



iNetVu® 3000C Controller User Manual
Compatible with HW 8.0+

The iNetVu® brand and logo are registered trademarks of C-COM Satellite Systems, Inc.
© Copyright 2018 C-COM Satellite Systems, Inc.

1-877-iNetVu6
www.c-comsat.com
Revision 1.8
April 5, 2018

This page is intentionally left blank.

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.

C-COM Satellite Systems Inc. shall not be liable for errors contained herein or direct, indirect, special, incidental or consequential damages in connection with the furnishing, performance or use of this material.

The information contained in this document is subject to change without notice.

Copyright © 2018. All rights reserved. C-COM Satellite Systems Inc.

This document contains information, which is protected by copyright. All rights reserved. Reproduction, adaptation, or translation without prior written permission is prohibited, except as followed under the copyright laws.

Both the iNetVu® and C-COM names and logos are registered trademarks of C-COM Satellite Systems Inc.

Intel® Pentium is a registered trademark of Intel Corporation. Microsoft, Windows, Windows NT and MapPoint are registered trademarks of Microsoft Corporation.

All other product names mentioned in this manual may be trademarks or registered trademarks of their respective companies and are the sole property of their respective manufacturers.

Table of Contents

1. INTRODUCTION.....	5
2. SPECIFICATIONS	6
3. PHYSICAL.....	7
3.1. 7024 Adapter Cable (24VDC).....	9
3.2. 7710/7720 Adapter Cable	9
3.3. Supported Platforms	10
3.3.1. Legacy and New Gen platforms (Displayed as Others)	10
3.3.2. Operational with 7720 Remote Drive Module (Canbus).....	10
3.4. Typical 3000C Connection - 12V Power Supply Motor Adapter	12
3.5. Typical 3000C Connection – 24V Power Supply Motor Adapter	13
3.6. Typical 3000C (Canbus) Connection with cable Adapter (7720 RDM).....	14
3.7. Manual Control Button Operation	15
3.8. LCD Display and Power Button	19
4. INSTALLATION.....	20
4.1. Setup	20
5. APPENDICES.....	22
5.1. LCD Display Definitions Table	23
5.2. Firmware Update.....	27
5.3. Fuse Replacement	35

NOTICE: For 3000C Hand Held Controllers with hardware version 7.0 and lower refer to User Manual version 1.4. This manual is for hardware version 8.0 and above with support for Firmware version 7.3.

1. INTRODUCTION

The iNetVu® 3000C Hand-Held Controller gives users the freedom of operating any iNetVu® Platform without the need to connect to a PC or iNetVu® Auto-Deploy controller. The new improved 3000C controller now supports platforms that are equipped with 7720 Remote Drive Module as well as the Legacy and New Generation platforms.



Fig. 1: iNetVu® 3000C Controller

The iNetVu® 3000C Hand Held Controller is a fully functionally unit that allows for quick and easy use when times call for it. This unit is ideal for installations, demos and troubleshooting with the ability to raise, stow and move the iNetVu® platform(s) with out the use of iNetVu® ACU Controller and or PC. This handheld is compatible with all iNetVu® Mobile, Drive-Away and Flyaway platforms.

The iNetVu® 3000C compact design features a 6 button movement control of the 3-axis with an adjustable 10- speed operation. The unit has a Jog control feature allowing for manual satellite search and an LCD screen for platform sensor and motor movement feedback. Not compatible with ACFLY-1200 (1210 AC) Flyaway. The unit can run off of any 12V or 24V DC Power Supply.

2. SPECIFICATIONS

Electrical

Power Input	
3000C-12	12VDC @ 15 Amp (Max.)
3000C-24 ⁽¹⁾	24VDC @ 8 Amp (Max.)
3000C-24-CAN ⁽²⁾	24VDC @ 8 Amp (Max.)
Motor	9 pin; 4.5m (15 ft) cable (optional)
Sensor	DB-26; 4.5m (15 ft) sensor cable (optional)

Environmental

Operating temperature	-20° to +60° C (-4° to +140° F)
Storage temperature	-40° to +70° C (-40° to +158° F)
Standard	RoHS compliant

Mechanical

Dimensions	W: 8 cm (7") H: 13 cm (5") D: 5 cm (2")
Weight	500 gm (1 lbs)

3. PHYSICAL

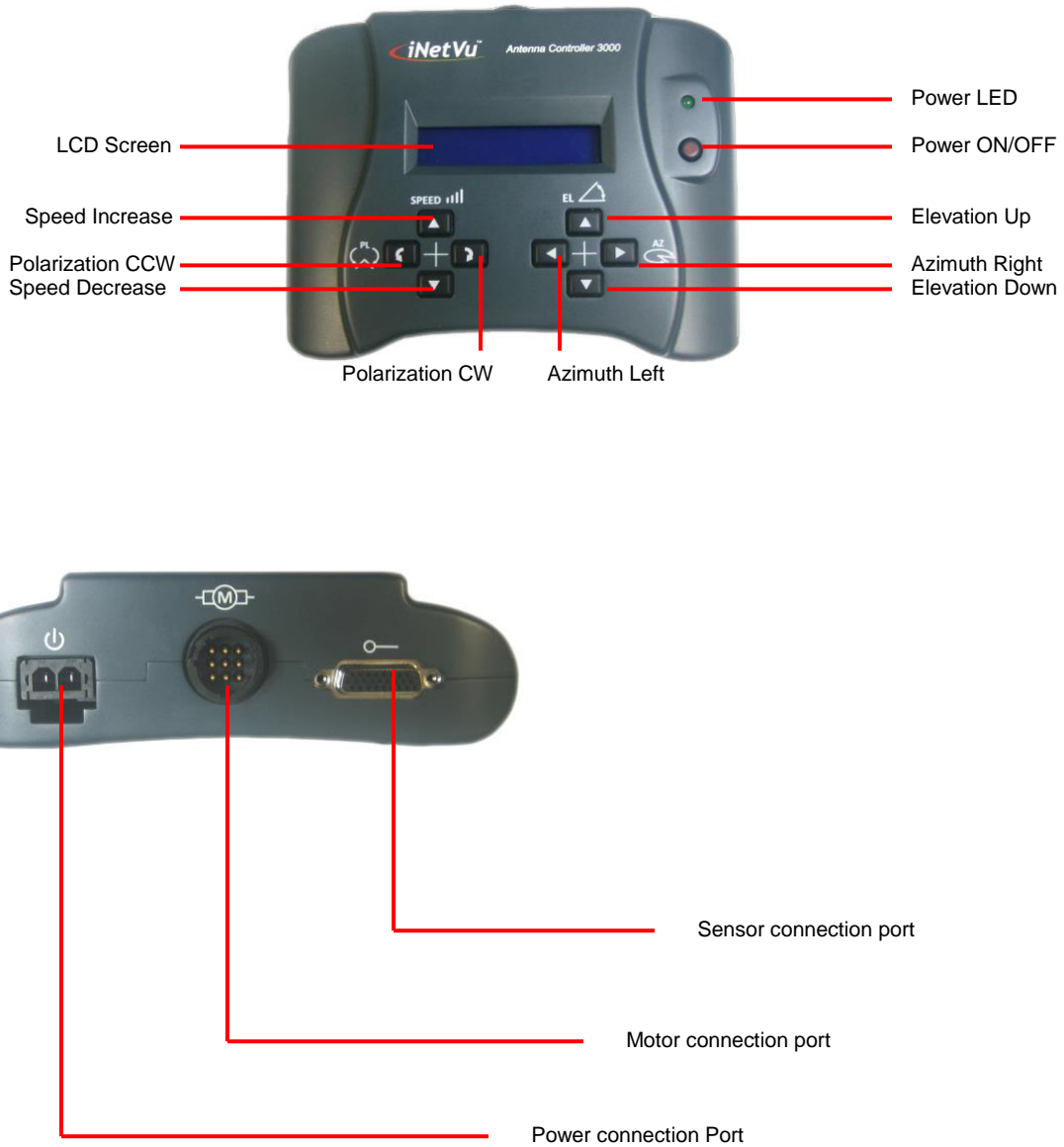


Fig. 2: Face and Back View of 3000C Antenna Controller



Fig. 3: 3000C Controller with Serial Port Option (New Version)



Fig. 4: Original 3000C Controller without Serial Port Option

3.1. 7024 Adapter Cable (24VDC)

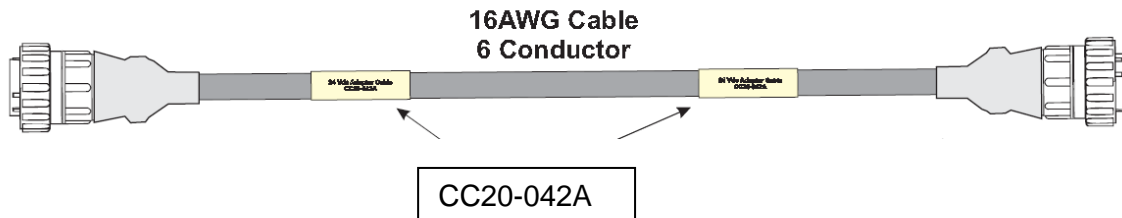


Fig. 1: Cable Adapter for Platforms Compatible with 7024 Controllers

3.2. 7710/7720 Adapter Cable

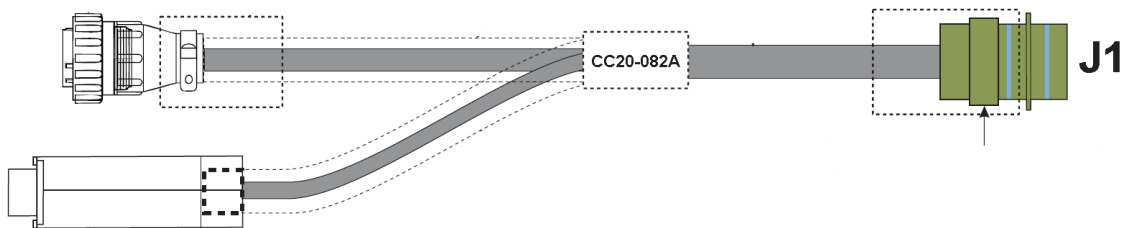


Fig. 2: Cable Adapter for Platforms equipped with 7720 Remote Drive Module

3.3. Supported Platforms

Supports all Legacy and New Generation platforms. Also now supports New Gen Platforms that are equipped to work with the 7720 Remote Drive Module.

3.3.1. Legacy and New Gen platforms (Displayed as Others)

- A0750A** - iNetVu® A750A (.75m) Mobile Platform (Ku Band)
- A0755A** - iNetVu® A0755A - New Gen Drive-Away (Ka Band circular)
- A0980A** - iNetVu® A980A (.98m) Mobile Platform (Ku Band)
- A0981A** - iNetVu® A981A (.98m) New Gen Drive-Away Platform (Ku Band)
- A0985A** - iNetVu® .98m New Gen Drive-Away (2 Axis Ka Band circular)
 - **Ka-98G** (Skyware Global Feedboom)
 - **Ka-98H** (HNS Feedboom)
 - **Ka-98V** (Viasat Feedboom)
- A0985B** - iNetVu® .98m New Gen Drive-Away (3 Axis Ka Band circular)
 - **Ka-98G** (Feedboom)
- A1200B/C** - iNetVu® A1200B/C (1.2m) Mobile Platform (Ku Band)
- A1200P** - iNetVu® A1200P (1.2m) Flyaway Platform (Ku Band)
- A1200Q** - iNetVu® Fly-1201 (1.2m) Flyaway Platform (Ku Band)
- A1201A** - iNetVu® A1201A (1.2m) New Gen Drive-Away Platform (Ku Band)
- A0120A** - iNetVu® FMA-120 – 1.2 Fixed Motorized (Ku Band)
- A0121A** - iNetVu® FMA-120 – 1.2 New Gen Fixed Motorized (Ku Band)
- A0125A** - iNetVu® FMA-120Ka – 1.2 New Gen Fixed Motorized (Ka Band)
- A1500A** - iNetVu® A1500A Mobile Platform (Ku Band)
- A1500B/E** - iNetVu® A1500B Mobile Platform (Standard C Band Linear/INSAT)
- A1500C** - iNetVu® A1500C Mobile Platform (C Band Circular)
- A1800A** - iNetVu® A1800A Mobile Platform (Ku Band)
- A1800B/E** - iNetVu® A1800B Mobile Platform (C Band Standard Linear/INSAT)
- A1800C** - iNetVu® A1800C Mobile Platform (C Band Circular)
- A0180A** - iNetVu® A0180A - 1.8 Fixed Motorized (Ku Band)
- A0180B/E** - iNetVu® A0180B/E - 1.8 Fixed Motorized (Standard C Linear/INSAT)
- A0180C** - iNetVu® A0180C - 1.8 Fixed Motorized (C Band Circular)
- A0180D** - iNetVu® A0180D - 1.8 Fixed Motorized (X Band Circular)
- A1801A** - iNetVu® A1801A - 1.8 Drive-Away (Ku Band)
- A1801B/E** - iNetVu® A1801B - 1.8 Drive-Away (C Band Standard Linear/INSAT)
- A1801C** - iNetVu® A1801C - 1.8 Drive-Away (C Band Circular)

3.3.2. Operational with 7720 Remote Drive Module (Canbus)

- A0755A** - iNetVu® A0755A - New Gen Drive-Away (Ka Band circular)
- A0756A** - iNetVu® 756 – Fly-Away Ka-Band Viasat Transceiver
- A0985A** - iNetVu® .98m New Gen Drive-Away (2 Axis Ka Band circular)
 - **Ka-98G** (Skyware Global Feedboom)
 - **Ka-98H** (HNS Feedboom)
 - **Ka-98V** (Viasat Feedboom)

A0985B - iNetVu® .98m New Gen Drive-Away (3 Axis Ka Band circular)

- **Ka-98G** (Skyware Global Feedboom)

A0986A - iNetVu® .98m Fly-Away Ka Band 2 Axis

A0986B - iNetVu® .98m - Fly-Away Ka-Band 3 Axis

- **Ka-98G** (Skyware Global Feedboom)
- **Ka-98H** (HNS Spaceway Feedboom)

A0986C - iNetVu® .98m Fly-Away Ku-Band X-POL

A0987B - iNetVu® .98m Mobile Platform, SMC Refl, 3 Axis (Ka Band)

A1201A - iNetVu® 1201 (1.2m) - New Gen Drive-Away Platform (Ku Band)

A1205A - iNetVu® (1.2m with aluminum EL arm) New Gen Drive-Away Platform
(Ka Band with different types of Transceivers)

A1205B - iNetVu® Drive-Away Platform 1.2m, (3 Axis, Skyware Global, Ku Band)

A1205C - iNetVu® (1.2m with aluminum EL arm) New Gen Drive-Away Platform (Ku Band)

A1206A - iNetVu® Fly-Away Platform 1.2m, (2 Axis Viasat Ka Band)

A1206C - iNetVu® Fly-Away Platform 1.2m, (3 Axis, Ku Band)

A1207A - iNetVu® New Gen Drive-Away Platform 1.2m, (2 Axis, Skyware Global)

A1505C - iNetVu® New Gen Drive-Away Platform 1.2m, (3 Axis, Ku Band, X-POL)

A1505E - iNetVu® New Gen Drive-Away Platform 1.2m, (3 Axis, C-Band, Linear)

A1801A - iNetVu® 1.8m Drive-Away (Ku Band)

A1805C - iNetVu® Platform, 1.8m Drive-Away, (3 Axis Ku Band, X-POL)

A1805D - iNetVu® Platform, 1.8m Drive-Away, (2 Axis, C-Band, Circular)

A1805E - iNetVu® Platform, 1.8m Drive-Away, (2 Axis, C-Band, Linear)

A1806C - iNetVu® Fly-Away, 1.8m 3 Axis Ku-Band, X-POL

A1806D - iNetVu® Fly-Away, 1.8m Drive-Away, (2 Axis, C-Band, Circular)

A1806E - iNetVu® Fly-Away, 1.8m Drive-Away, (3 Axis, C-Band, Linear)

3.4. Typical 3000C Connection - 12V Power Supply Motor Adapter

The typical connection configuration for each iNetVu® System will be the same regardless of Mobile or Flyway Platform.



Fig. 3: Typical Connection Configuration

3.5. Typical 3000C Connection – 24V Power Supply Motor Adapter

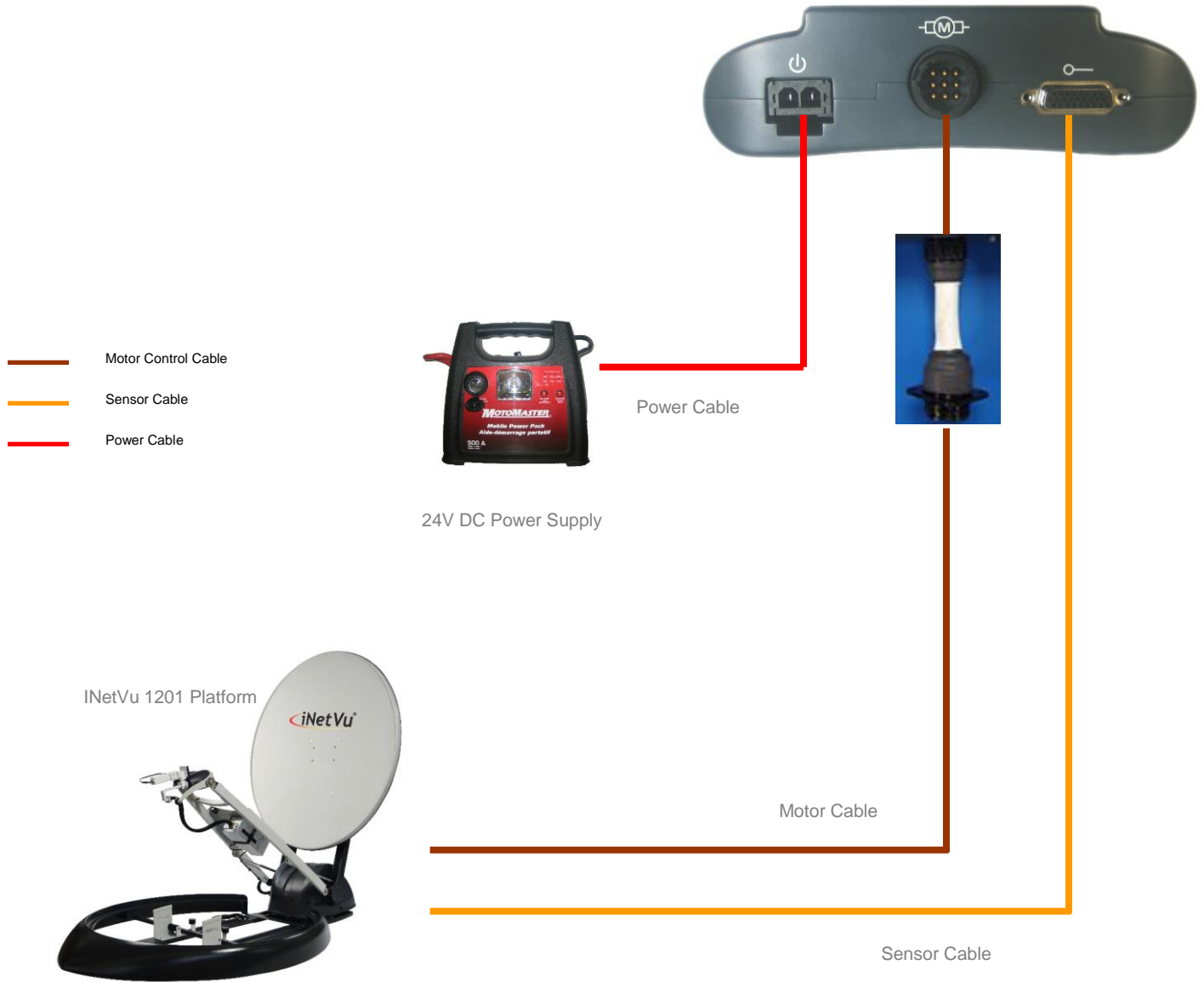


Fig. 4: Typical Connection Configuration

3.6. Typical 3000C (Canbus) Connection with cable Adapter (7720 RDM)

The typical connection configuration for each iNetVu® System will be the same regardless of Drive-Away or Flyway Platform which are equipped with the 7720 Remote Drive Module.

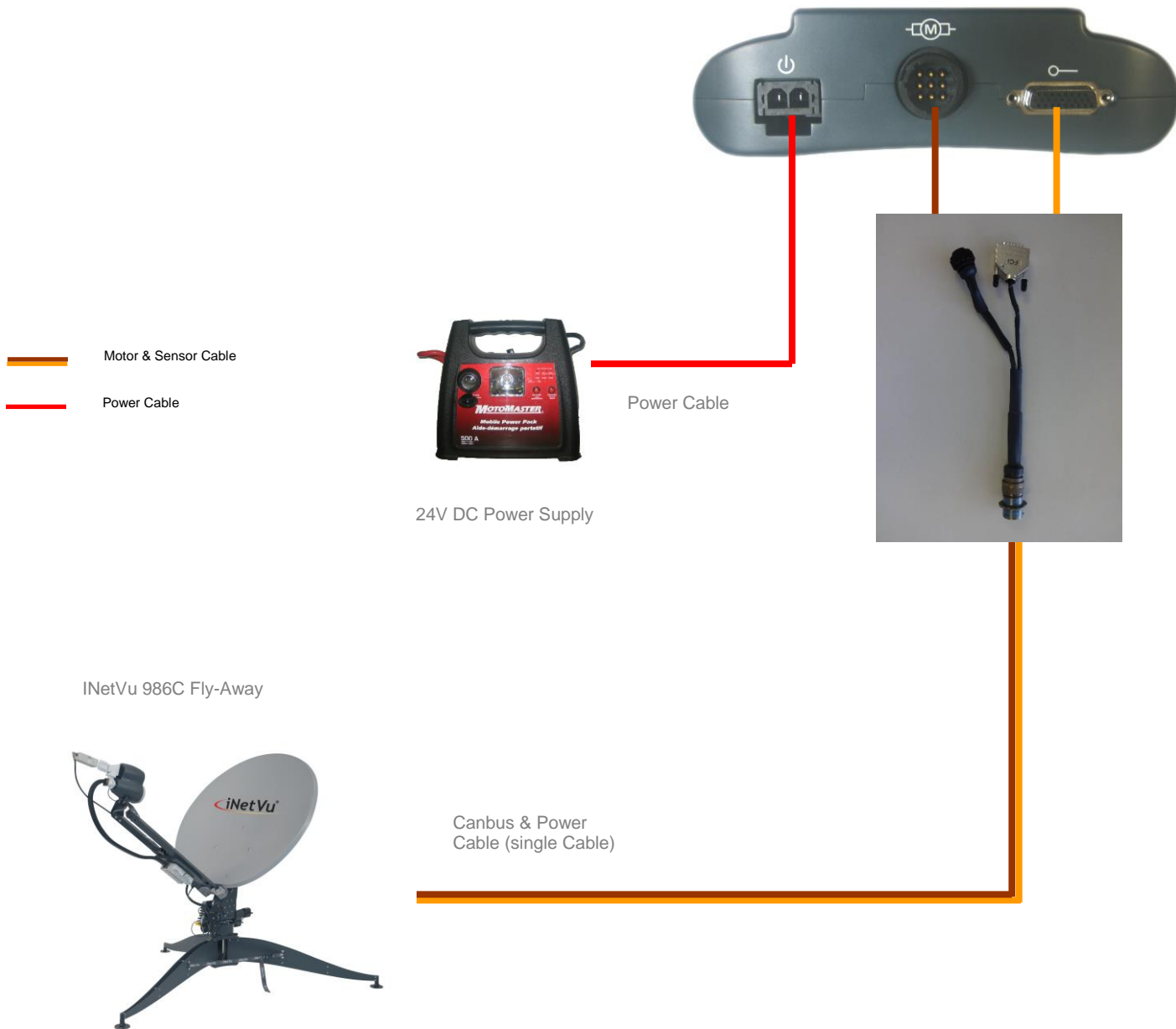


Fig. 5: Typical Connection Configuration for Mounts equipped with 7720 Remote Drive Module

3.7. Manual Control Button Operation

Limit switch	LCD STATUS	EL Movement	AZ Movement	PL Movement
EL UP = ON	EL: U	DOWN ONLY	RT & LT	CW & CCW
EL DN = ON	EL: D	DN IF AZ: S = ON UP IF AZ: S = OFF	NONE	CW & CCW
EL STOW = ON	EL: S	UP ONLY	NONE	NONE
AZ STOW = ON	AZ: S	UP & DOWN	RT & LT	CW & CCW
PL STOW = ON	PL: S	UP & DOWN	RT & LT	CW & CCW IF EL: S = OFF
EL STOW/DN = ON & AZ STOW = OFF	EL: S or EL: D	UP ONLY	NONE	CW & CCW
EL DN = ON & PL STOW = OFF	EL: S	UP & DOWN	NONE	CW & CCW

Table 1. Limit Switch status and allowed movements

Meaning of Abbreviations

AZ - Azimuth
 DN - Down
 EL - Elevation
 PL - Polarization
 LT - Left
 RT - Right

1. Elevation Up / Elevation Down – To move the iNetVu® platform up or down press and hold the required button until angle is reached. Once the desired angle is reached, let go of the depressed button. There is an up limit switch on **EL: U** that will kick in once maximum elevation is reached. EL Movement will be constricted to down only. There is also a down limit switch for the **EL Down** which will appear on the LCD screen as **EL: D** once a certain angle is reached (between 0° and 15°). EL down movement will be allowed only if AZ Stow **AZ: S** was also on, otherwise movement only allowed in up direction. If moving down to stow the down button will stop responding once the **S** is displayed on the LCD screen.

*****Note: During the Stowing operation, Elevation Down (EL: D) will switch over to Elevation Stow Switch (EL: S) on the display once system is fully stowed.**



Moves the Elevation up

Moves the Elevation down

2. Azimuth Left/ Azimuth Right - To move the iNetVu® platform left or right (this is determined by the front and back orientation of the reflector), see Fig .6 for more details regarding platform/reflector orientation. Facing the reflector, press and hold the desired button to move right or left until position required is reached. Moving right will decrease the Azimuth angle while moving left increases the angle. Movement on AZ will not be allowed once **EL: D** or **EL: S** limit switches are triggered. Movement on AZ will be allowed if **EL: U** limit switch is on.

*****Note: Azimuth Stow (AZ: S) and Elevation Down (EL: D) must be on for system to Stow.**



Moves the Azimuth to the left

Moves the Azimuth to the right

3. Polarization Counter-Clockwise / Polarization Clockwise - To move the Polarization clockwise (**CW**) or counter clockwise (**CCW**) press and hold down the button; the diplexer will move in the direction directly relating to the pressed button.

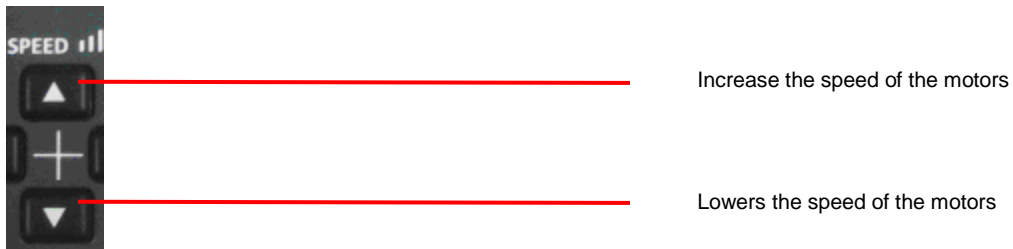
Movement is not permitted on the Polarization if EL Stow (**EL: S**) is on.

Movement is permitted if EL UP (**EL: U**) or EL Down (**EL: D**) is on.

The polarization **PL: S (Stow)** is constantly displayed on the LCD regardless of Azimuth or Elevation position when using handheld with iNetVu® 1200/1800 Mobile Platform.



4. Moving Speed - To increase the speed press the upper button, to decrease it press the lower button. Press and hold either button until desired speed is attained, 1 being the minimum speed while 10 the maximum.



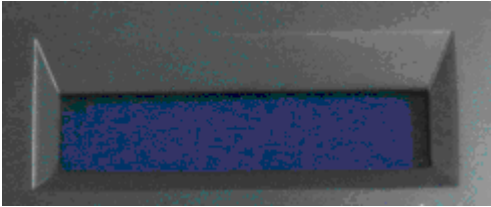
*** Note:** The Manual Movement Buttons allow you to move the antenna in six (6) directions. For the correct point of reference for the directional movements, you must be facing the Mobile Platform's Reflector See Fig 6.



Fig. 6: Orientation Reference for Azimuth and Polarization

3.8. LCD Display and Power Button

1. **LCD Display** - The **LCD** will display the corresponding message in relation to the action of the button that is being depressed. All operation status will be displayed on the LCD screen.



2. **Power Button** – The power button will power up or down the unit and the LED turned off indicates Power **Off**, the LED turned on indicates Power **ON**.



4. INSTALLATION

The iNetVu® 3000C Controller is shipped ready to be used right out of the box with the iNetVu® Mobile, Drive-Away and Flyway Platform(s). The New Hardware Version(8.0+) with Firmware (3.0+) provide enhanced operation and configuration allowing the user to choose from a wider variety of platform types that are now compatible with the 3000C Handheld Controller.

4.1. Setup

1. Connect all of the cables and components as depicted by Fig. 4, 5 & 6. In the previous section.
2. Platforms that are compatible with 7024 Controller require a cable adapter between external cable and the 3000C Controller. Part number of adapter is CC20-042A REV 1.
3. Platforms that are equipped with 7720 **Remote Drive Module** require a cable adapter between external cable and the 3000C Controller. Part number of adapter is CC20-082A REV 1.



4. Power on the iNetVu® 3000C Controller by pressing the power button.

- The controller will display multiple messages during power up.

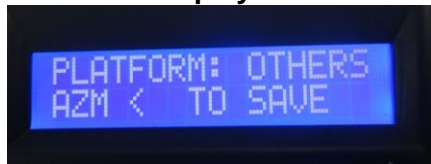


Note: The “PLEASE OPERATE AFTER 30 SECONDS” message will only display for platforms that are equipped to work with 7720 Remote Drive Module after comunication fails or or when cable is not connected to platform.

- The controller will be set to Legacy/New Generation platforms (displayed as OTHERS on LCD) by default. Platforms with 7720 Remote Drive Module will display platform type.

- To change platform type depress EL   simultaneously for 3 seconds after controller has powered up. Use **AZM >** right button to select platform type and **AZM <** left button to save selection. See Appendix for different platform options.

Legacy/New Generation Platforms display







Platforms equipped with 7720 Remote Drive Module display actual platform type









- Select power input option (default is 24V). See Appendix for voltage display and other option selections and settings.
- You have successfully completed the connection and setup of the iNetVu® 3000C Controller and are ready to operate the iNetVu® platforms.

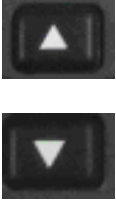
5. APPENDICES

5.1. LCD Display Definitions Table

Action	LCD Display	Comments
POWER Button Pressed when unit is off	3000C CONTROLLER POWERING ON READY EL:XY AZ:Y PL:Y	Displayed for 3 seconds. Displayed after initial screen – stays until another button pressed. The second line displays the unit's status where "X" could be a space, "U" (for Up), "D" (for Down) or "S" (for Stow) while "Y" could be a space or "S".
POWER Button Pressed when unit is on	3000C CONTROLLER POWERING DOWN	Displayed for 3 seconds.
ELEVATION  Button Pressed	ELEVATION UP EL:XY AZ:Y PL:Y	The second line displays the unit's status.
ELEVATION  Button Pressed At minimum position (Stowed)	ELEVATION DOWN EL:XY AZ:Y PL:Y	The second line displays the unit's status.
AZIMUTH  Button Pressed	AZIMUTH RIGHT EL:XY AZ:Y PL:Y	The second line displays the unit's status.
AZIMUTH  Button Pressed At minimum position (Stowed)	AZIMUTH LEFT EL:XY AZ:Y PL:Y	The second line displays the unit's status.

<p>POLARIZATION Button Pressed </p>	<p>POLARIZATION CW EL:XY AZ:Y PL:Y</p>	<p>The second line displays the unit's status.</p>
<p>POLARIZATION Button Pressed  At minimum position (Stowed)</p>	<p>POLARIZATION CCW EL:XY AZ:Y PL:Y</p>	<p>The second line displays the unit's status.</p>
<p>SPEED Button Pressed </p>	<p>SPEED + XX </p>	<p>XX could be within 1 – 10 range. are displayed to indicate speed. 1 block indicates minimum speed while 10 blocks – maximum speed.</p>
<p>SPEED Button Pressed </p>	<p>SPEED - XX </p>	<p>XX could be within 1 – 10 range. are displayed to indicate speed. 1 block indicates minimum speed while 10 blocks – maximum speed.</p>
Action	LCD Display	Comments

<p>UPON STARTUP FOR THE FIRST TIME</p>	<p>VOLTAGE : XXXVDC AZM > TO CHANGE or VOLTAGE : XXVDC AZM < TO SAVE</p> <p>After selection display</p> <p>24VDC VOLTAGE SELECTED or 12VDC VOLTAGE SELECTED</p>	<p>XXX is either "+12" or "+24" depending on the current setting. 24VDC is default.</p> <p>The set voltage value is displayed for 3 seconds.</p>
<p>CHANGE VOLTAGE</p> <p>POLARIZATION </p> <p>and</p> <p>AZIMUTH </p> <p>Buttons pressed and held for 3 seconds after device power up.</p>	<p>VOLTAGE : XXVDC AZM > TO CHANGE VOLTAGE : XXVDC AZM < TO SAVE</p> <p>After selection display</p> <p>24VDC VOLTAGE SELECTED or 12VDC VOLTAGE SELECTED</p>	<p>XX is either "12" or "24" depending on the current setting. 24VDC is default</p> <p>The set voltage option will be displayed until selection choice is made.</p>

<p>MOUNT TYPE CHANGE</p>  <p>EL Buttons pressed and held for 3 seconds after device power up or during power.</p>	<p>PLATFORM: XXX AZM > TO CHANGE or AZM < TO SAVE</p> <p>After selection and save display</p> <p>XXX PLATFORM SELECTED</p>	<p>If changing platform during power up you must wait for the warning message to complete.</p> <p>OTHERS = Legacy & New Generation Platforms.</p> <p>Platforms Equipped with 7720 Remote Drive Module will display the mount type.</p>
<p>IF INCORRECT VOLTAGE SELECTED</p>	<p>INCORRECT POWER VOLTAGE SETTINGS</p>	<p>If 12VDC is chosen and 24VDC is measured or 24VDC is chosen but 12VDC is measured then the unit will be disabled.</p> <p>All functions are disabled to avoid damaging the antenna.</p> <p>The correct voltage must be selected following the procedure above</p>

5.2. Firmware Update

5.2.1 Required Materials

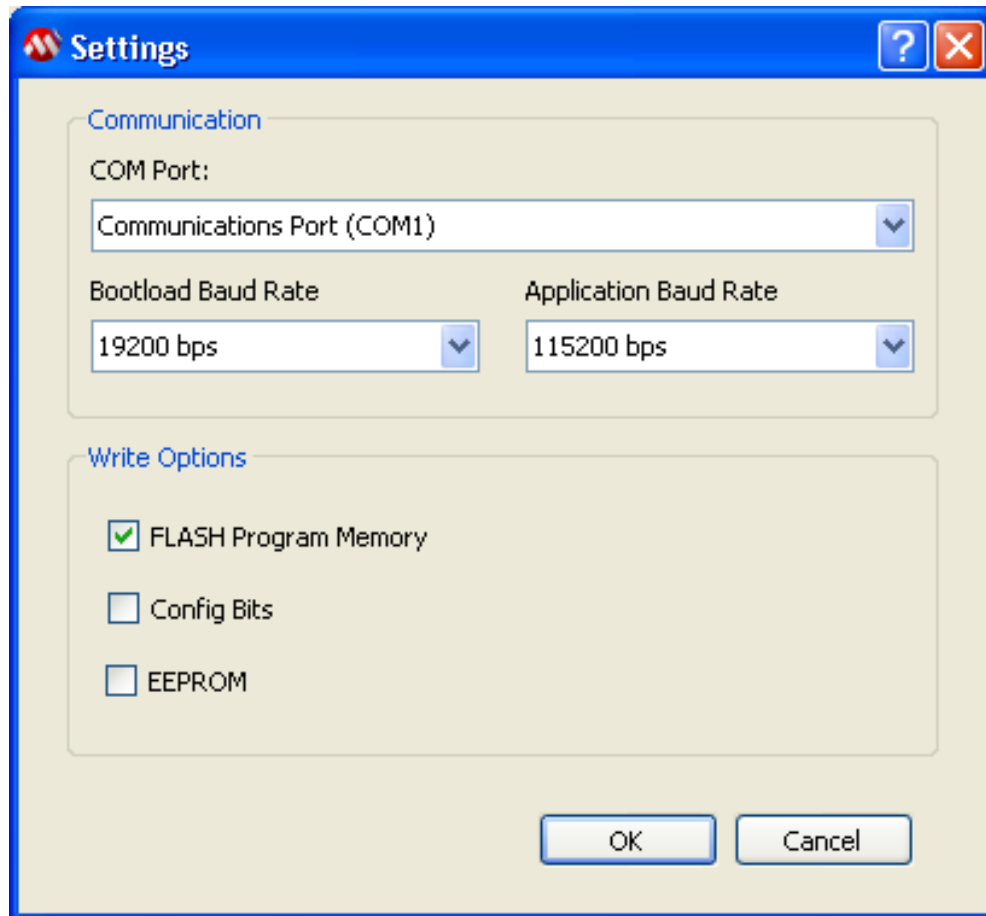
- PC/Laptop with DB9 Serial Port
- DB9 RS232 cable (female-to-male)
- Windows 98/2000/XP/Vista/W7
- 3000C Update Firmware Toolkit
- 3000C hand held controller and power cable
- Mobile Power Pack or Power source
- Latest H3000IR_XX.hex

5.2.2 Firmware Update Procedure

1. Use a female-to-male DB9 RS232 cable to connect PC and 3000C hand held controller, and power on the controller.

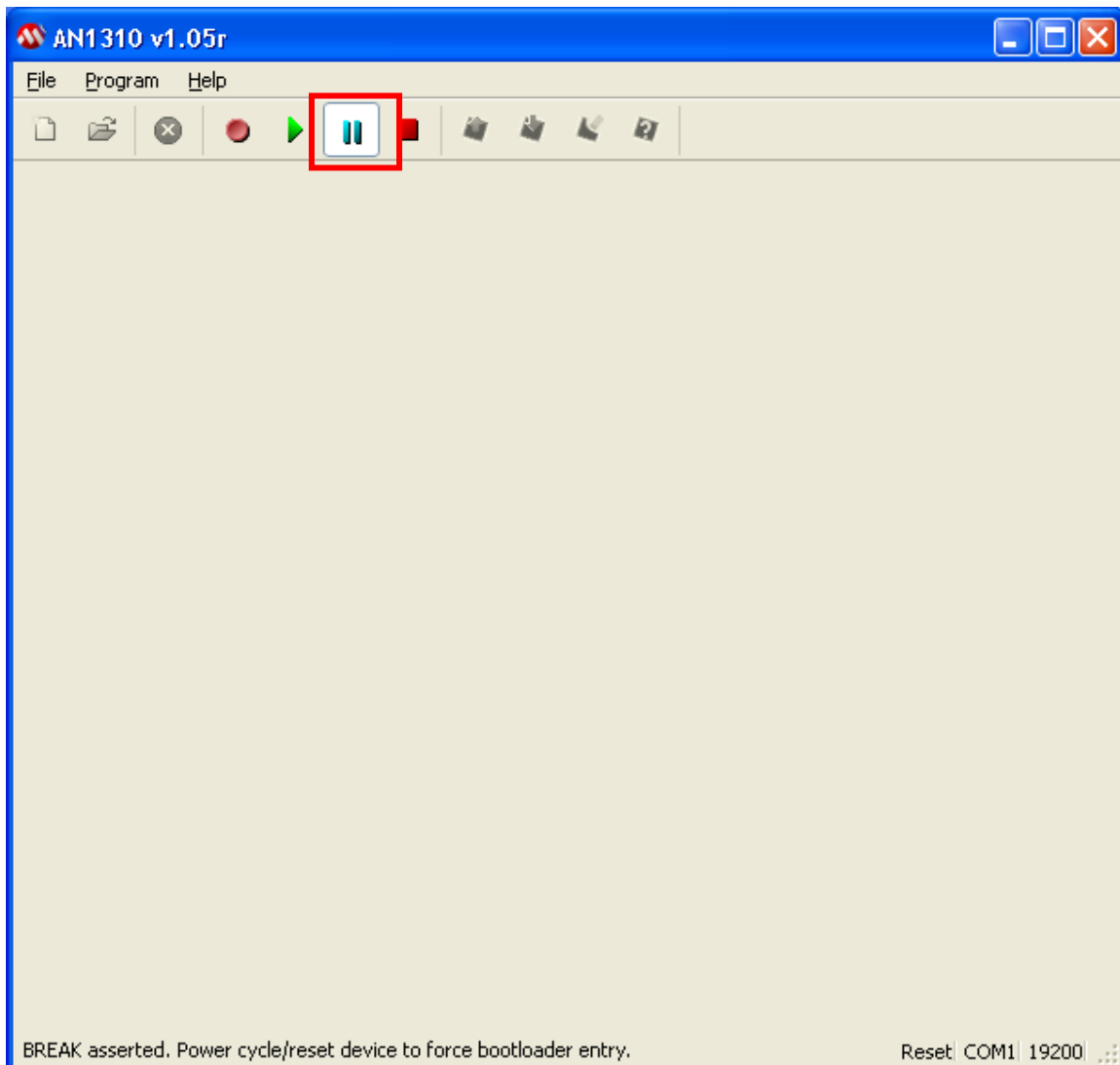
▪ **Connecting a 3000C hand held controller**

- I. Use a female-to-male DB9 RS232 cable to connect PC and 3000C hand held controller.
- II. Insert the DC power input to the controller and press the power button
- III. Launch the 3000C Toolkit Software, if this is an initial setup choose proper com port and baud rate(s) by going to **Program-----Settings** menu (set **Bootload Baud Rate** to **19200 bps** and **Application Baud Rate** to **115200 bps**) see image below.

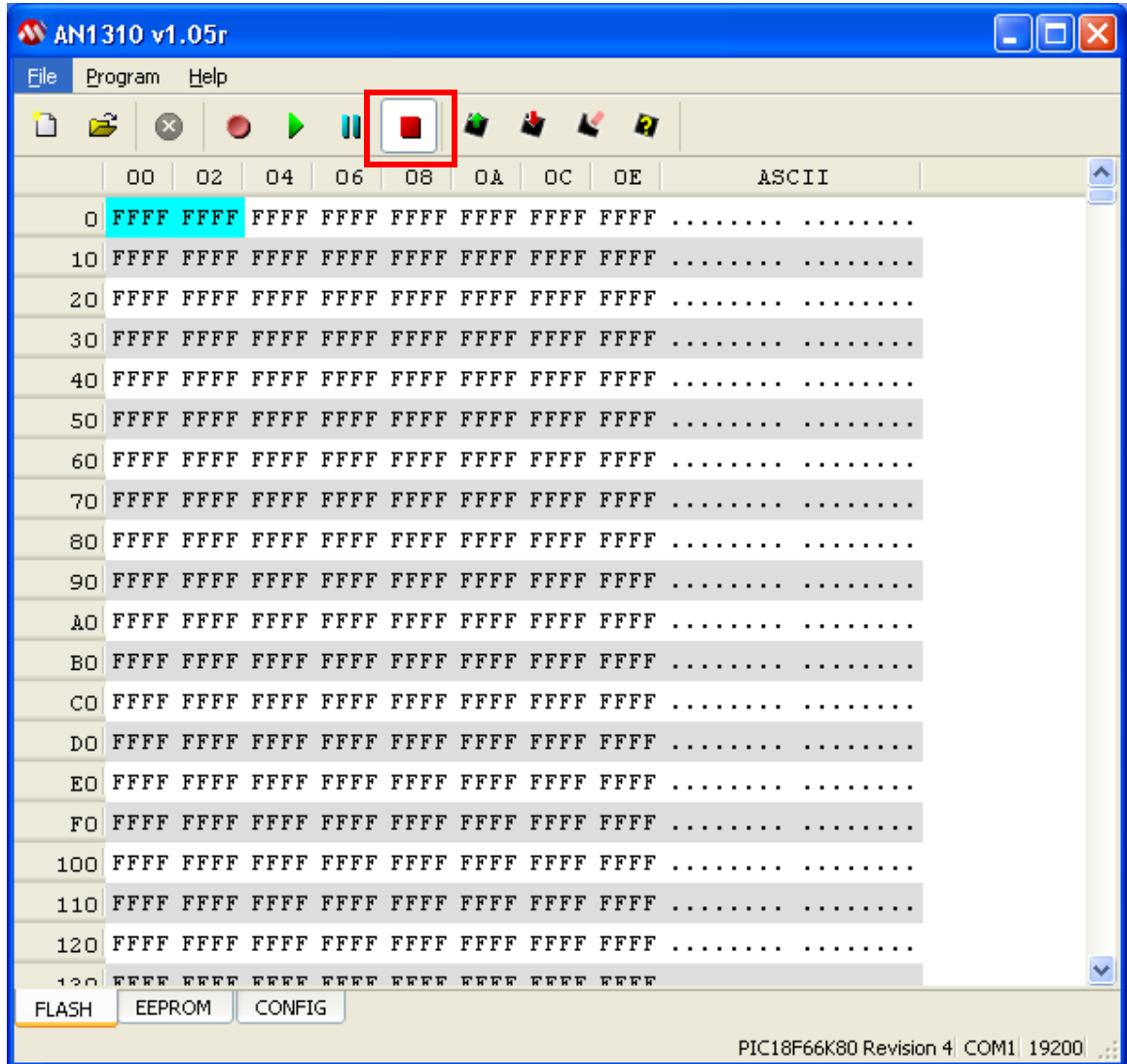


- **Put controller into boot mode for updating Firmware**
 - IV. Ensure controller has been powered on and is in operation status (LCD displays **READY**). Controller is now ready for updating the firmware.
 - V. Put 3000 Hand Held controller in Bootloader mode by clicking the “Break/Reset Mode” button.

Note: if handheld controller only requires bootloader without firmware to be loaded you may skip putting the controller into boot mode step and directly go to the next step.



- VI. Connect host PC to bootloader by clicking the red button “Bootloader Mode”, If communication is established, the toolkit displays the bootloader firmware version and device information.

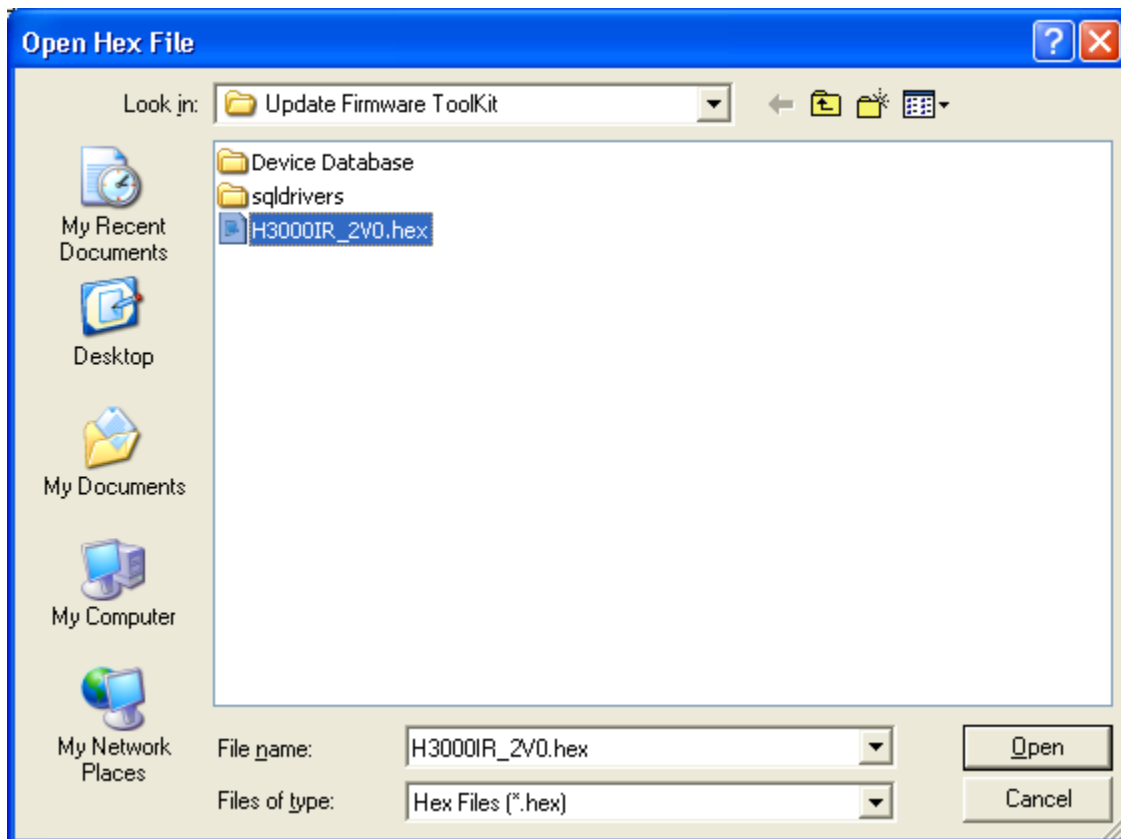


- **Update firmware**

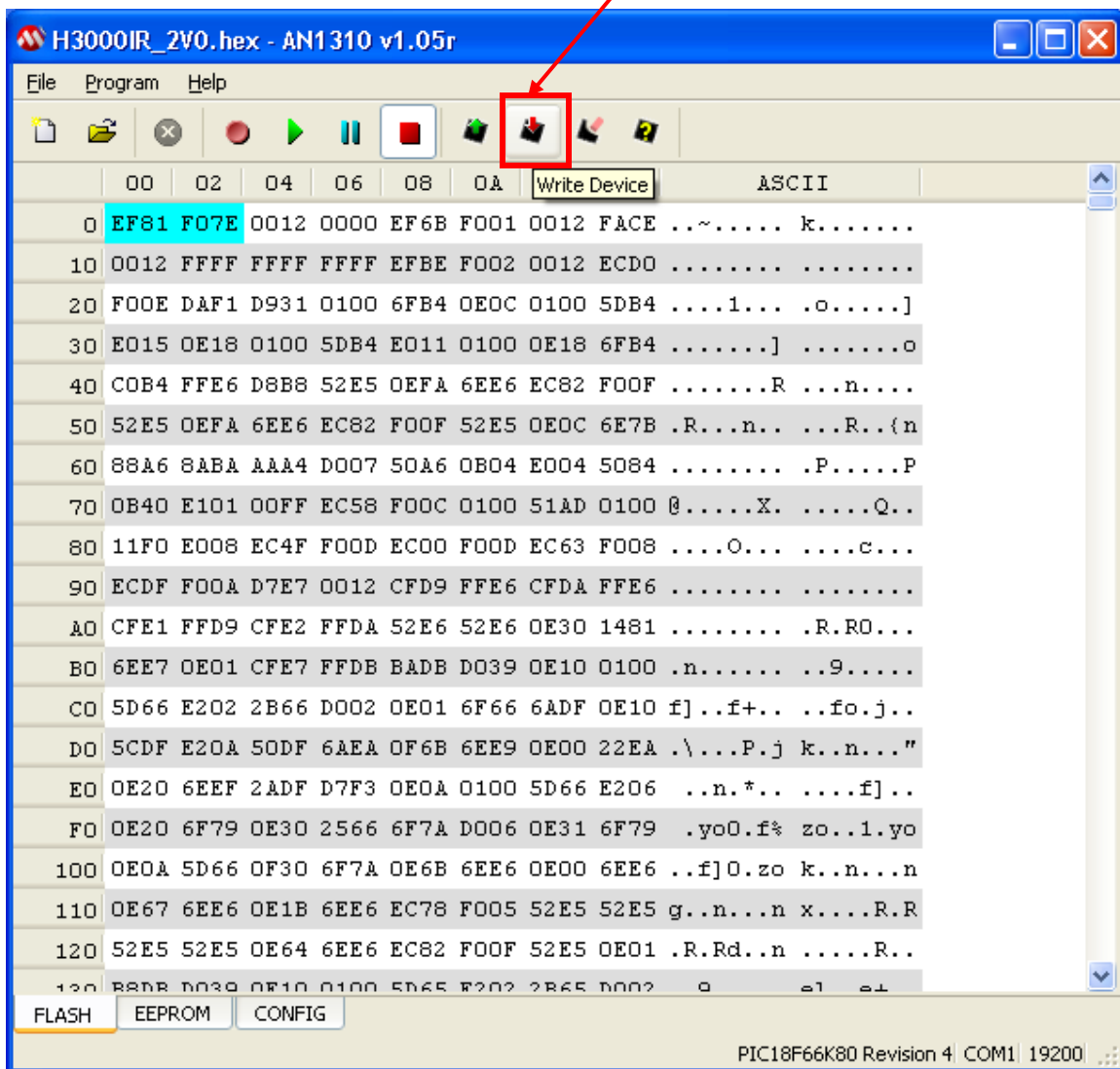
- VII. Click on the **Browse** button to navigate and select the application firmware H3000IR_7V3.hex or latest Firmware available and click “Open”



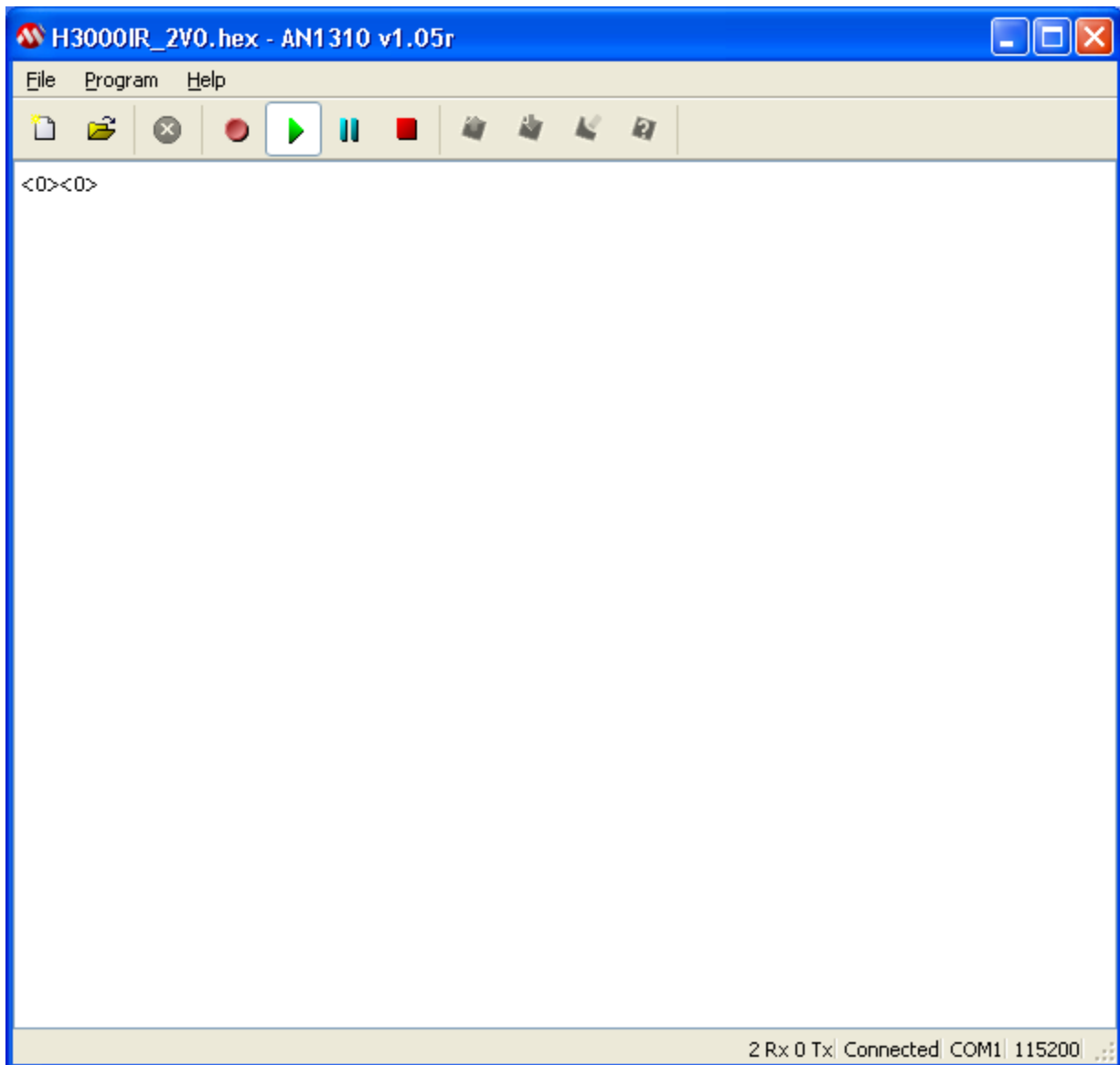
Note: version displayed in the image may not be the latest released Firmware version. Make sure you have and apply the latest H3000IR_XX.Hex firmware file.



- VIII. Write the firmware into handheld controller by clicking red down arrow "Write Device" button shown in below figure.



- X. Output <0><0> will be displayed, it is normal to also see <0>. The controller LCD background light will go off, this confirms that the controller has finished the firmware upload and has powered itself off.



- XI. Disconnect controller serial connection and power on controller. Confirm it powers on.
- XII. Power Off the Controller latest Firmware version should display.
- XIII. Firmware and Bootloader have been successfully loaded onto 3000C Controller.

5.3. Fuse Replacement

5.3.1 Required Materials

1. Small Flat Screw Driver
2. 15Amp Buss Fuse

5.3.2 Fuse Replacement Procedure

1. The fuse slot is located at the front of the hand held device and is labelled "**Fuse**".
2. With a flat screw driver turn Counter Clockwise, the fuse capsule will pop out.
3. Replace the fuse and insert the fuse capsule into the slot turning clockwise, the capsule will lock into place.