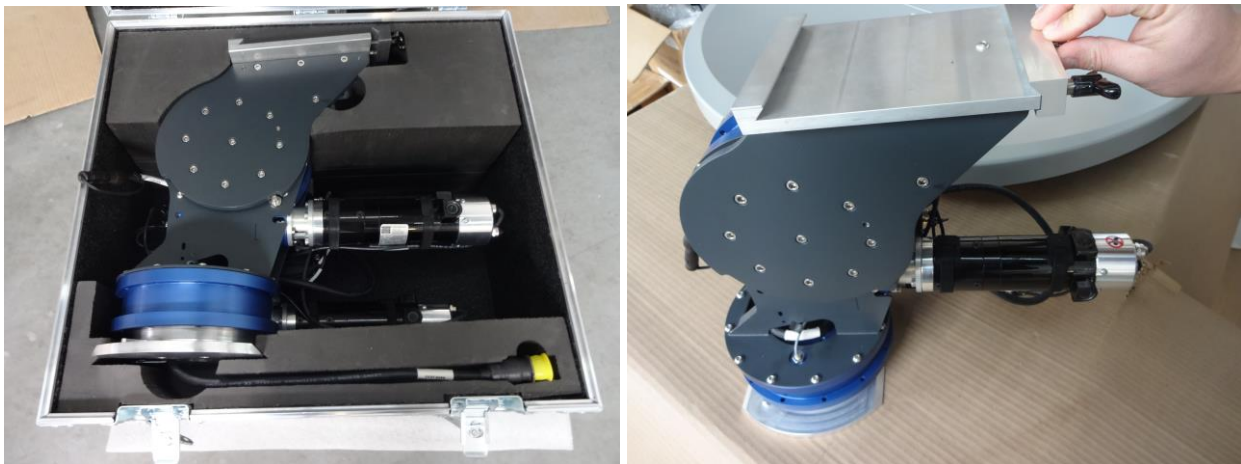
IMPORTANT - *do not handle AZ/EL with the (7720) on-board Remote Drive Module or drive motors during this operation as it will cause damage. Slowly lift out AZ/EL ensuring cable does not get caught on anything inside the case.*

5) Feed 7720 power and data cable through center of tripod and mount AZ/EL assembly aligning AZ Dovetail Locking Plate on Tripod Dovetail Gib. Lock AZ/EL assembly in place using the Dovetail Gib Wing Clamp Handles.
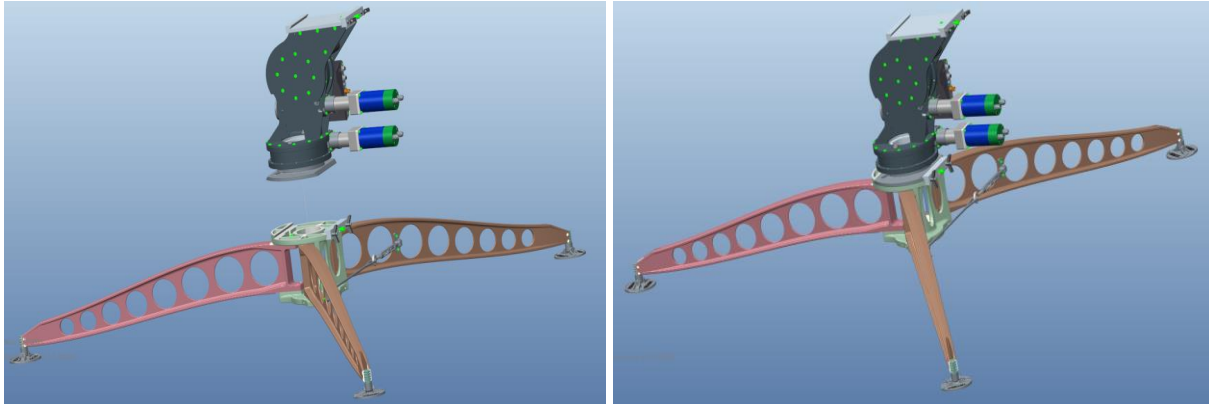
6) Loosen the (EL) Wing Clamp Handles on the Elevation Clamp Assembly to allow reflector bottom segment to be installed.
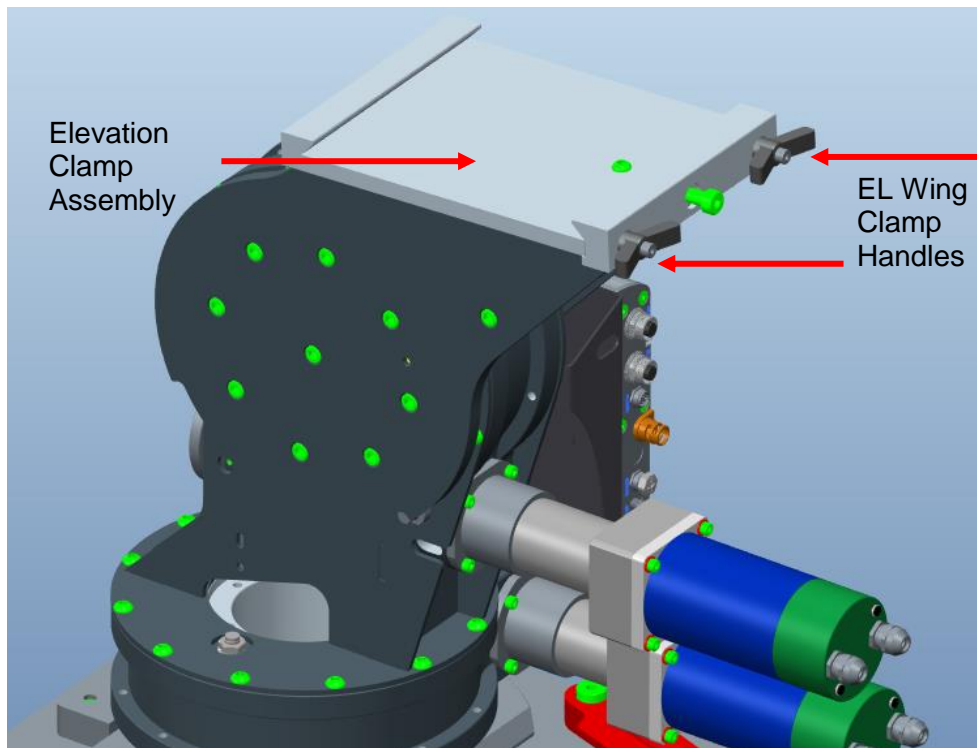
7) Mount reflector bottom segment supporting it while it's being installed. With one hand supporting the reflector segment and with the other align and tighten the Wing Clamp Handles on the Elevation Clamp assembly.
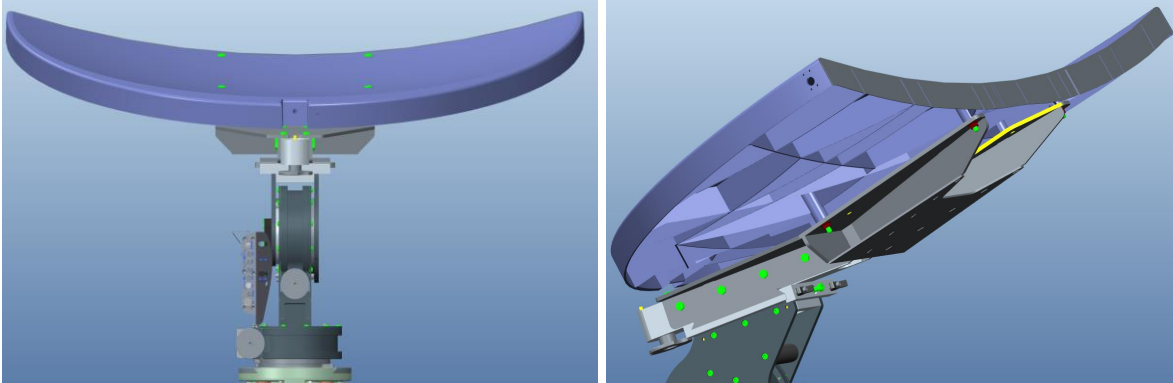
8) Mount top reflector segment. Lock into place using reflector Cam Clamp lever.

9) Install Feed Arm after removing it from case. Align locking pin on Feed Arm Socket with Feed Arm notch. Turn Feed Arm Captive Knob to fasten.

Captive Knob

10) Feed the IFL cable through the center of the AZ/EL drive and through the tripod center same as was done with the Power/Data cable.
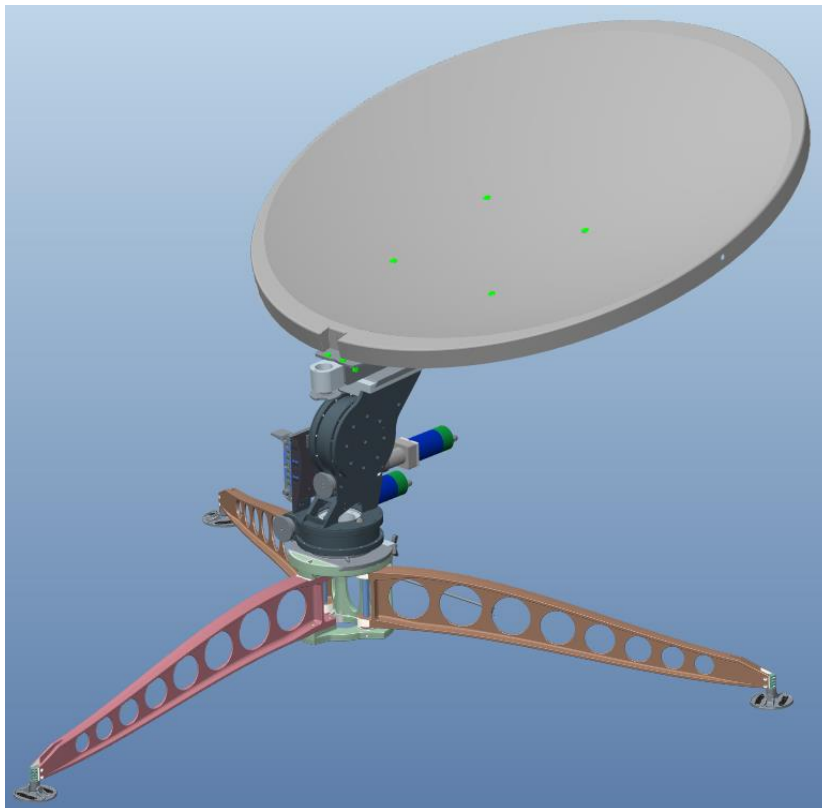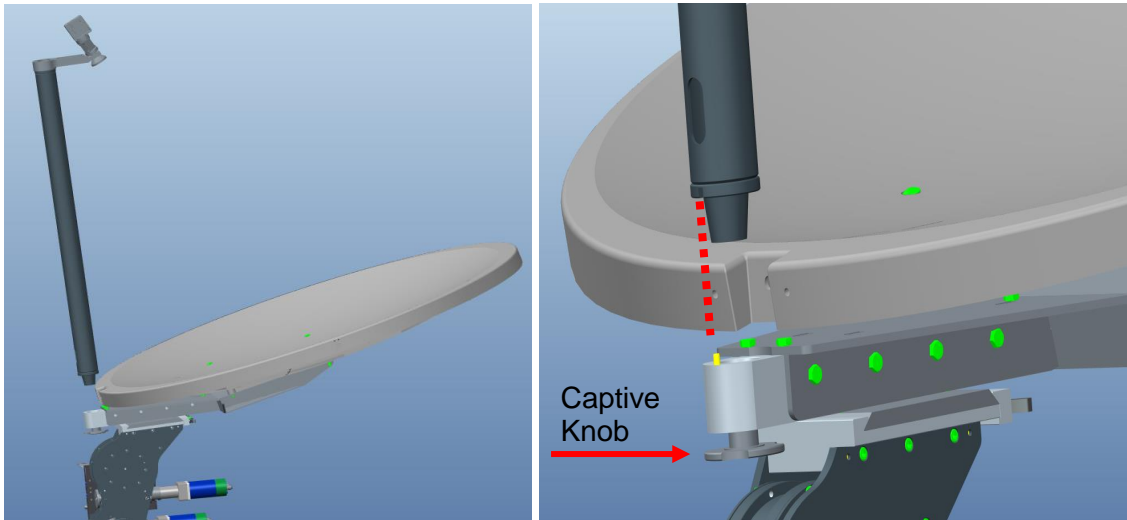
11) Connect compass cable to compass quick connect connector coming from 7720 Remote Drive Module. Line up the pins of the connector and quick connect to avoid damaging the pins.

12) Connect Power/Data cable and IFL cable coming from 7710 controller to their respective connections at base of antenna.

CAUTION	*Indicates a situation or practice that might result in property or equipment damage. Ensure Sensor, Motor and RX/TX cables are all connected prior to powering on 7710 Controller.*

13) Plug power cable into power source and power on the controller. There should be no blinking or RED fields on the Controls screen on the iNetView application or on LCD.

⚠	**WARNING!!!** Prior to operation you must use ballasts or anchors to weigh down the fly-away at all times, failing to do so may result in property or equipment damage.

14) See section (4) for controller connectivity based on your desired connection preferences.

15) Congratulations, you have successfully assembled the iNetVu® Flyaway System and are ready for Satellite search!
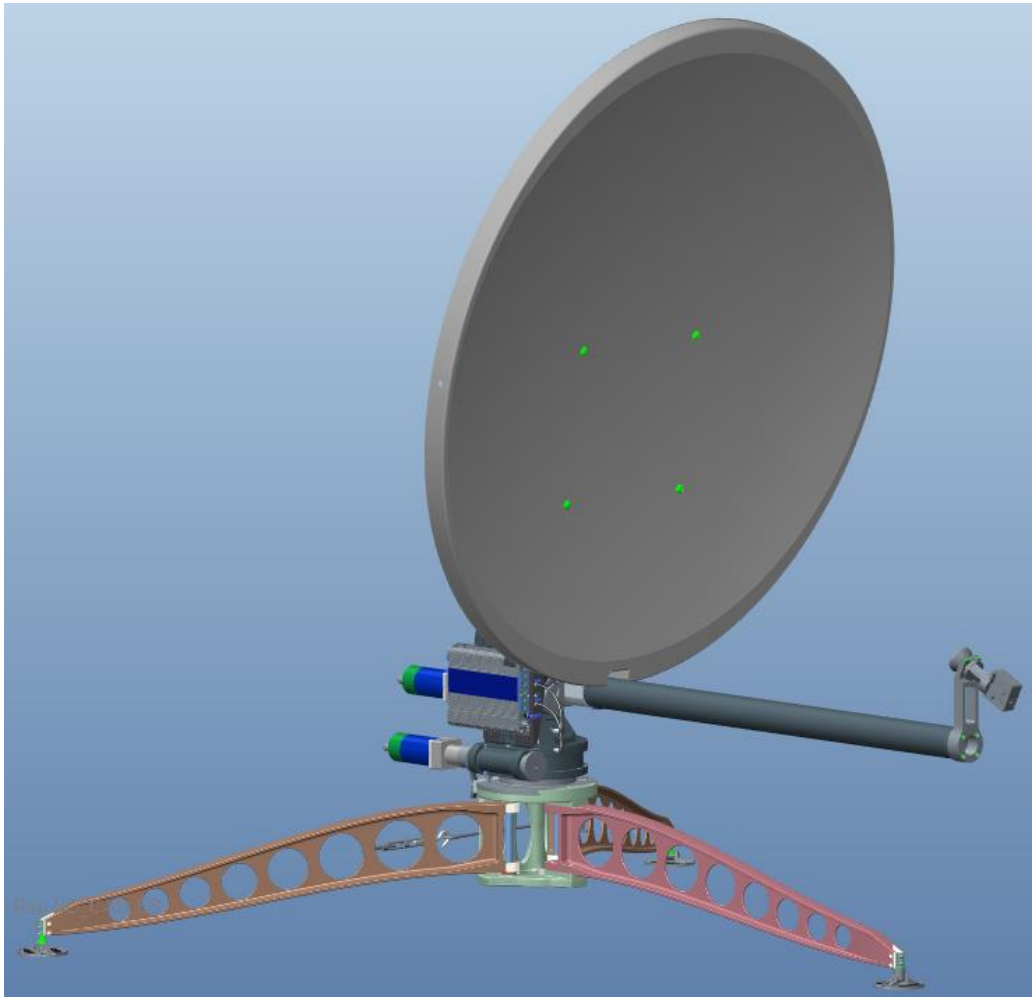
5.2 Disassembly Procedure

1) Click deploy Antenna icon on the iNetVu Controls screen. Antenna should deploy to **EL=30, AZ=0 and PL=0**.

Reflector Assembly Removal

2) Unhook the three (3) Cam Clamp levers holding the two-piece reflector together, and detach the top reflector assembly

3) Place top reflector section in packaging case as shown in the image; note the positioning of the back reflector section in reference to the way it sits in the case.

Lift flap up to place top section in
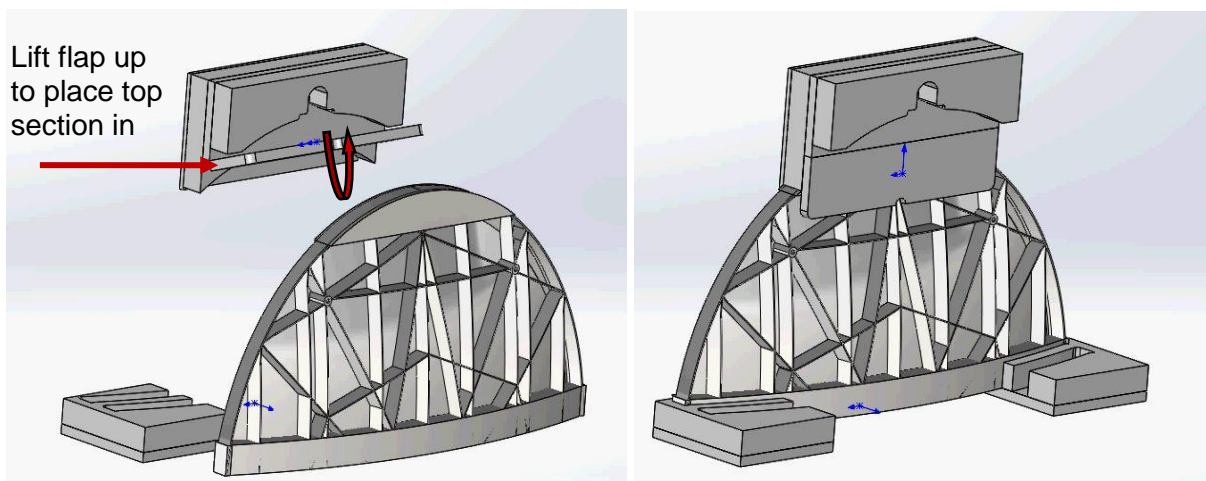
4) Stow Fly-Away and power off the 7710 Controller.

CAUTION   *Ensure to power off the 7710 Controller prior to disconnecting cables.*

5) Disconnect compass cable from the 7720 remote drive module, disconnect POL Motor and POL Sensor cables if unit has them connected.

6) Disconnect and remove IFL cable(s) by pulling it through center of drive assembly.

7) Turn Feed Arm Captive Knob to loosen Feed Arm, remove and store in case.

Feed Arm
Captive
Knob
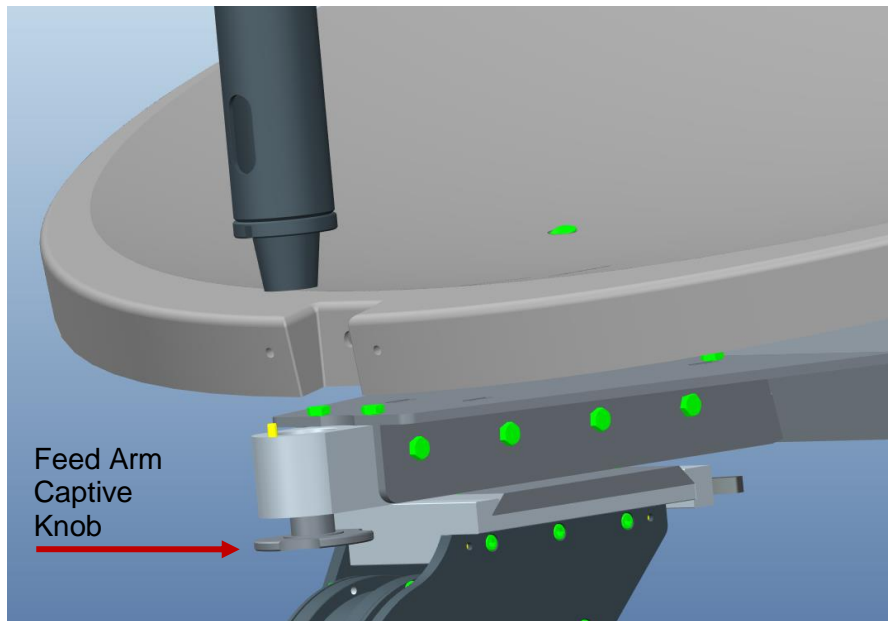
8) Detach and remove the bottom section of the Reflector, loosen wing clamp handles on elevation clamp assembly and carefully slide bottom Reflector section out.
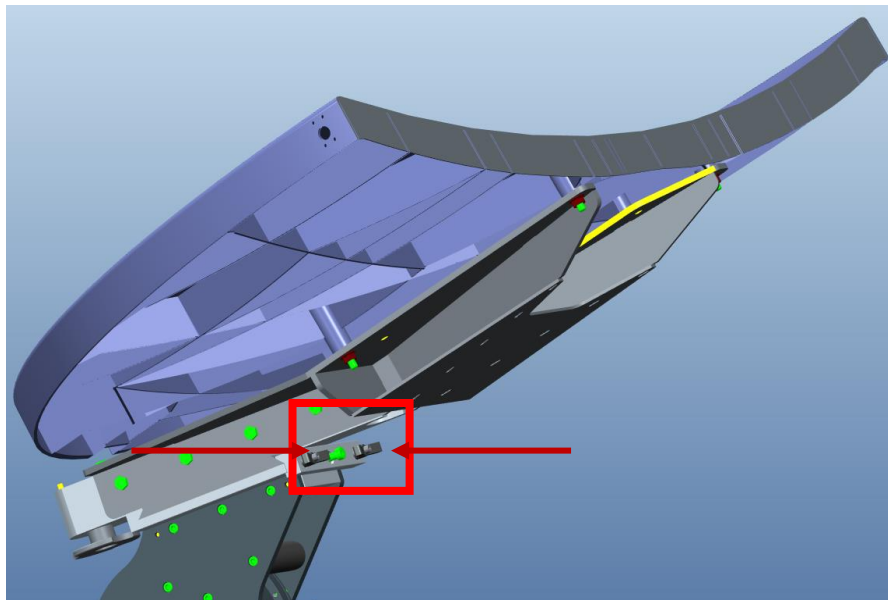
9) Place bottom reflector section in the packaging case, close and lock the case.
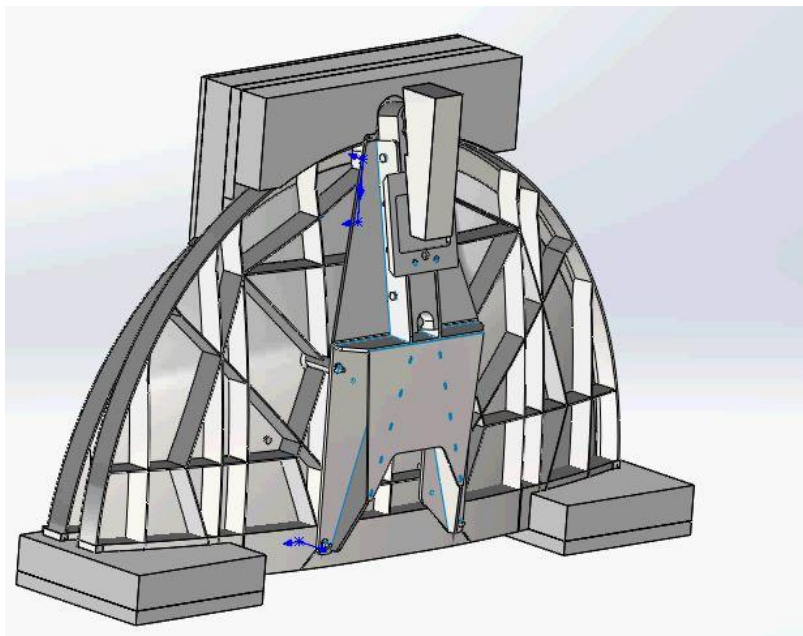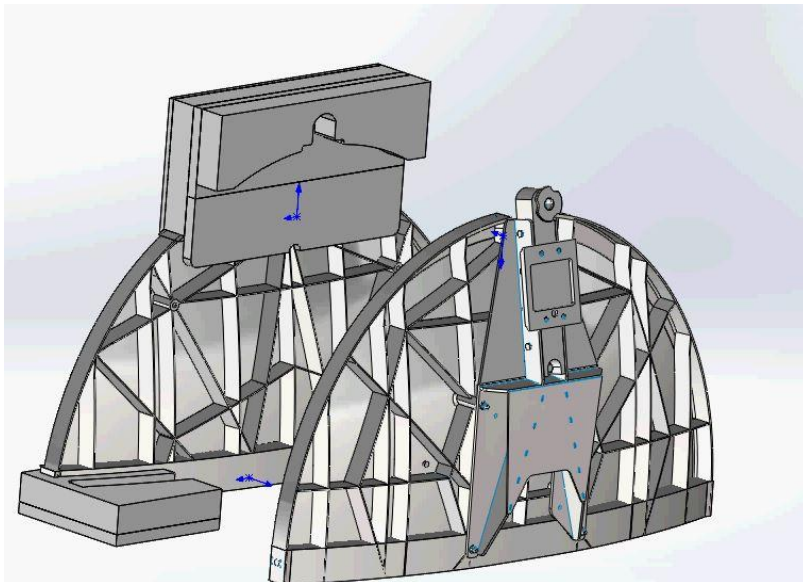
10) Remove AZ/EL assembly by loosening Wing Clamp Handles and sliding the AZ/EL assembly off the tripod guiding Power/Data cable connector through tripod center.
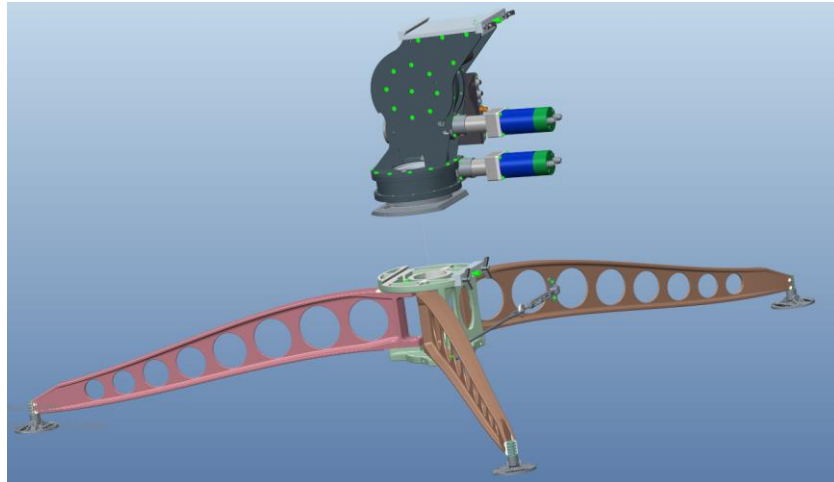
IMPORTANT: do not handle/lift using the on-board Remote Drive Module (7720) for this operation as it will cause damage.

11) Place AZ/EL assembly in AZ/EL base case and lock down in place.
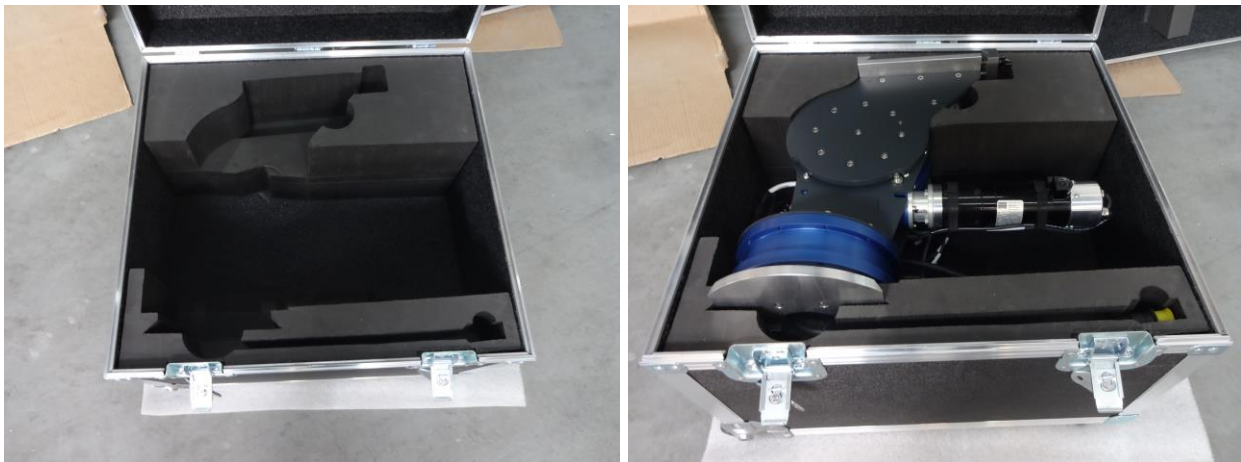
12) Release the tension on the Turnbuckle and remove Turnbuckle hook from Tension Link that will allow the folding of the Tripod.

13) Fold Tripod and place in Tripod/Feed case.

Case Top View
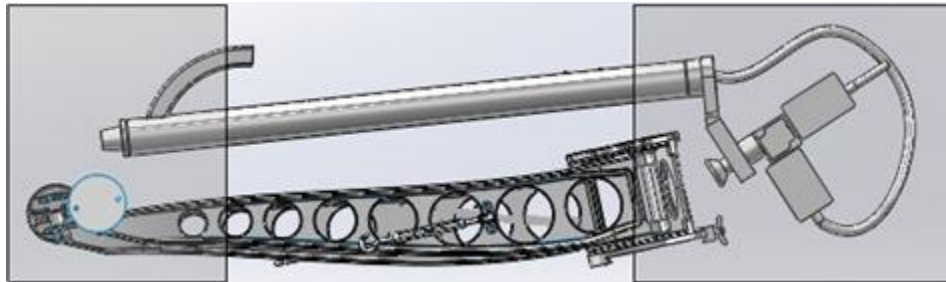
14) Close and lock all cases.

15) Fly-1202 disassembly is now complete.

6. Appendix

Appendix 1. Default Limits

Elevation Offset

	A1206A	A1206C
EL OFFSET	23.5	21.5

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

Compass Reading Elevation

	PLATFORM TYPES	
	A1206A	A1206C
COMPASS READING ELEVATION	32	32

Table 3:   Azimuth Potentiometer Default Values

Appendix 2: Compass Direction and System Ref. AZ Table

Direction	System Ref. AZ	Search Window Starting Angle
North (N) = 0	0	0
North West (NW) = 45	-45	-45
East (E) = 90	-90	-90
South East (SE) = 135	-135	-135
South (S) = 180	-180	-180
South West (SW) = 225	135	135
West (W) = 270	90	90
North West (NW) = 315	45	45

```
                        N
                      ±180

        135                      -135


    W                                 E
    90                                -90


        45                        -45

                     South
                       0
                  AZ Reference
                     Point
```
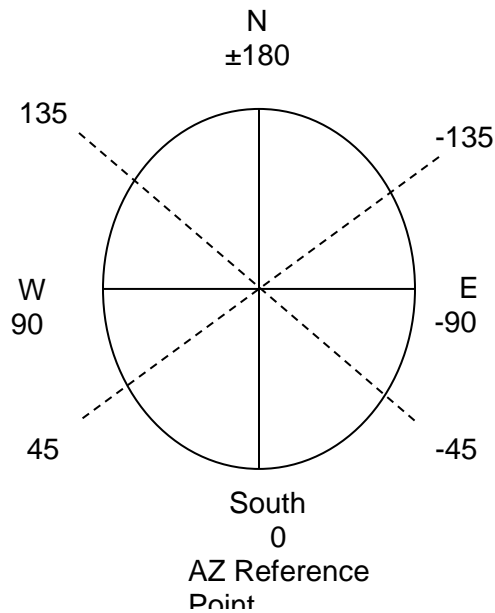
Note: Antenna reference point is 0˚ which means the reflector is pointing south with reference to the back facing North. The search window reference starting point will be the System Ref. AZ value, use above table and diagram to figure out which way the Antenna must be pointed (System Ref. AZ starting point) in order to set the AZ Window Size if an area is required to be excluded or blocked off from the search

Appendix 3: Fly-1202 ABCD Dimensions

1.2m Reflector (Ku-Band)

A – 36.72" (932.7mm)
B – 37.87" (961.9mm)
C – 52.71" (1338.8mm)
D – 51.57" (1309.9mm)
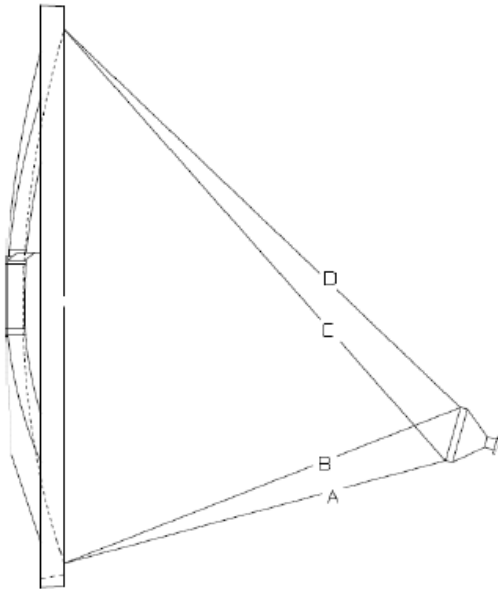
Reference Dimension Locations

Fig. 11:   ABCD Geometry Dimensions

Note: The ABCD dimensions are preset by the manufacturer and should not be adjusted without C-COM's guidance. Contact C-COM Satellite Systems Inc. before performing any adjustments to the POL Cage which will directly affect the ABCD Dimensions.

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Appendix 4: Declaration of Conformity

Declaration of Conformity

Application of Council Directive   **EMC Directive** 2004/108/EC

Low Voltage Directive 2006/95/EC

Standards to which Conformity is Declared   **CISPR 22:2008/EN55022 2008, Class A**
CISPR 24:2010/EN55024 2010 (+A1+A2)
FCC 47 Part 15 2013 Class A
ICES 003 2012 Class A
IEC/EN 61000-3-2: 2005
IEC/EN 61000-3-3: 2008, A1 :2001+A2 :2005
IEC/EN 61000-4-2: 2008 ; IEC/EN 61000-4-3: 2010 ; IEC/EN 61000-4-4: 2012 ;
IEC/EN 61000-4-5: 2005 ; IEC/EN 61000-4-6: 2008 ; IEC/EN 61000-4-8: 2009 ;
IEC/EN 61000-4-11: 2004;
IEC/EN 60950-1: 2005, AM 1:2009 and Am 2:2013; plus European Group
Differences EN60950-1/A12:2011
CAN/CSA C22.2 No. 60950-1/A1:2011
UL 60950-1/R:2011-12.;

Manufacturers Name   **C-COM Satellite Systems Inc.**

Manufacturers Address   **2574 Sheffield Road, Ottawa, Canada, K1B 3V7**

Importers Name   (optional);   Importers Address   (optional)

Type of Equipment   **iNetVu Satellite Antenna**

Model Number   **iNetVu 7710 Controller, Model C7710A**

FCC/CE Marked   2014

Serial No. (optional)   Year of Manufacture (Optional)

I, the undersigned, hereby declare that the equipment specified above conforms to the above Directives and Standards.

Signed on behalf of the Manufacturer and Importer

Place   **Ottawa, Canada**   Signature:
Date   **July 15, 2014**   Full Name: **Dr.Leslie Klein, P.Eng.**
                                     Position: **President & CEO**