



**iNetVu® 7710 Controller User Manual
(Includes 7720 RDM)**

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FCC and INDUSTRY CANADA INFORMATION TO THE USER:

The FCC and Industry Canada have imposed the following conditions when operating, installing and deploying iNetVu® Mobile Earth Stations and is mandatory for all installations made within the Continental United States and Canada as well as Hawaii, Alaska, Puerto Rico, the U.S. Virgin Islands and other U.S. Territories. The FCC requires that a certified installer perform the installation. It is also strongly recommended that a qualified professional RV dealer/installer mount the system on your vehicle. These conditions are also required by C-COM for all other installed locations.

All iNetVu® Mobile earth station installers must be C-COM Certified, and must have specifically acknowledged the requirements for iNetVu® Mobile installations, which are as follows:

1. "Installation" is the physical mounting and wiring of the Satellite provider's earth station on a vehicle or other stationary site to prepare for correct operation. Only Certified C-COM iNetVu installers may perform the installation and removal of an iNetVu® Mobile system.
2. "Deployment" means the raising, pointing and orienting of the earth station to the communicating satellite, every time it is raised from a stowed position for use. The deployment of an iNetVu® Mobile system must only be done by a trained installer or by a consumer using the deployment software.
3. Installers shall install the iNetVu® systems only in locations that are not readily accessible to children and in a manner, that prevents human exposure to potential radiation hazards.
4. For large vehicles with roof mounts, the height of the bottom lip of the earth station when fully deployed must be at least six feet above the ground always, or six feet above a surrounding surface which a person may easily access.
5. If a roof access ladder or any other means of access to the roof is installed on the vehicle, then the ladder or access must be blocked by a suitable rope or other barrier while the earth station is deployed or in operation. The installer must provide this rope or barrier directly to the end user at the time of installation and advise the user to use it always when the earth station is deployed or in operation. Warning signs shall also be provided by the installer to the end user to be posted on the improper installation or due to the failure to provide required information to the end user.
6. Installers and end users will be deemed directly liable for any damages resulting from either of their failure to comply with the above rules. These rules are meant to ensure that extraordinary precautions and measures are used to prevent satellite interference or exposure to harmful radiation. C-COM reserves the rights to immediately **suspend without liability or previous notice** the operation of the earth station upon detection of a deviation from its installation or operational requirements until the deviation is corrected. In addition, C-COM reserves the right to suspend or cancel the Installer Certificate of any installer that has not fully complied with these installation requirements.

7. Further, the installer and end user may be directly liable for any damages resulting from any change undertaken by either of them. Including but not limited to, any modification of any part of the hardware, software, specific operational frequencies, the authorized satellite, or the size or other characteristics of the earth station supplied to them by C-COM or C-COM's authorized representatives. Warning signs shall be posted at prominent locations on the earth station informing all persons of the danger of harmful radiation from the earth station while it is deployed or while in operation.
8. The iNetVu® Mobile system may only be operated when the vehicle is stationary.
9. The installer must inform the end user that the vehicle must be stabilized during the transmission, to prevent movement of the vehicle for any reason, including movement of persons on or off the vehicle, or high winds. The installer shall advise the end user how to appropriately stabilize their vehicle.
10. Installers shall be liable for all damages if they fail to comply with the above mandatory conditions. This includes, but is not limited to damages caused by improper installation or due to the failure to provide required information to the end user.

Note 1:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with this instruction manual, may cause harmful interference with radio communications. However, there is no guarantee that interference will not occur in an installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio / TV technician for help.

Note 2:

This Class B digital apparatus complies with Canadian ICES-003.

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1. Introduction

The iNetVu® 7710 Controller is a one-box, one-touch solution for satellite auto-acquisition. Designed to interface with several Satellite Modems, iNetVu® VSATs, and DVB-S/DVB-S2ACM Receivers, the iNetVu® 7710 Controller connects to iNetVu® platforms which are equipped with 7720 on-board module (Remote Controller). The 7710 will only work with the remote on-board 7720 Drive Module and the same holds true for the 7720. The iNetVu® 7710 Controller is easily configurable and operated antenna controller unit which comes with the combined GPS/GLONASS Satellite Navigation System.



Fig. 1: iNetVu® 7710 Controller



Fig. 2: iNetVu® 7720 Controller

The iNetVu® 7710 Controllers are fully functional and configurable straight out of the box solution. No PC or monitor required. A DVB-S2ACM/CCM Tuner, an onboard LCD displaying real-time system status, and a Keypad Navigator, makes it easy to use the iNetVu® 7710 Controller by simply configuring the controller right from the front panel.

The iNetVu® 7710 Controllers along with any iNetVu® platform can work as a complete stand-alone unit. No modem or RF splitters are required for satellite acquisition. The LNB can be powered straight from the controller.

The 7710 (central controller) with the 7720 (remote drive module) complement the iNetVu® New Generation systems allowing movement on three axis simultaneously improving satellite acquisition speed and accuracy.

2. Specifications

Dimensions:	Width: 17.1" x Depth: 11.0" Height: 1.75"
Weight:	9.9 lbs. (4.5 kg)
Operating Temperature:	-20°C to +50°C
Power Consumption (Idle):	24 VDC @ 1A
DC Input:	24 VDC
Power Supply (AC/DC):	300W w/o Cooling 350W with 23.5 CFM Cooling Fan
Universal AC Input:	100 – 240 VAC, 50/60 Hz, 4.0 – 2.0 A,
GPS Connector:	SMA
Rx Connector:	Type F RG6
PC Interface:	USB Interface Network Interface Serial Interface (DB9 Female Connector) Web Interface
Front Panel Interface:	Automatic and Manual Control Keypad LCD Screen and Keypad Navigator

Tuner Specifications

RF Input Range:	950MHz to 2150MHz
Input Signal Level:	-65dBm to -25dBm
Input/Output Impedance:	75 Ω
Symbol Rate:	~1 to 67.5Msps

3. Minimum Recommended PC Requirements

Operating System	Windows XP, Vista, W7, W8, W8.1 and W10
CPU	2.0 GHZ
Memory (RAM)	1.0GB
MSN.Net Framework	3.5 installed

4. Physical

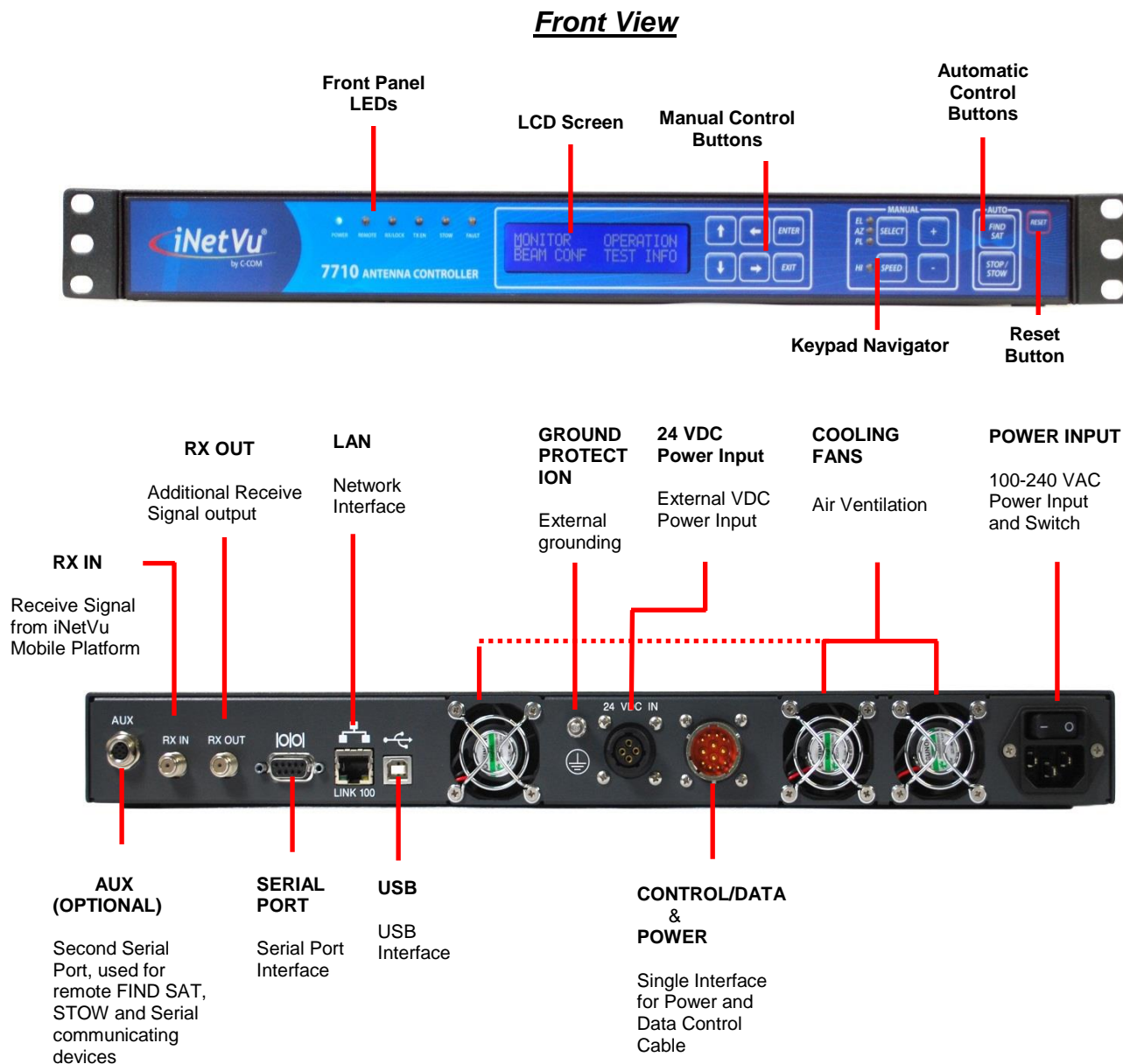


Fig. 3: iNetVu® 7710 Series Front and Rear Panel

Note: GPS/Glonass and Motor/Sensor connection(s) have been moved to the Remote (on-Board) 7720 Controller.

Note: VDC Power Input feature is available as an option. Both AC & DC power may be connected at the same time for power redundancy. See Appendix for VDC power input external cable connectivity wiring.

5. Typical Connection Configuration

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. See iNetVu® System Manual for configuration procedures corresponding to the service used.

CAUTION

This situation or practice may result in property or equipment damage. Ensure Power/Data cable is connected prior to powering on 7710 Controller. Do not connect or disconnect cables once controller has been powered on. It is recommended that the controller is properly grounded at all times. 7720 Remote Drive Module acquires its power when the 7710 controller is powered up.

5.1. Typical Network Interface Connection

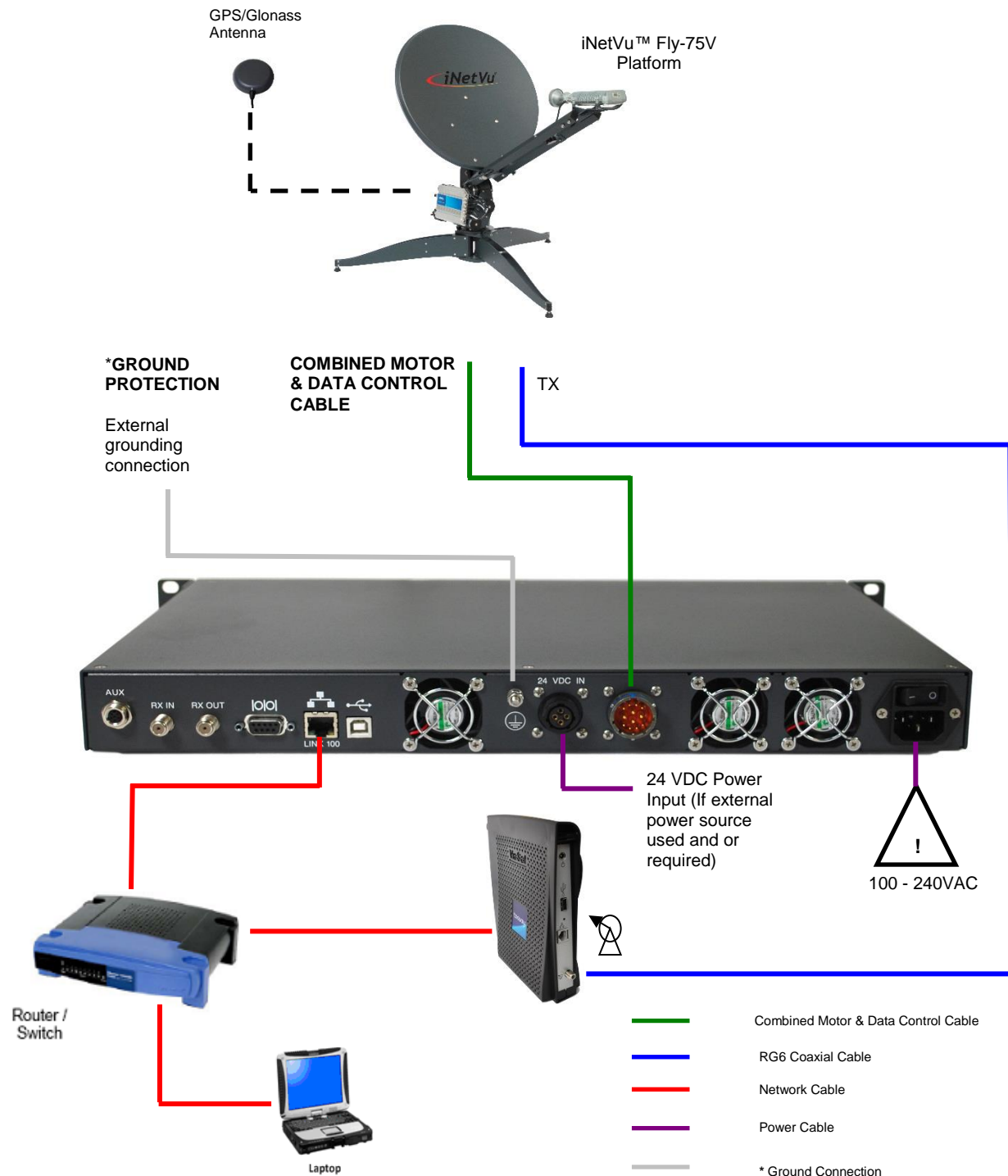


Fig. 4: iNetVu® 7710 Controller Typical Connection Configuration

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

5.2. Typical USB Communication Interface

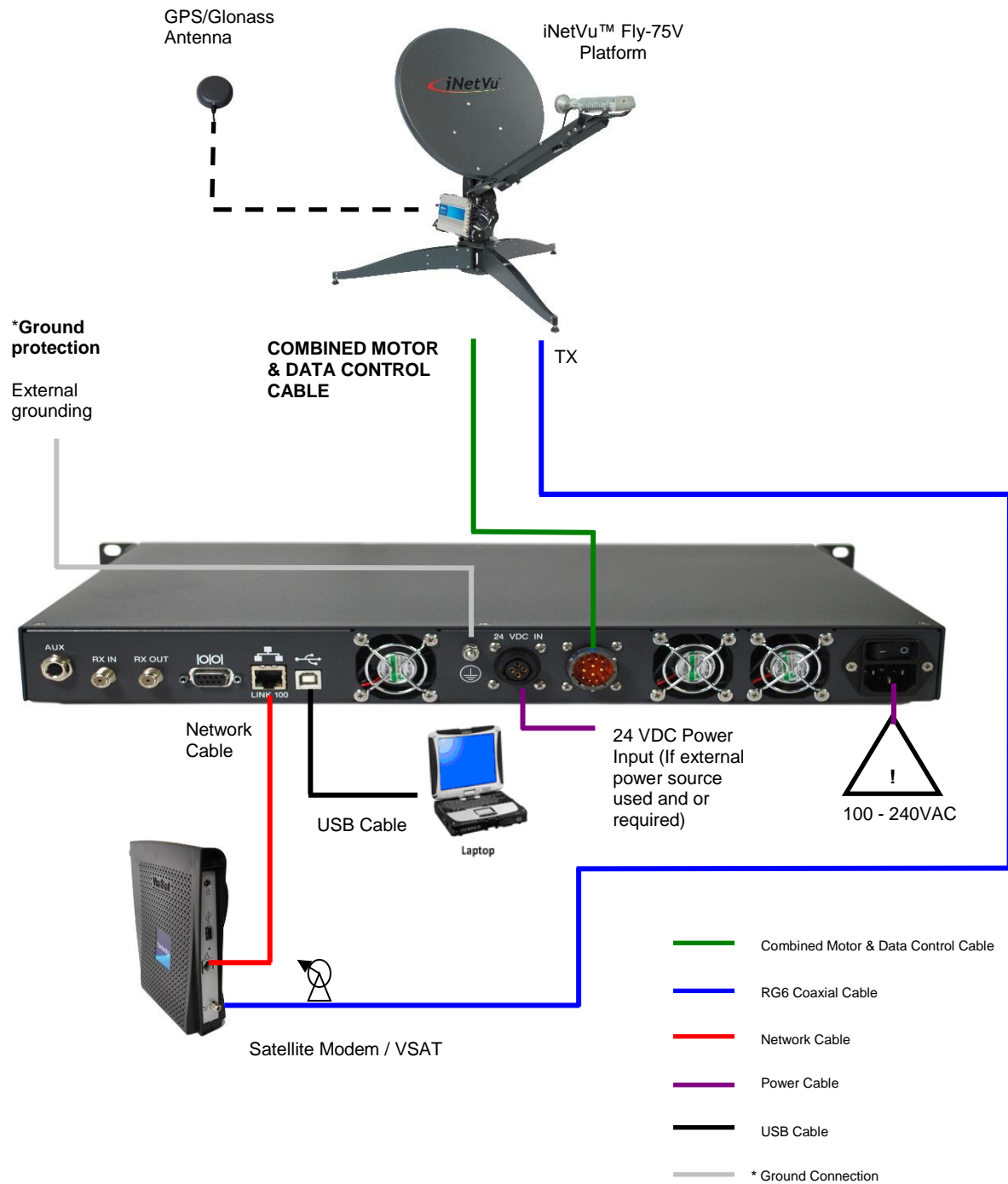
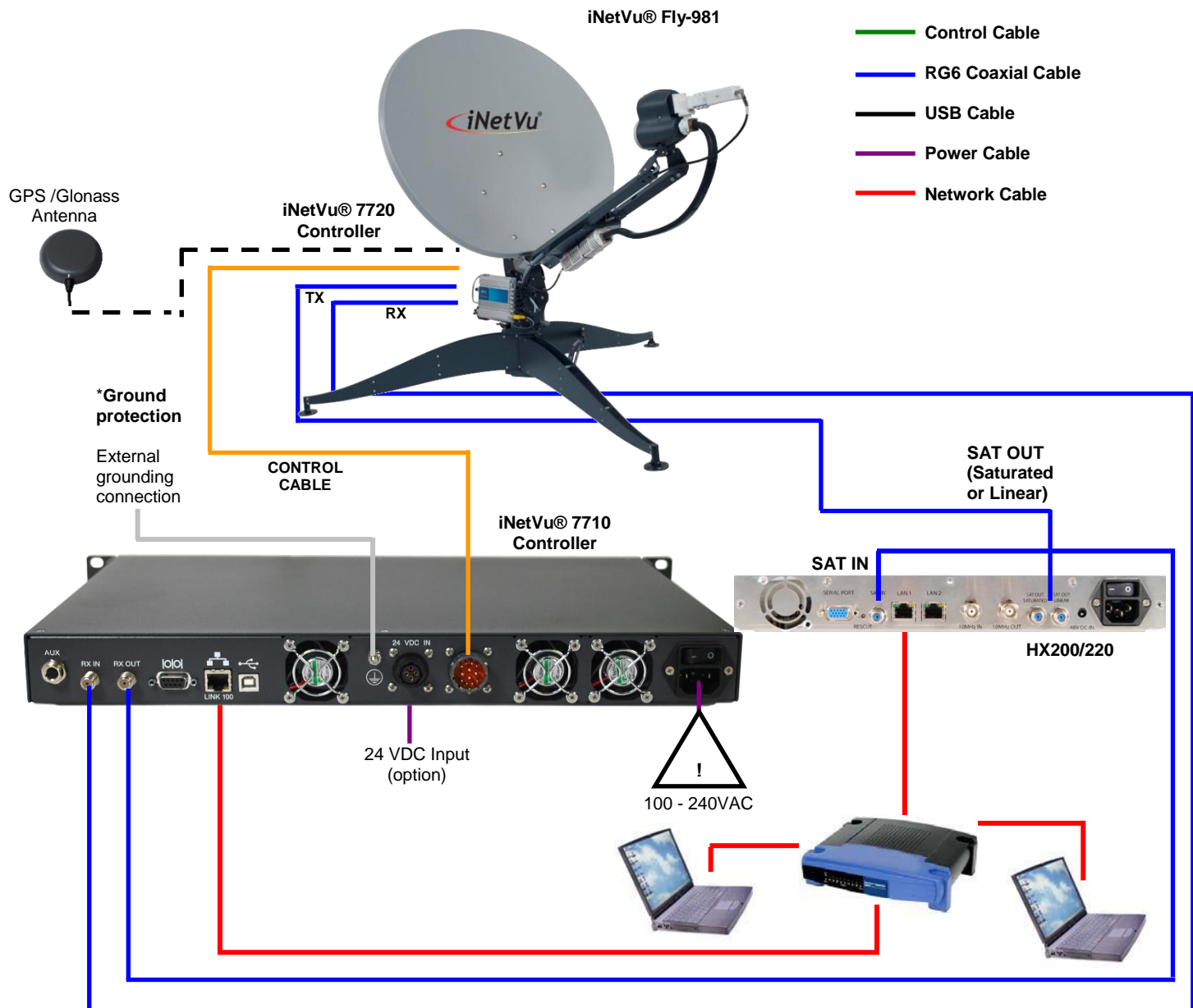


Fig. 5: *USB Configuration Interface*

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

5.3. Network Interface Connection – Ku Band Service



Network Interface System Wiring Diagram for HX200/220 power supplied by the 7710 Controller

CAUTION

Ensure Control Cable, including RX and TX cables are connected prior to powering on 7710 Controller.

5.4. Typical Connection – PC Free

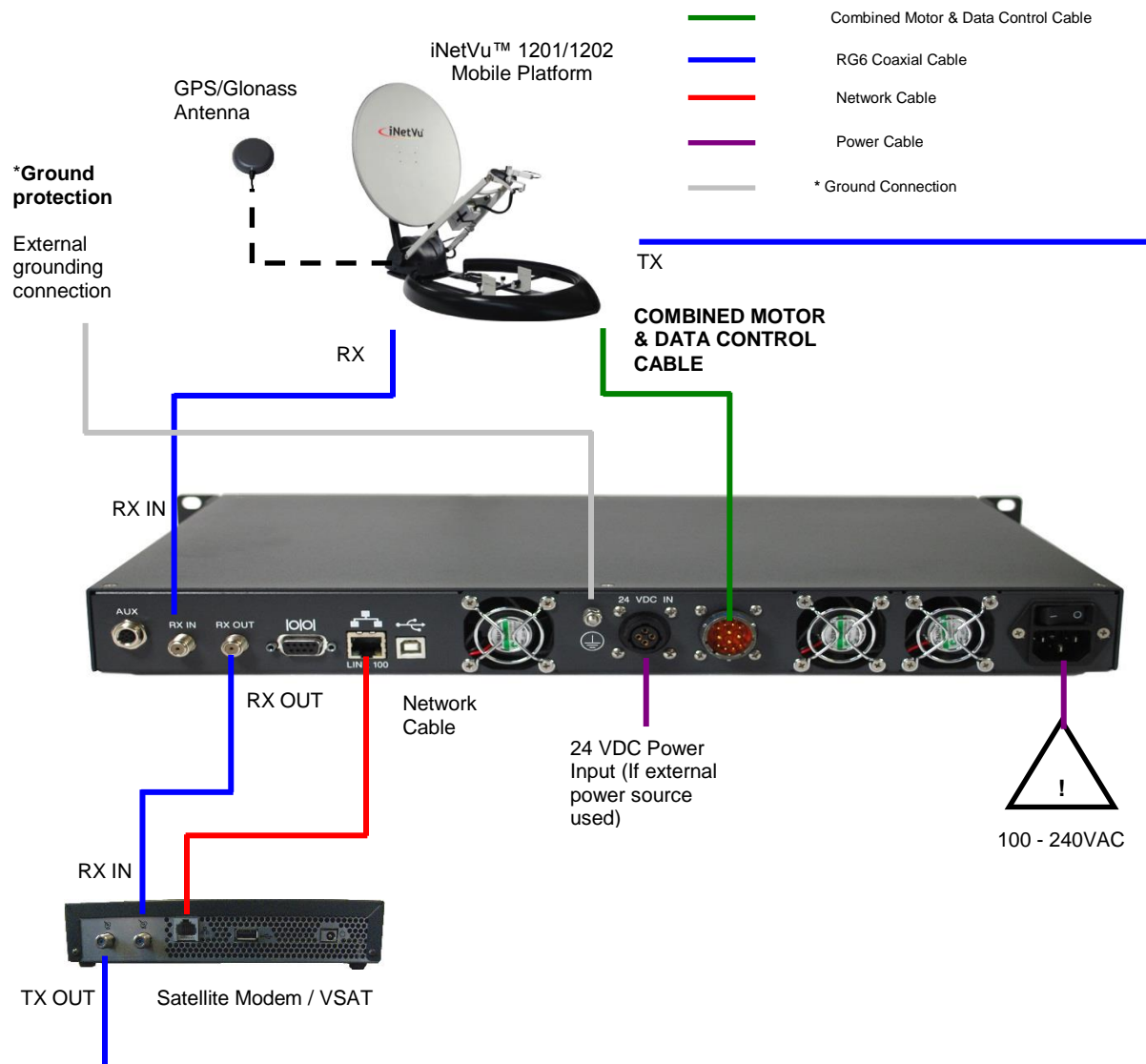


Fig. 6: iNetVu® 7710 Series Controller PC Free Connection Configuration

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

Note: Setup diagram shown here represents Ku service.

6. Installation

The iNetVu® 7710 Controllers are shipped pre-configured and calibrated with the iNetVu® Mobile Platform (equipped with the 7720 Remote Drive Module) and service which you plan to use. Only configuration of the Satellite Modem / VSAT Communication parameters and the satellite you wish to find is required.

6.1. Rack Installation

The iNetVu® 7710 Controllers include attachable “ears” which make the iNetVu® 7710 Controllers configurable for rack-mounted installation.

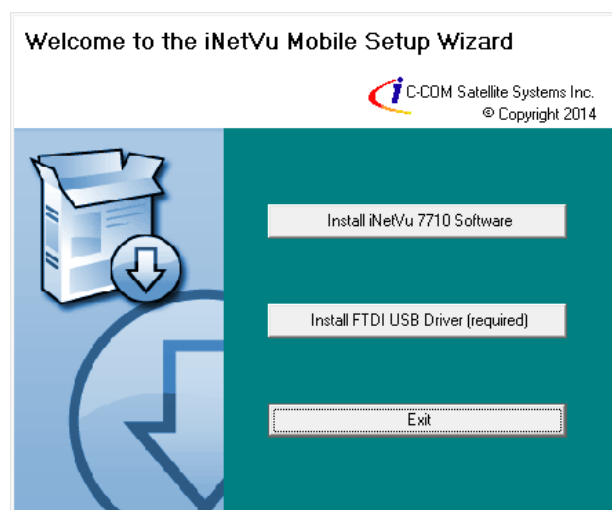
If you are installing the iNetVu® 7710 Controller onto a rack, ensure that you use supporting rails or a shelf to support the weight of the iNetVu® 7710 Controller, and use the provided “ears/brackets” to fasten the unit to the rack face.

6.2. iNetVu® Software – Software and USB Driver Installation

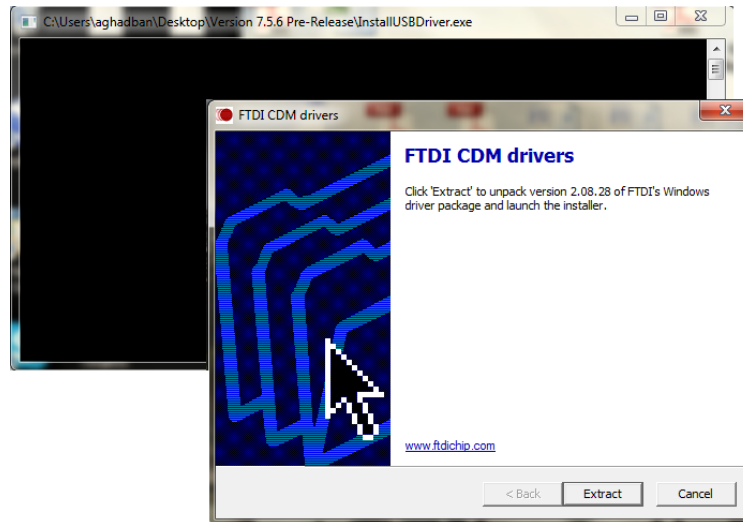
It is recommended that the previous software be removed before installing latest software version if upgrading. See minimum recommended pc requirements for most favorable working system.

Note: Do not connect USB cable between controller and computer/laptop until the software with all the required drivers have been successfully installed. This will ensure the proper drivers are used once the USB connection is established.

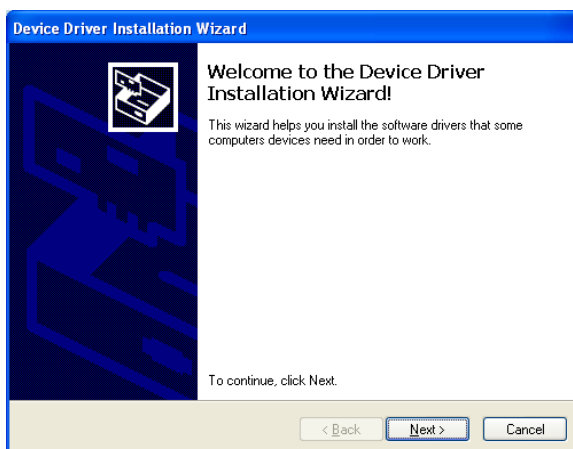
1. If you are installing from the USB flash drive or have downloaded from the C-COM FTP, run the **iNetVu7710Setup.exe** file.



2. Install the FTDI USB Driver and continue through the Installation Wizard.



Click "Extract"

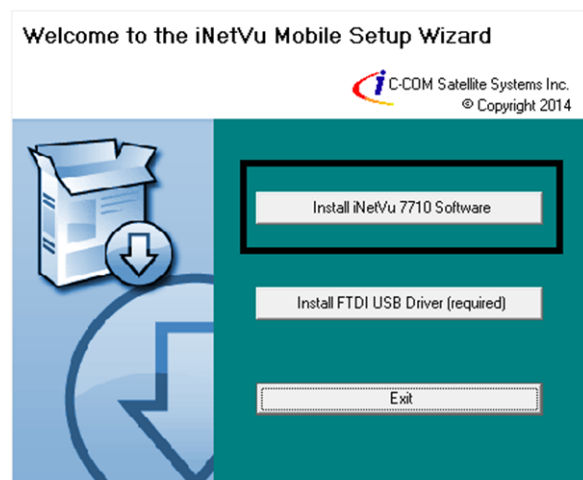


Click "Next"

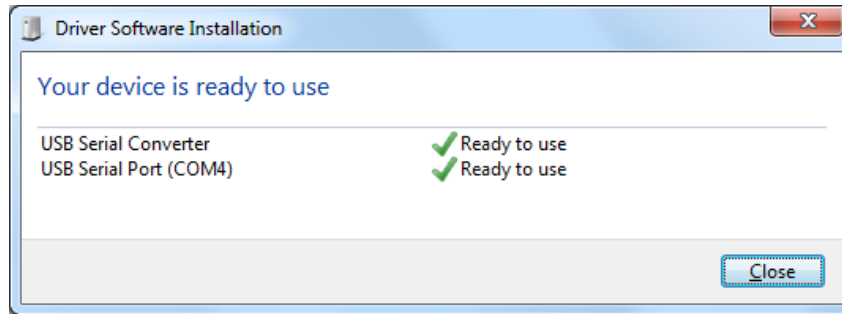


Click "Finish"

3. Install the iNetVu® 7710 Software by accepting defaults and close when complete.



4. Connect the Controller using the provided USB cable. **Windows Vista and 7+** users, the drivers should install automatically without any further user action.



5. You have successfully installed the 7710 iNetVu® Drivers and Software. Exit the setup wizard.
6. You can now run the iNetVu® Mobile 7710 software from the shortcut on your desktop.

6.3. Setup

1. Connect all the cables and components as depicted in the previous section illustrating the setup schematics. Select connection that is best suited for your application.
2. Power on the iNetVu® 7710 Controller.
3. Set your external PC to the same subnet as the iNetVu® 7710 Controller (Default controller IP Address of the 7710 controller is (192.168.0.2) this IP could be different depending on the service, it may be set to (192.168.0.3 or .4) Check the controller configuration.
4. Refer to the appropriate service User Manual that will be used with your system for addition setup and configuration information.
5. Controller should be power cycled (reset/rebooted) after each configuration change.

7. iNetVu® 7710 Front Panel Operation

7.1. LED DEFINITIONS



Fig. 7: iNetVu® 7710 Series Controller Front Panel LED Panel

POWER - Solid light indicates power is ON.

REMOTE - 7720 remote controller status.

REMOTE LED will flash (Blue) every 1000ms if CANBUS and MODEM communication successful.

REMOTE LED will flash (Red) every 125ms indicating an error if no CANBUS communication exists.

RX/LOCK - RX status indication.

TX EN - Solid Light indicates transmitter has been enabled.

STOW - Solid Light indicates iNetVu® Mobile Platform Elevation Axis (EL) is in the stowed position.

FAULT - Light indicates system fault status.

FAULT LED will flash (Red) every 125ms indicating an error if sensor error is detected.

FAULT LED will flash (Yellow) every 500ms indicating a warning if GPS is overridden or not communicating, or if COMPASS is overridden and there is no sensor error.

7.2. Manual and Automatic Controls Button Operation

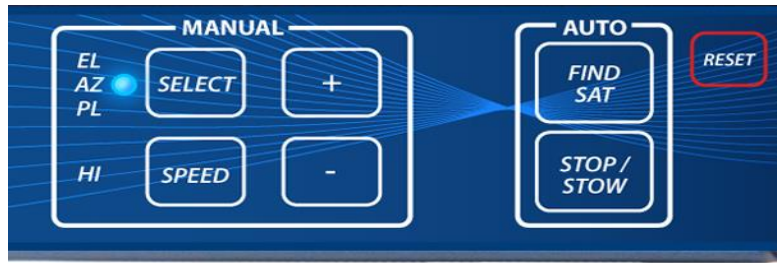


Fig. 8: iNetVu® 7710 Series Controller Front Panel Buttons

How to Find Satellite

Press “**FIND SAT**” Button.

iNetVu® Mobile Platform will automatically attempt to locate, lock, peak and enable the system to start transmitting on the configured satellite beam or last satellite beam that locked on satellite signal. **To choose a different satellite, press and hold the FIND SAT button for 2 seconds, then release. Use the UP and DOWN arrows on the keypad to locate the desired satellite then press FIND SAT to launch the search routine on that selection.**

To save time and speed up the search process GPS and RF status are ignored and movement is permitted to allow compass heading reading. If GPS and RF conditions are not met after three attempts (within 60 seconds) the search will fail and a message will be displayed.

How to Stow the Antenna

Press “**STOP/STOW**” Button, and hold for 2 seconds.

iNetVu® Mobile Platform will automatically re-center itself and lower or elevate into the stow position. On the Fly-Away the platform will elevate into position as this is the required position for packing the system into its storing/travel case.

How to Stop

Press “**STOP/STOW**” Button (do not hold). Stops all ongoing operations such as motor movements, automatic functions like Find Satellite and Stow.

How to Manually Move the iNetVu® Platform

Press “**SELECT**” to select the axis of motion you wish to move. The LED corresponding to the axes chosen will light up. Press “**SPEED H/L**” to select the speed (LED ON – HI, LED OFF - LOW). Press and release “**+**” and “**-**” for short duration movement & angle readings. Press and hold “**+**” and “**-**” for long duration movement. **Warning:** User must watch antenna limit sensors (EL UP/ST, EL DN, AZ ST, AZ LP etc...) when using manual controls. See LCD ‘Monitor’ section explanation for more details.

How to Turn ON/OFF the Controller

Turn ON/OFF the power switch on the back panel of the iNetVu® 7710 Controller. The 7720 Remote Controller does not have a power button and receives its power from the 7710.

Note: powering on/off the 7710 Controller will also power off the 7720 Remote Drive Module which is located at the platform base.

How to Reset the Controller

Press “RESET” Button
Power-cycles the iNetVu® Controller
DOES NOT reset default values

7.3. LCD Screen and Navigator Keypad Operation

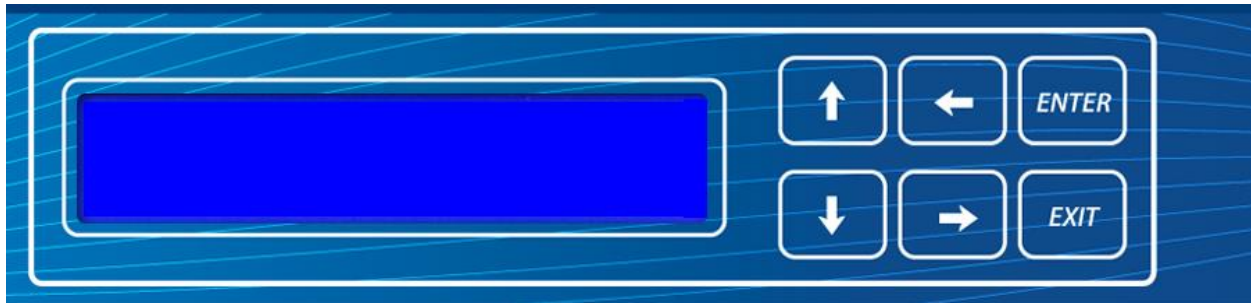
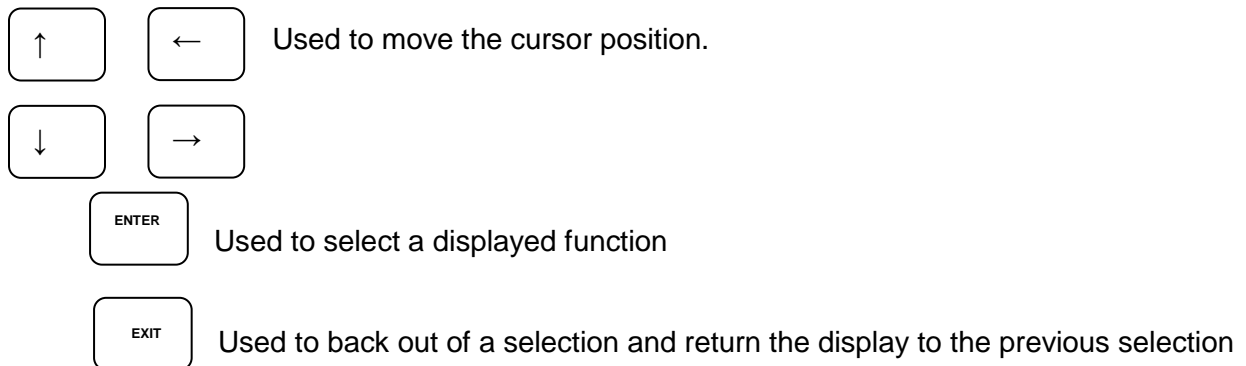


Fig. 9: iNetVu® 7710 Controller LCD and Keypad Navigator



7.4. Front Panel Menu Navigation Tree

The following is a tree consisting of a list of the menu options available with the LCD interface.

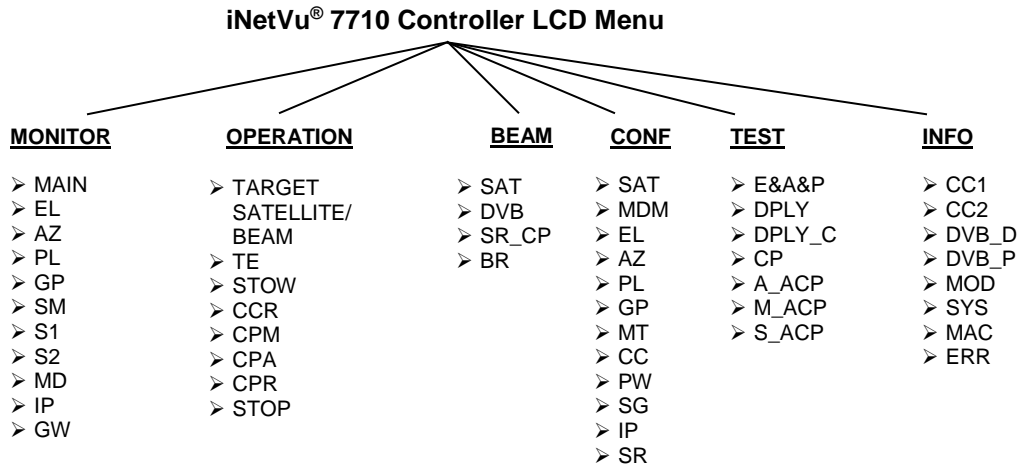


Fig. 10: iNetVu® 7710 Series Controller LCD Menu Options

7.5. Opening Screen

When powering the iNetVu® 7710 Controller, the LCD will display one of the following during the initial boot-up sequence.



Fig. 11: LCD Opening Screen

There are Six (6) Main Menu items to select from: **MONITOR**, **OPERATION**, **BEAM**, **CONF**, **TEST**, and **INFO**.



Fig. 12: LCD Main Menu

MONITOR	This menu branch allows the user to monitor the status of the iNetVu Fly-Away/Mobile Platform Axial Movement of EL, AZ, & PL, Target and Reference Satellites, displays information concerning the iNetVu 7710 Controller IP and the Satellite Modem / VSAT and Beacon status.
OPERATION	This menu branch allows the user to perform miscellaneous functions, such as Find Satellite on specific Beam, enable the transmitter, Restore Controller platform parameters to default, Stow, etc.
BEAM	This menu branch allows the user to configure and save Satellite parameters as well as the search mode, up to 64 Beams can be configured and saved.
CONF	This menu branch allows the user to configure and or select correct SAT beam of the iNetVu® System, including platform, modem parameters, and controller. Reset password option.
TEST	This menu branch allows the user to run demo test on all three axes, as well as check/test compass, deploy the antenna, and ACP testing for selected (HNS) services.
INFO	This menu branch allows the user to verify information on the 7710 and 7720 controller/modem settings, such as software versions, hardware versions, DVB module, MAC address and error codes.

7.6. Supported Platforms

The user can configure the platform type using iNetVu LCD panel, or Application software. The Sale's name is listed in brackets.

ENG



SALES



A0755A-3(V.10) (Ka-75V) --- iNetVu® Drive-Away 75cm, 2 Axis (Ka – Viasat SurfBeam Transceiver)
A0755A-5 (Ka-75V) --- iNetVu® Drive-Away 75cm, 2 Axis (Ka – Viasat ETRIA Transceiver)
A0756A-3 (Fly-75V) --- iNetVu® Fly-Away 75cm, 2 Axis (Ka - Viasat SurfBeam Transceiver)
A0756A-5 (Fly-75V) --- iNetVu® Fly-Away 75cm, 2 Axis (Ka - Viasat ETRIA Transceiver)
A0985A-1 (Ka-98H) --- iNetVu® Drive-Away 98cm, 2 Axis (Ka – HNS Spaceway Transceiver)
A0985A-2 (Ka-98G) --- iNetVu® Drive-Away 98cm, 2 Axis (Ka – Skyware Global Transceiver)
A0985A-3 (Ka-98V) --- iNetVu® Drive-Away 98cm, 2 Axis (Ka – Viasat SurfBeam Transceiver)
A0985A-4 (Ka-98H) --- iNetVu® Drive-Away 98cm, 2 Axis (Ka – HNS Jupiter Transceiver)
A0985A-5 (Ka-98V) --- iNetVu® Drive-Away 98cm, 2 Axis (Ka – Viasat ETRIA Transceiver)
A0985B-1 (Ka-98H) --- iNetVu® Drive-Away 98cm, 3 Axis (Ka – HNS Spaceway Transceiver)
A0985B-2 (Ka-98G) --- iNetVu® Drive-Away 98cm, 3 Axis (Ka – Skyware Global Transceiver)
A0986A-1 (Fly-98H) --- iNetVu® Fly-Away 98cm, 2 Axis (Ka - HNS Spaceway Transceiver)
A0986A-2 (Fly-98G) --- iNetVu® Fly-Away 98cm, 2 Axis (Ka - Skyware Global Transceiver)
A0986A-3 (Fly-98V) --- iNetVu® Fly-Away 98cm, 2 Axis (Ka - Viasat SurfBeam Transceiver)
A0986A-4 (Fly-98H) --- iNetVu® Fly-Away 98cm, 2 Axis (Ka - HNS Jupiter Transceiver)

A0986A-5 (Fly-98V) --- iNetVu® Fly-Away 98cm, 2 Axis (Ka - Viasat ETRIA Transceiver)
A0986B-1 (Fly-98H) --- iNetVu® Fly-Away 98cm, 3 Axis (Ka - HNS Spaceway Transceiver)
A0986B-2 (Fly-98G) --- iNetVu® Fly-Away 98cm, 3 Axis (Ka - Skyware Global Transceiver)
A0986C (Fly-981) --- iNetVu® Fly-981, 3 Axis New Gen Fly-Away 98cm (Ku – Band, XPOL)
A0987A-4 (Ka-98H) --- iNetVu® Drive-Away 98cm, SMC REFL, 2 Axis (Ka - HNS Jupiter Transceiver)
A0987B-4 (Ka-98H) --- iNetVu® Drive-Away 98cm, SMC REFL, 3 Axis (Ka - HNS Jupiter Transceiver)
A1201A (v10.0) (1201J) --- iNetVu® New Gen Drive-Away, 1.2m (Ku – Band, XPOL)
A1205A-2 (Ka-1202G) --- iNetVu® New Gen Drive-Away 1.2m, 2 Axis (Ka - Skyware Global Transceiver)
A1205A-3 (Ka-1202V) --- iNetVu® New Gen Drive-Away 1.2m, 2 Axis (Ka - Viasat SurfBeam Transceiver)
A1205B-2 (Ka-1202G) --- iNetVu® New Gen Drive-Away 1.2m, 3 Axis (Ka - Skyware Global Transceiver)
A1205C-1 (1202) --- iNetVu® New Gen Drive-Away 1.2m, 3 Axis, GD REFL, (Ku Band)
A1205C-2 (1202) --- iNetVu® New Gen Drive-Away 1.2m, 3 Axis, SG REFL, (Ku Band)
A1206A-3 (Fly-1202V) --- iNetVu® New Fly-Away 1.2m, 2 Axis (Ka - Viasat SurfBeam)
A1206A-5 (Fly-1202V) --- iNetVu® New Fly-Away 1.2m, 2 Axis (Ka - Viasat ETRIA)
A1206C-1 (Fly-1202) --- iNetVu® New Fly-Away 1.2m, GD REFL, 3 Axis (Ku – Band, XPOL)
A1206C-2 (Fly-1202) --- iNetVu® New Fly-Away 1.2m, SG REFL, 3 Axis (Ku – Band, XPOL)
A1207A-2 (Ka-1202G) --- iNetVu® New Gen Drive-Away 1.2m, 2 Axis (Ka - Skyware Global Transceiver)
A1505C (1501) --- iNetVu® New Gen Drive-Away 1.5m, 3 Axis (Ku – Band, XPOL)
A1505E-1 (1501) --- iNetVu® New Gen Drive-Away 1.5m, 3 Axis (C – Band, LINEAR)
A1805C (1801) --- iNetVu® New Gen Drive-Away 1.8m, 3 Axis (Ku – Band, XPOL)
A1805D (1801) --- iNetVu® New Gen Drive-Away 1.8m, 2 Axis (C – Band, CIRCULAR)
A1805E-1 (1801) --- iNetVu® New Gen Drive-Away 1.8m, 3 Axis (C – Band, LINEAR)
A1806C (Fly-1801) --- iNetVu® New Fly-Away 1.8m, 3 Axis (Ku – Band, XPOL)
A1806D (Fly-1801) --- iNetVu® New Fly-Away 1.8m, 2 Axis (C – Band, CIRCULAR)
A1806E (Fly-1801) --- iNetVu® New Fly-Away 1.8m, 3 Axis (C – Band, LINEAR)

**** The dash and number after the letter is dropped when selecting the mount type in the iNetVu software, i.e. A0985A-1 becomes A0985A and so on.**

Note: The A1205A-5 and A1207A-2 platforms are the same with the A1205A having a long focal feed while the A1207A short focal feed assembly.

LCD Method

1. Advance to the CONF menu using the '←' and '→' arrows on the keypad.
2. Advance to "MT" using the '←' and '→' arrows and press the "Enter" key on the keypad. Select, Platform Type, Platform Version and enter Serial Number where the platform description appears (i.e. A0756A for Fly-75V (.75cm flyaway)). Click on the '↑' arrow once, this action will allow you to make modifications to that section, each section is separated by a hyphen (-).

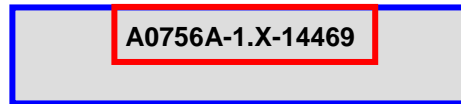


Fig. 13: MT Screen from Configuration (CONF)

3. Next to the platform type (i.e. A0756A, etc.), there exists a platform hardware version followed by 5-digit platform serial number as outlined in the figure above. Change version number and the iNetVu® Platform Serial Numbers by using the '→' to advance between digits, and the '↑' or '↓' to change the value of the digit. The iNetVu® Mobile Platform Serial Number and Hardware Version will be found on your iNetVu® Platform ONLY the LAST 5 DIGITS need be entered for the Serial Number.
4. After this is complete, go back to the CONF Sub menu by pressing the "Exit" button to navigate backwards.
5. Navigate to the "PW" menu from the keypad. The "Exit" button on the keypad can be used to navigate back to the sub/main menu, and the "Enter" button will allow the user to enter a menu. (default CONF menu access password "**password**") This can be changed or left as is.
6. Press "Exit" twice and when prompted if you would like to save the configuration, press the '↑' button such that 'Y' is selected for "yes", and press, "Enter".
7. Navigate to "SYS" under the INFO menu and select the "Enter" button on the keypad a screen, navigate to "CC1" containing Platform Type, Platform Version and Serial Number Data as well as data record logging. This validates the configuration of the system was saved.
8. Navigate to "OPERATION" using the arrows and select the "Enter" key on the keypad. Advance to "STOW" verify that there are no obstructions that would impede a sweep and press "ENTER". System will find AZ Stow limit switch and zero itself before moving up on elevation (EL UP will come ON) for Fly-Away platforms while on the Drive-Away systems movement will be down on elevation (EL ST will come ON).

That's it. You have successfully completed the installation and setup of the iNetVu® 7710 Controller and are ready to find satellite.

7.7. MONITOR

This section describes briefly what each item and menu represents. For a more detailed explanation of each menu, see the configuration section of this manual.

MAIN	EL	AZ	PL	GP	SM
S1	S2	MD		IP	GW

Fig. 14: Monitor Menu

MAIN	Displays real-time system status and receive signal.
EL	(Elevation) Displays real-time current drawn and speed settings for the elevation motor, as well as real-time elevation angle and limits, offset, window size, and Elevation adjustment gap.
AZ	(Azimuth) Displays real-time current drawn and speed settings for the azimuth motor, as well as real-time azimuth angle and limits, window size.
PL	(Polarization) Displays real-time current drawn and speed settings for the polarization motor, as well as real-time polarization angle and limits, window size, and PL zero.
GP	Displays GPS Status and coordinates.
SM	(Search Mode) Displays compass status, Search Mode (RF status).
S1	(Satellite) Displays Target Satellite longitude and the antennas target coordinates. This branch also contains the DVB Carrier programmed and the LNB Power
S2	(Satellite) Displays Reference Satellite longitude and the DVB Carrier programmed for the reference satellite along with the LNB Power
MD	(Modem and Beacon Receiver) Displays Modem status as well as the Beacon Receiver frequency and signal (if a beacon receiver is used)
IP	Displays IP of iNetVu 7710 Ethernet Port, and the VSAT modem.
GW	(Gateway) Displays Subnet, and Gateway IP.

7.7.1. MAIN

This branch menu displays the real-time Elevation, Azimuth, Polarization Angles, their respective limits (Up, Down, Stow), the RF Receive Signal, Signal Strength, and the System Status.

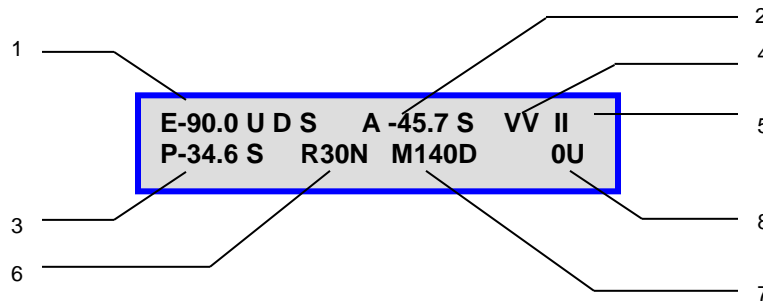


Fig. 15: "MAIN" Display

1 – Elevation Angle and Limit Protection Indicators

U	Elevation up Limit has been reached.	+90
D	Elevation down Limit has been reached.	+2 to -1
S	Elevation Stow Limit has been reached.	
	The Drive-Away (1201 & 1801)	-90
	The Fly-Away(s) hit the up limit when it stows	+90

2 – Azimuth Angle and Stow Limit Indicator

S	Azimuth Stow Limit has been reached.
	Platform should be physically centered on the Azimuth axis.

3 – Polarization Angle and Stow Limit Indicator

S	Ku Band systems will have stowed status enabled at all times.
DDD	Ka Circular Band Signals will have the Polarization Angle disabled, and will display "DDD". Stow Limit will also be disabled and display "DDD".

4 – GPS Status Flag and Compass Status Flag

The first letter represents the GPS status, and the second letter represents the Compass status (i.e. VV, FF, OO, FO, OF, OV, VO).

V	GPS/Compass Status is Valid/Normal
F	GPS/Compass Status has failed
O	GPS/Compass Coordinates have been overridden

5 – System Status (status meanings explained in the software section of this report)

AC	ACP Testing
AE	ACP Adjustment on Elevation (During Manual ACP)
AZ	ACP Adjustment on Azimuth
AP	ACP Adjustment on Polarization
CC	Compass Calibration, Reading, Checking and Restoring
DT	Testing
DN	Downloading
EN	TX Enabling
II	Idle
IN	Idle and in Inclined mode
LK	Locking
MP	Motion Detection
MM	Manual Movement
PK	Peaking
PS	Positioning
RD	Reading from Modem
SI	System Initializing
SP	Stopping
SR	Searching
ST	Stowing
UP	Uploading

6 – Receive RF/DVB Signal

Receive RF Signal as measured from the LNB. The letter '**N**' next to the RF Value indicates the LNB is not being powered properly and there is an issue with the RF connection, whereas no letter next to the RF value indicates the LNB is powered properly. When the system is not in RF search Mode, and is searching via DVB carrier, the value represents the DVB signal, and the letter "**L**" next to the value indicates a DVB signal LOCK.

7 – Modem Status

Displays the receive strength of the satellite, and the Modem/Transmitter Status.

D	Transmitter Disabled
E	Transmitter Enabled
U	Unknown (Communication with Satellite Modem / VSAT has failed)

(E.g. M140D represents modem signal strength of 140, and transmitter is disabled)

8 – Beacon Receiver Signal

This section represents the strength of the Beacon Receiver Signal (if used). The letter '**U**' next to the Beacon Signal indicates an unlocked status, whereas the letter '**L**' next to the Beacon Signal indicates a Locked on satellite status.

7.7.2. EL

Displays real-time current drawn and speed settings for the elevation motor, as well as real-time elevation angle and limits, offset, window size, and Elevation adjustment gap (internally set and not displayed, however can be found in Log file).

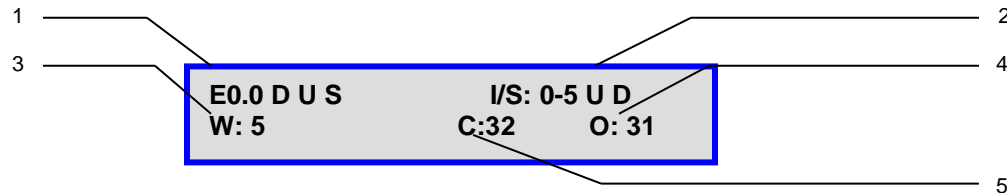


Fig. 16: "EL" (Elevation) Display

1 – Real-Time Elevation Angle

E (Elevation) The number value after the "E" represents the real time elevation angle.

- D** The letter "D" will appear to indicate Down Limit has been reached on the elevation axis
- U** The letter "U" will appear to indicate UP Limit has been reached on the elevation axis
- S** The letter S will appear to indicate the Elevation angle has reached the stow position (Antenna Stowed).

The inclinometer used to read the elevation angle will compensate for an incline up to +/- 15°. For example, if a user is on a 10° slope and the system is searching along the azimuth, if the elevation reading changes due to a horizontal incline, the elevation will adjust to maintain the correct elevation angle while searching along the azimuth.

2 – Current and Speed Settings

- I/S** Real-Time current of the elevation motor is to the left of the dash, and speed constant of the elevation movement is to the right of the dash (i.e. 0-5 represents current of 0 at a set speed of 5).
- U** The letter "U" will appear if there is an up movement on the elevation axis.
- D** The letter "D" will appear if there is a down movement on the elevation axis.

3 - Search Window Elevation Limit

This value represents the amount of degrees the antenna will point above and below the calculated target elevation coordinate when searching for satellite. (W: 3 – implies elevation search window is 3°)

4 - Elevation Offset

The number of degrees at which the iNetVu® Mobile Software will offset the reading from the Inclinometer to produce an accurate (+/- 2°) Elevation Angle (e.g. O: 31 implies elevation offset of 31). These values initially default, and are set after target calibration is performed.

5 – Elevation of Compass Reading Status

Number of degrees that the Antenna requires to be elevated to ensure that the compass is levelled and can acquire an accurate compass reading (see appendix for default values).

7.7.3. AZ

Displays real-time current drawn and speed settings for the azimuth motor, as well as real-time azimuth angle and limits, search window size, and AZ zero.

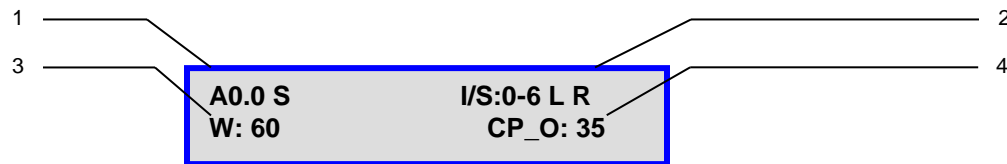


Fig. 17: "EL" (Elevation) Display

1 – Real-Time Azimuth Angle

A (Azimuth) – Real time Azimuth angle reading, down to the tenth of a decimal.
S The letter "S" will appear to indicate stow Limit has been reached on the azimuth axis.

2 – Current and Speed Settings

I/S Real-Time current of the azimuth motor is to the left of the dash, and speed constant of the azimuth movement is to the right of the dash (i.e. 0-6 represents current of 0 at a set speed of 6).
L The letter "L" will appear if there is a 'left' movement on the azimuth axis.
R The letter "R" will appear if there is a 'right' movement on the azimuth axis
 (See appendix for detail on default speed and current settings).

3 - Search Window Azimuth Limit

This value represents the amount of degrees the antenna will search for satellite along the azimuth axis to the left and right of the calculated target antenna azimuth coordinate when searching for satellite. (I.e. W: 60 implies 60° search to the left and right of the target antenna azimuth angle, total range for this example would be 120°).

4 – Compass Offset

This value represents the compass offset value that was added to compensate for inaccuracy of the compass reading.

7.7.4. PL

Displays real-time current drawn and speed settings for the polarization motor, as well as real-time polarization angle and limits, offset, and PL zero.

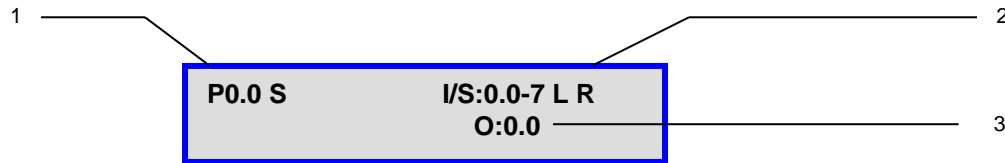


Fig. 18: "PL" (Polarization) Display

1 – Real-Time Polarization Angle

P (Polarization) – Indicates the real time polarization angle of the iNetVu® Antenna.
S The letter "S" will appear to indicate stow Limit has been reached on the polarization axis.

2 – Current and Speed Settings

I/S Real-Time current of the polarization motor is to the left of the dash, and speed constant of the polarization movement is to the right of the dash (i.e. 0.0-2 represents real-time current of 0.0 and a set speed of 2).
L The letter "L" will appear if there is a 'left' movement on the polarization axis.
R The letter "R" will appear if there is a 'right' movement on the polarization axis.
 See appendix for default speed and current values.

3 - Polarization Offset

This value represents the offset in the polarization angle.

7.7.5. GP

Displays GPS Status and current GPS Heading.

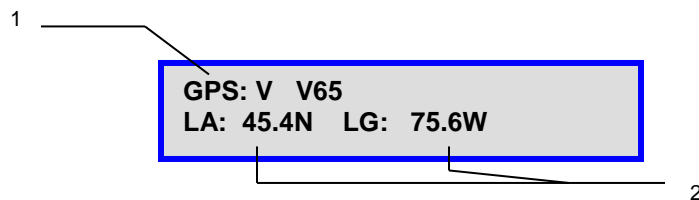


Fig. 19: "GP" GPS Display

1 – GPS Status

V V GPS Status is Valid, second V is for Velocity Status
F GPS Status has failed
O GPS Coordinates have been overridden

2 – GPS Coordinates

LA Current Latitude Coordinate rounded to one decimal place in degree format.
LG Current Longitude Coordinate rounded to one decimal place in degree format.

7.7.6. SM

Displays Search Modes Status, Compass Status, Compass Heading and AZ Window.

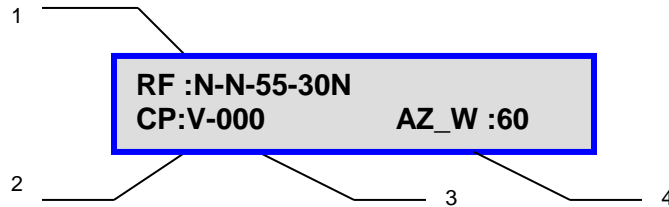


Fig. 20: “SM” Search Mode and Compass Display

1 – RF Search Mode Status

N RF Mode is disabled; **Y** will be displayed when enabled.
N RF override mode is disabled; **O** will be displayed when enabled.
RF Threshold (55) Value will be displayed here, this value is configurable.
RF/DVB signal value (30N) – If in RF search mode this will represent RF signal value, if in DVB Mode it will display DVB carrier signal. The letter ‘**N**’ next to the RF Value indicates the LNB is not being powered properly.
The letter ‘**L**’ next to the value indicates a DVB signal LOCK.

2 – CP (Compass) Status

V Valid – The compass reading is functioning properly
O Override – the compass has been overridden, and direction entered manually considered
FS Full Search – searches a full 360° search window.

3 – Compass Heading

Displays Compass Heading after Compass has been read.

Approximate Headings: North 354°
East 87°
South 176°
West 265

4 - AZ Search Window Status

The Search Window is the area of the sky which the iNetVu® Mobile System will search for the desired Satellite. It uses a rectangular window and searches for the Satellite using smaller concentric windows until the desired Satellite is found.

7.7.7. S1

This menu displays the Target Satellite Number and Longitude, Target Antenna Coordinates, DVB Transponder (Frequency, Symbol Rate, and Code Rate) and LNB Power.

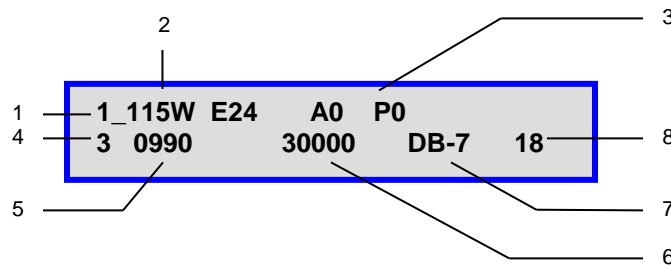


Fig. 21: "S1" (Target Satellite) Display

1 - Target satellite Beam number

2 - Target Satellite Longitude and Hemisphere

3 - Target Satellite Antenna Elevation, Azimuth (within reference to true north), and Polarization coordinates respectively

4 - Transponder Number

(There are usually six (6) transponders for each satellite stored into the controller memory) 0 – 2 are horizontal Receive, and 3-5 are vertical receive) the user may overwrite the transponder data with his/her own (see configuration section).

5 - DVB Transponder Frequency (KHz)

6 – Transponder Symbol Rate (sps)

7 –Transponder Code Rate.

DB-1 = 1/2

DB-2 = 2/3

DB-3 = 3/4

DB-5 = 5/6

DB-7 = 7/8

AUTO (DVB-S1 or DVB-S2A SELECTION)

8 – Power Supplied to LNB from the Controller for the Target Satellite

7.7.8. S2

This menu displays the Reference Satellite Status, Longitude, Target Antenna Coordinates, DVB Transponder (Frequency, Symbol Rate, and Code Rate) and LNB Power. The reference satellite is another search option that could be utilized by the user. If this option is disabled, only the beam reference satellite will be displayed.

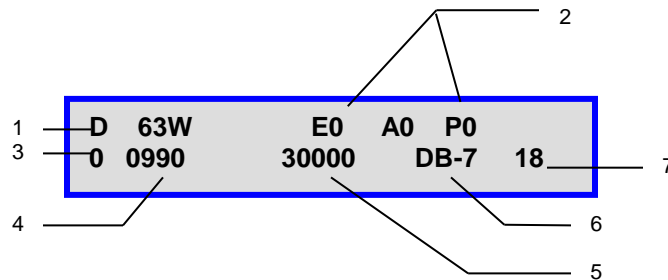


Fig. 22: "S2" (Reference Satellite) Display

1 – Reference Satellite Longitude, Hemisphere, and Status

Status "D": implies the reference satellite option is disabled
 Status "E": implies the target satellite option is enabled

2 – Reference Satellite Antenna Elevation, Azimuth, and Polarization coordinates respectively

3 - Transponder Number (for reference satellite)

(There are usually six (6) transponders for each satellite stored into the controller memory) 0 – 2 are horizontal Receive, and 3-5 are vertical receive. The user may overwrite the transponder data.

4 – Reference Satellite DVB Transponder Frequency (MHz)

5 – Reference Satellite Transponder Symbol Rate (Ksps)

6 – Reference Satellite Transponder Code Rate. (DVBS1 or DVBS2A requirement)

DB-1 = 1/2
 DB-2 = 2/3
 DB-3 = 3/4
 DB-5 = 5/6
 DB-7 = 7/8
 AUTO

7 – Power Supplied to LNB from the Controller for the Reference Satellite

7.7.9. MD

This menu displays the modem status, beacon frequency and signal strength.

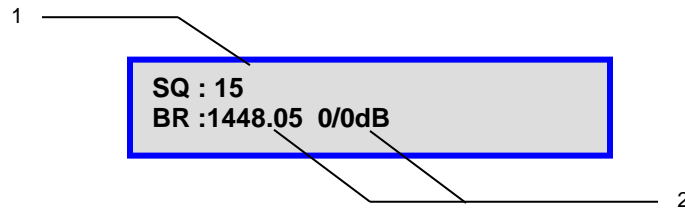


Fig. 23: *Modem and Beacon Receiver*

1 – Modem Communication Status, if the controller is still initializing communication with the modem:

SQ - will appear with modem signal value after modem communication is establish (Modem TX Disabled).

INIT - will appear if no modem communication.

NA - will appear if no modem selected.

2 – Beacon Receiver Frequency and Signal Strength

The Beacon Receiver is an optional unit that could be used to acquire satellite with the 7710 Controller. See “iNetVu User Manual – Beacon Receiver” for details.

7.7.10. Hughes Modem Status (Only)

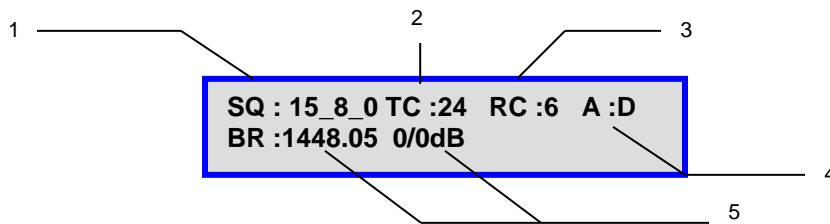


Fig. 24: *Hughes Modem and Beacon Receiver*

1 – Modem Communication Status, controller communication with the modem,

INIT - will appear if still initializing or no communication

NA - will appear if no modem selected.

SQ - Modem Signal Strength will appear after modem communication is establish (Modem TX Disabled), Beam and Carrier will also appear depending on the selected service/modem. First value is signal strength, second is Beam and third is Carrier.

2 – Displays the status of the (TX) satellite receiver transmit state

3 – Displays the status of the (RX) Satellite receiver receive state

4 – ACP status enables or disables the ACP routine after locking on signal

D - Disables the ACP after locking on signal

E - Enables the ACP after locking on signal in which an isolation value is displayed after successfully passing the 2 tests.

A_ST ACP has started.

A_SP ACP has passed.

5 – Beacon Receiver Frequency and Signal Strength

The Beacon Receiver is an optional unit that could be used to acquire satellite with the 7710 Controller. See “iNetVu User Manual – Beacon Receiver” for details.

7.7.11. IP

This menu displays the IP address of the user configured iNetVu® 7710 Controller and Modem. Ensure the IP address of the modem configured is the actual IP address of the modem, and that the 7710 Controller is operating on the same network as the modem.

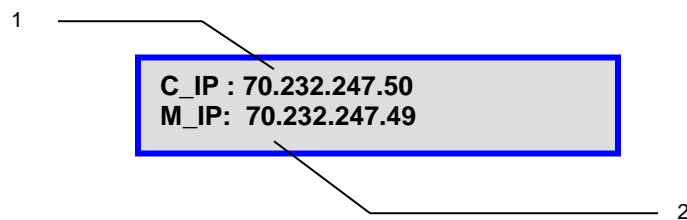
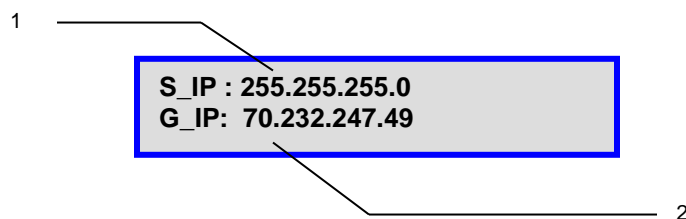


Fig. 25: “IP” (Controller and Modem IP) Display

1 – C_IP: iNetVu® 7710 Controller’s IP Address – Default 192.168.0.2.

2 – M_IP: The Modem IP configured in the 7710 Controller

GW



1 – S_IP (iNetVu® 7710 Controller’s Subnet Mask IP Address – Default 255.255.255.0)

2 – Gateway IP Address (Default: 192.168.0.32 or 192.168.100.32 depends on Modem Type/Service)

7.8. OPERATION

LCD Menu options for available searchable satellite beams, enable transmitter, stow, controller restore to default settings and compass calibration routines and functions. Pressing on any option in the operation menu will trigger that command to be performed.

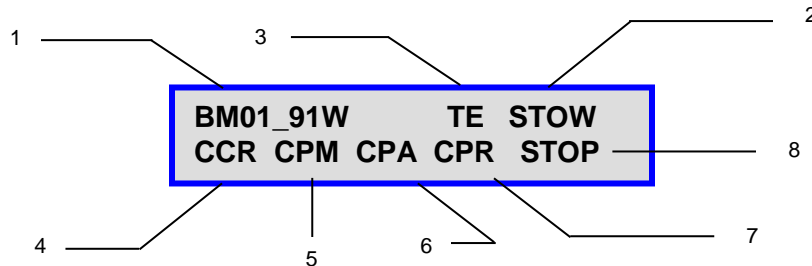


Fig. 26: Default Operation Menu

BM01	(Find Satellite BEAM ID) Performs automatic satellite acquisition on the Beam ID selected.
TE	(Transmitter Enable) Enables the transmitter after locking onto the designated satellite. Field toggles between TE & TD, default is TE.
TD	(Transmitter Disable) Disables the transmitter after locking onto the designated satellite. Field toggles between TE & TD.
STOW	Stows the antenna
CCR	Restores controller platform values to default settings based on platform type and service type.
CPM	Manual calibration of compass (3 point Calibration)
CPA	Automatic compass calibration (4 point calibration)
CPR	Restores Compass to factory calibrated state
STOP	Stops the current operation

1 – Satellite Beam & Longitude (**BM**)

Automatically finds and locks onto the selected satellite beam signal by communicating with the Satellite Modem and using the GPS coordinates, the compass heading and internal parameters of the Satellite Modem. Typically, it takes approximately 3-5 minutes to find satellite. The “Service Type” must be selected and “Update Look-up Table” button applied for the correct Beam ID information to propagate when using Tooway Modem Type. The HN_KA Modem Type has a choice of using the beam table (BEAM_T) option or manually entering the satellite parameters (Config) option.

2 – Stow

Moves the system to a position where the AZ is zeroed triggering the AZ limit switch and then moving on the EL axis in the up or down direction depending on the configured system. The EL UP or EL ST Limit switches are turned on when movement on EL axis completes.

3 –Transmitter Enable (**TE**)

Enables the Transmitter once locked onto satellite.

3 - Transmitter Disable (**TD**)

Disables the Transmitter once locked onto satellite.

4 – Restore Controller Defaults (**CCR**)

This restores the beam, modem and platform to its default configuration settings.

5 – Compass Manual Calibration (**CPM**)

This is where the manual compass calibration heading is read. During the 3 point compass calibration, the system will be deployed to an angle (0.90 and 180) after system is deployed to the first angle depress CPM, compass angle will be calibrated.

Press CPM at each angle to achieve the 3 point manual calibration.

6 – Compass Automatic Calibration (**CPA**)

Ensure that there are no metallic objects that could interfere with the Compass, and that the Mobile Platform is on level surface.

Orient the so that back of reflector points North. If Platform is vehicle mounted ensure front end (windshield window) is pointed North. It is recommended that you use an external compass to be as accurate as possible with the orientation.

The Antenna will now rotate in 90° intervals and attempt to calibrate the compass. The LCD Screen will indicate that the Compass Calibration has been completed.



7 – Restore Compass Factory Calibration (CPR)

Restores the compass to factory calibration. Ensure the compass is levelled/flat when restoring to factory calibration for optimum results.

8 – Stop

Stops the current operation.

7.9. BEAM

The LCD Configuration Interface is password protected.



Fig. 27: Password screen

The default password is “**password**” (**case sensitive**). Use the “↑” or “↓” button to select the characters, and the “←” or “→” to navigate through the character fields. Press on the “ENTER” button of the front panel when the password has been completely entered.

If the password has been changed, and the user does not know the password, entering a specific reset ID in the bottom row will reset the password to the default (“password”). The Reset ID (RST) is “**123456789**”

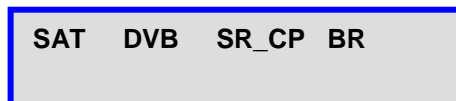


Fig. 28: Beam Configuration Menu

SAT	Allows the user to configure and save the Beam ID, Orbital slot / Longitude of the desired Target Satellite (1-64 Satellite Beams), along with the corresponding DVB Transponder. Reference Satellite is also enabled or disabled under this menu.
DVB	Allows the user to configure and save the Satellite DVB parameters such as (DVB type, Frequency, symbol rate etc...), and LNB Power Requirement.
SR_CP	Allows the user to configure and save the search mode (RF Search or DVB mode), Compass, RF Threshold and AZ search window.
BR	Beacon configuration for each Satellite.

7.9.1. SAT (BEAM)

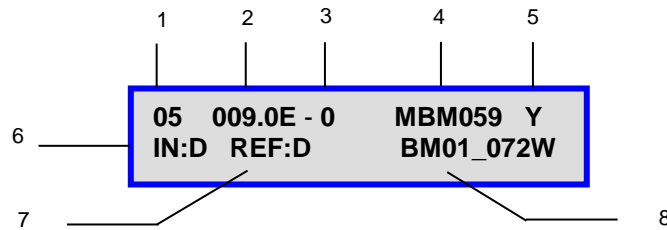


Fig. 29: Beam and orbital Configuration

1 – Target Satellite Beam ID

2 – Target longitude and Hemisphere

3 – Transponder number Horizontal Receive (0-2), Vertical Receive (3-5)

4 – Modem Beam ID

5 – Read Carrier From Modem (iDirect & Hughes Ku Only)

Y – Enabled

N – Disabled

6 – Inclined Satellite Search

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. If signal strength drops before the re-peak time is due, the system will automatically re-peak to maintain signal strength. Feature enhanced and will be used with regular Ku/Ka services to maintain strong signal when platform shifts or swings in position. The Inclined Satellite option will ignore Motion Detection if it's enabled at the same time; the Inclined Satellite Search feature has a higher priority than the Motion Detection and thus will render it ineffectual.

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

7 – Reference Satellite

D – The user should select “D” to disable this option.

E – If the user wishes to use the reference satellite, “E” should be selected.

8 – Reference Satellite Beam ID

The reference satellite is another search option that could be utilized by the user. The controller will lock onto the Reference satellite DVB carrier, and will pivot to the target satellite position to peak on the modem signal. Users acquiring Satellite using RF Search or direct DVB search with the Target satellite **DO NOT** require this option.

7.9.2. DVB

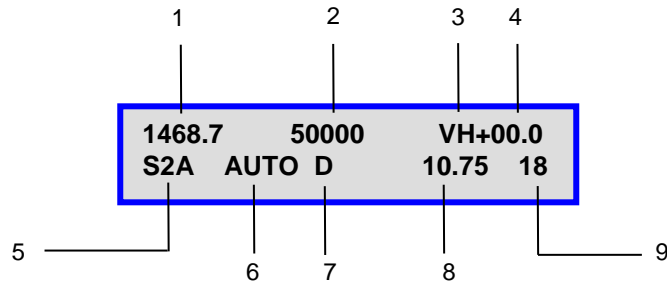


Fig. 30: DVB Configuration Display

1 – Transponder Frequency (MHz)

2 – Transponder Symbol Rate (Ksps)

3 – Transponder polarity (TX & RX) TX here is vertical and RX is horizontal polarity (VH)

4 – Carrier Skew - Not applicable on Ka Band platforms

This denotes any known Skew on the target satellite. The carrier skew is used to adjust the difference between the carrier polarity and physical polarity on the mount. Most satellites have this value set to zero while some may have a built-in skew such as Eutelsat Telecom 2C and 2D. The allowed skew range is +/-90.

5 – DVB Type, the user can configure the type of carrier to search for either DVB-S1 or DVB-S2ACM

6 – Transponder FEC Rate

DVB-S1 Requirement - DB-1 = 1/2
 DB-2 = 2/3
 DB-3 = 3/4
 DB-5 = 5/6
 DB-7 = 7/8
 DVB-S2A - AUTO

7 – LNB 22 KHz Tone

The 22 KHz tone can be disabled or enabled for supporting modems that allow for acquisition with LNBs that switch frequency ranges by adjusting the 22 KHz tone. This option is disabled by default.

D – Disabled
 E – Enabled

8 – LNB LO

Configurable to allow satellite accusation when frequency changes, values range from 10.75, 9.75, 10.00, 10.60 and 11.30.

The default value should be set to **10.75**, the user is not required to change this value unless necessary, otherwise select the carrier from the table or enter one if not listed.

9 - LNB Power (Target Satellite)

In cases where the LNB requires more power than the modem can provide, or if the user would like to power LNB from the controller, or if the user would like to find satellite without the use of a modem, this option allows for power from the controller to be supplied to the LNB through the RX IN cable from the controller to the platform itself.

DD – will disable this option, and provide power to the LNB straight from the modem. In this case, a splitter must be used for the RF connection as depicted in the figure below.

7.9.3. SR_CP

This menu allows for the configuration and saving of the Satellite Search Modes. The 64 Beams which is the number of configurable Beams supported can be each configured with different RF Search Mode parameters.

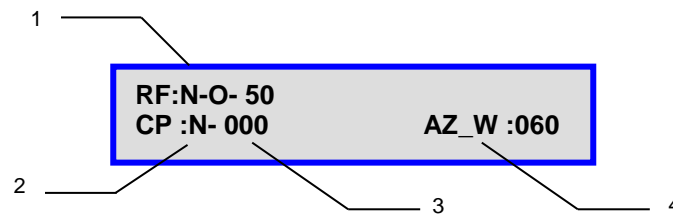


Fig. 31: Search Mode Configuration

1 – RF Search Mode

N RF Mode is disabled; **Y** will be displayed when enabled.

N RF override mode (second digit/letter) is disabled; **O** will be displayed when enabled.

RF Threshold (50) Value will be displayed here, this value is configurable.

2 – CP (Compass)

V Valid – The compass reading is functioning properly

N Normal – Full Search NOT selected, (nor is compass overridden).

O Override – the compass has been overridden, and direction entered manually considered

F Full Search – searches a full 360° search window, Fly-away systems (70 °), Full search also overrides compass.

3 – Compass Heading

Compass Heading after Compass has been read.

Approximate Headings:	North	354°
	East	87°
	South	176°
	West	265

4 - AZ Search Window

The Search Window is the area of the sky which the iNetVu® Mobile System will search for the desired Satellite. It uses a rectangular window and searches for the Satellite using smaller concentric windows until the desired Satellite is found. The window value represents the amount of degrees the antenna will search for satellite along the azimuth axis.

7.9.4. BR

This Menu allows the user to set the Beacon and ACQ Attenuation with different values for multiple Configurable Satellites. This option must be enabled under the CC menu (Com Console) before this feature can be configured.

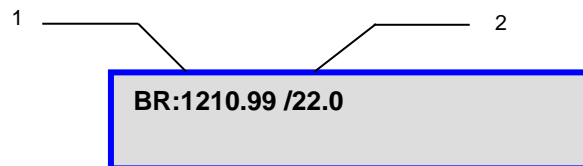


Fig. 32: *Beacon Configuration*

1 – Beacon Frequency

Each Beam can have its own Beacon Frequency configured. Since this field is configurable, the operator can change the Beacon to any desirable frequency to work with the selected Beam.

2 – ACQ Attenuation

Beacon signal peaking power level.

7.10.CONF

This Menu will allow the user to select and set the configuration of the iNetVu® System as well as the Reference satellite option. The target and the reference satellite(s) can be selected and set from the pre-configured list. A description of each menu and their purpose is outlined below. This section explains the different options of the configuration (CONF) menu, and what each component means.

A step-by-step procedure of how to configure the system is explained in the corresponding Service Provider Based User Manuals. Please refer to the service manual quick start you are using with the 7710 Controller.

***** Password must be entered before accessing CONF menu and submenus. *****

SAT	MDM	EL	AZ	PL	GP
MT	CC	PW	SG	IP	SR

Fig. 33: Configuration Menu

SAT	Allows the user to configure the Target satellite, to also enable and configure the Reference satellite.
MDM	Allows the user to configure the Modem parameters such as transmit and receive polarization, as well as frequency and symbol rate (if required).
EL	(Elevation) Allows configuration of the elevation offset.
AZ	(Azimuth) Allows configuration of the compass offset.
PL	Polarization) Allows configuration of the polarization zero, skew adjustment, stow limit, polarization offset, speed, and current limits.
GP	(GPS and Compass) Configuration of GPS coordinates and Compass parameters.
MT	Contains configuration of the platform type, platform version and serial number.
CC	Contains controller configuration feature information such, Console Port Configuration, DHCP Server, Motion Detection, Unattended Operation, Inclined Orbit etc...
PW	Contains the password information. The user may change the password in this screen.
SG	(Gateway and Subnet) Allows for the configuration of the controller subnet IP address, as well as the controller gateway IP address.
IP	Configuration screen of the controller IP address, and the VSAT modem's IP address.
SR	The user may configure the service type, as well as the interface used to establish communication between the controller and modem (telnet, console, etc.) Ka services (HN_KA) will have the ability to change Beam ID.

7.10.1. SAT (CONF)

This menu allows for the configuration of the target satellite(s) and the reference satellite.

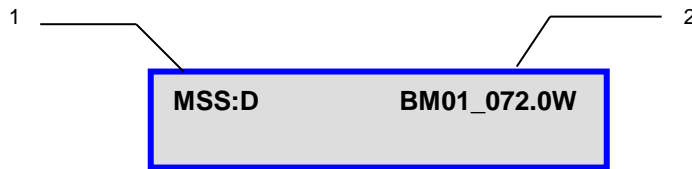


Fig. 34: Target Satellites display

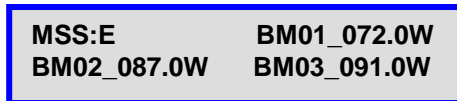
1 – Multiple Satellite Search

This feature when enabled will allow the search to be carried out on three listed target satellites. The search will automatically switch to the next listed target if the previous target search fails.

D – Disabled

E – Enabled

When Multiple Satellite Search feature is enabled the three Target Search Satellites will be displayed.



2 – Target Satellite

Satellite Beam ID and orbital slot/Longitude of the satellite. The **Find Satellite** command will use this beam information that is configured under the Satellite and DVB Transponder Settings when attempting to find and lock onto the satellite signal. Only Hughes modem type will display info all others will display NA

7.10.2. MDM

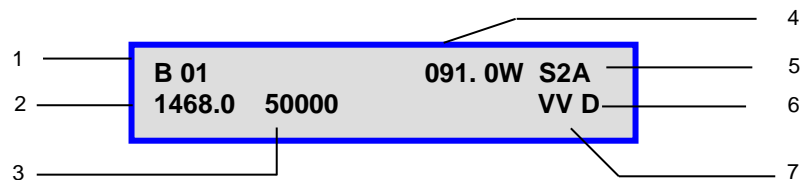


Fig. 35: Modem Configuration

1 – Modem Parameter Source

Configured Satellite Modem to read the Beam ID from the Controller, Modem or Beam ID Table. (HNS Ku Only).

- C** – Read Modem Frequency, Symbol Rate etc... from the controller configuration.
B – Read Modem Frequency, Symbol Rate etc... from the Configuration Table.
M – Read Modem Frequency, Symbol Rate etc... from the modem.

2 – Configured Satellite Modem Receive Frequency in MHz with no decimals (HNS Only)

3 – Configured Satellite Modem Symbol Rate in sps (HNS Only)

1Msps = 1000 Ksps = 1 000 000 sps

4 – Longitude & Hemisphere (HNS Only)

Modem longitude and Hemisphere.

5 – DVB Configuration (HNS Only)

The user can configure the type of carrier to search for either DVB-S1 or DVB-S2A. The DVB-S2 ACM carrier requires controller model 7710 Rev 1.0+ or greater.

6 – 22 KHz Tone (Enable/Disable) (HNS Only).

This feature allows users to enable/disable the 22 KHz tone for supporting LNB's.

- E** – Enabled
D – Disabled

7 – Receive and Transmit Polarization.

- HH** – Horizontal Transmit, Horizontal Receive
HV – Horizontal Transmit, Vertical Receive
VH – Vertical Transmit, Horizontal Receive
VV – Vertical Transmit, Vertical Receive

7.10.3. EL

The EL menu allows for the Configuration of the elevation axis, only configurable option is the elevation offset.

1 — **O: 004.5**

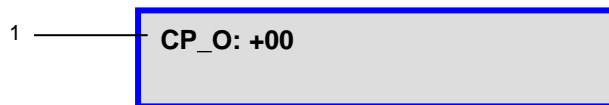


1 – Elevation Offset

The Elevation Offset is specific to each type of platform. The user may set the offset with the range of 0°-120°, although altering this number from its default value may give an inaccurate offset reading. This should not be tampered with without first consulting a C-COM Technical Support Representative.

7.10.4. AZ

The AZ menu allows configuration of compass offset.

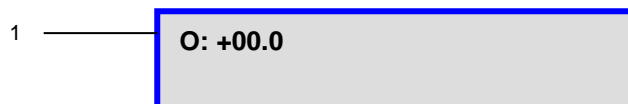


1 – Compass Offset

A fixed offset could be used to adjust the compass heading. This value would be added to the calculated compass heading to compensate for any consistent inaccuracy of the compass reading.

7.10.5. PL

The PL menu allows for the configuration of the polarization axis.



1 - Polarization Offset

By default, this polarization-offset value is set to +0°. If there happens to be a requirement for a polarization offset in the satellite position, the user may manually enter this value in this area. This area is also updated automatically if the skew adjustment procedure recognizes inaccuracy in the target polarization angle. Misconfiguring this field will result in undesirable results.

O – Indicates a PL offset is allowable and the value is displayed

N – Indicates PL is disabled or not applicable

7.10.6. GP

Allows for the Configuration of the GPS parameters and settings.

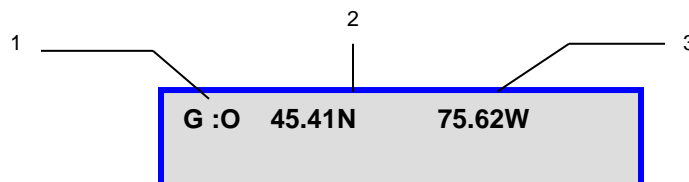


Fig. 36: GPS Configuration

1 – GPS Status Configuration

- N** Use Coordinates from GPS Antenna
O Override GPS and use the coordinates entered (2) and (3). Enables the GPS coordinates to be manually overridden. This should only be enabled if the GPS Antenna is malfunctioning and the user has a reliable, alternate source for coordinates.

CAUTION

Indicates a situation or practice that might result in property or equipment damage.

Note 1: If you have overridden the GPS coordinates, they will have to be updated if the Mobile Platform has moved to a new location since the overridden values will no longer be accurate.

Note 2: Overriding the GPS will affect movement protection on all mobile platforms preventing them from automatically stowing if vehicle movement and/or severe motion are detected. If the vehicle drives off with the platform deployed, it will not stow as it should because the GPS is overridden. Moving vehicle GPS speed and location must reach min 5km/h and or Elevation angle changes by 2 or more degrees for the movement protection feature to trigger!

2 – GPS Latitude Coordinate

3 – GPS Longitude Coordinate

7.10.7. MT

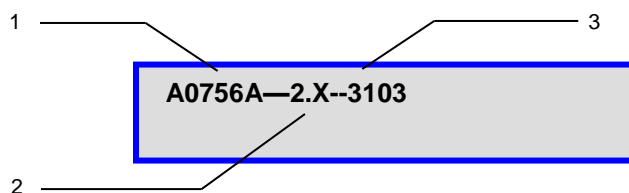


Fig. 37: Platform Information

1- Platform Type

The user can configure the platform type using iNetVu LCD panel. See section 7.6 for complete list of supported platforms.

- A0755A** - iNetVu® Ka-75V ver.10.x, New Gen Drive-Away 75cm (Ka - Band Circular)
- A0756A** - iNetVu® Fly-75V ver.1.x New Fly-Away 75cm (Ka - Band Circular)
- A0986A** - iNetVu® Fly-98G/H/V ver.1.x, 2 Axis New Fly-Away 98cm (Ka - Band Circular)
- A0986B** - iNetVu® Fly-98G/H/V ver.1.x, 3 Axis New Fly-Away 98cm (Ka - Band Circular)
- A0986C** - iNetVu® Fly-981 ver.1.x, 3 Axis New Gen Fly-Away 98cm (Ku – Band, XPOL)
- A1201A** - iNetVu® 1201J ver.10.x, New Gen Drive-Away, 1.2m Ku Band
- A1206A** - iNetVu® Fly-1202V ver.1.x, New Fly-Away 1.2m, Ka Band Viasat Tria
- A1206C** - iNetVu® Fly-1202 ver.1.x, New Fly-Away 1.2m, Ku Band
- A1805C** - iNetVu® 1801, New Gen Drive-Away, 1.8m Ku - Band

A1806C - iNetVu® Fly-1801, 3 Axis New Fly-Away 1.8m Ku - Band**2 – Platform Version Number**

The user must select the platform version type to ensure the correct configuration parameters and settings are referenced when operating the system. The platform version when selected will differentiate hardware and software configuration on New Generation platforms which may affect the operation.

3 - Platform Serial Number

The user must enter the last five-digits of the platform serial number located on the iNetVu® Mobile or Fly-away Platform. If platform and controller were purchased as a set, the number has been preconfigured for you.

7.10.8. CC

This menu allows for the configuration of the controller input settings.

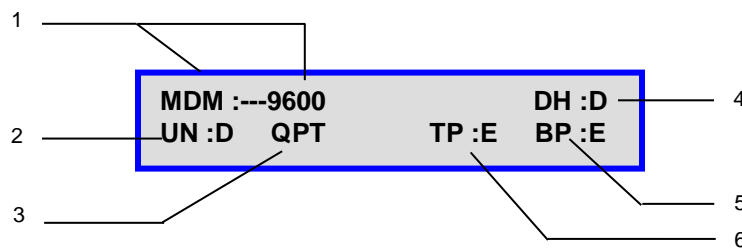


Fig. 38: Console Port and Controller Features

1 – Console Port Configuration

Used for the configuration of the console port on the 7710 Controller. The Console port could be used for the following:

a) MDM (Modem Communication)

If the COM port is used to establish communication between the Controller and the VSAT Modem (i.e. iDirect, Viasat, etc.), then MDM must be selected in this field, along with the Baud Rate the Modem operates on, prior to configuring the Service, and Communication Interface.

MDM--4800
MDM--9600
MDM--38400

b) B_R (Beacon Receiver)

The Beacon Receiver is a satellite acquisition lock controller that could be used alongside the 7710 Controller as an option. The Beacon Receiver will lock on the Beacon Frequency of a satellite based on the power density of the signal. If the optional Beacon Receiver is used, B_R must be selected for the console. The default baud rate is 2400.

c) NMEA

This option allows the user to communicate and output GPS readings/values from the 7710 Controller via COM Port (RS232) connection. The default baud rate is 9600.

d) DEBUG-19200 (internal use only)

2 – Unattended Operation

This option is used for remote operations where system is left unattended as the name indicates, mainly for unmanned sites. This feature must not be used when the iNetVu system is being moved around or in transport mode. In this case, the system should be powered off completely. Otherwise, there is a risk of the antenna attempting to deploy while vehicle is moving. Please ensure this feature is turned off when vehicle is in transit from one location to another.

The user may disable, or set the unattended re-deploy delay time to 5, 10, or 15 minutes. If the system detects motion it will wait 1min, if dish still on signal the system will re-acquire satellite, otherwise the dish will stow due to motion or movement, the system will automatically re-acquire satellite depending on the user entered delay time after stowing. Initial stow will only wait 30 seconds no matter what the selected delay time is set to before re-acquiring satellite.

For example, if the user selects 5 minutes from the drop down menu, and the system stows due to motion or movement while operational, on first stow it will only wait 30 seconds before re-acquiring satellite.

The second stow, system waits Five (5) minutes + 30 seconds before automatically re-acquire the satellite signal. The routine uses the following formula: Waiting Time for re-acquire == 30S+ (retry times*selected delay time) default retry time at first stow is 0, second stow is 1, etc... until one (1) hour (3600 seconds) reached. If after (1) hour system does not find satellite it will continue to try on every hour thereafter. The retry time will be reset 0 after each time the system locks on satellite.

DIS: Disabled

1: Re-acquire Satellite in 5 minutes

2: Re- acquire Satellite in 10 minutes

3: Re- acquire Satellite in 15 minutes

DANGER: The system may try to deploy if this option is selected and vehicle becomes in motion. Unattended option must be disabled when vehicle is moving and system is NOT powered off.

3 – QPT (Es/No Value)

The Maximum energy to noise of a modem or SNR signal that can be configured to save time during the satellite peaking routine. The peaking will transition from standard to quick once the configured Es/No value is reached.

0---(threshold==55)

1---(threshold==85)

2---(threshold==115)

3---(threshold==145)

4---(threshold==175)

5---(threshold==205)

4 – DHCP Status

The 7710 Controller can be programmed to obtain an IP address from a DHCP Server (i.e. modem, router, etc.).

D – DHCP Disabled (IP must be entered statically).

E – DHCP Enabled (Controller will dynamically obtain an IP address from the DHCP Server).

5 – Beep

This option allows for enabling and disabling the Beeping sound when navigating the LCD screen through the front panel keypad.

D – Beep Disabled, the sound will be completely removed.

E – Beep Enabled, a beeping sound will occur every.

6 – TX Protection (TP)

The TX will be disabled and a 60 seconds waiting period will be endured before any further action is applied when a small or big motion is detected. The system will re-peak if the antenna is still locked on signal after the 60 seconds have elapsed or stow if no signal exists. The 60 second waiting period will reset (start over during a 5min span) and a new 60 seconds count will be started if motion is detected at any time during the 60 seconds waiting period. The antenna will stow after 5 minutes have elapsed whether it's locked on signal or not. System will redeploy and attempt to lock on satellite if stowed and “unattended Operation” is enabled. See Unattended feature for more details. Motion Detection will not trigger if Inclined Satellite is enabled as the later has a higher priority and will instead be the one that activates.

D - Disabled

E - Enabled

7.10.9. PW

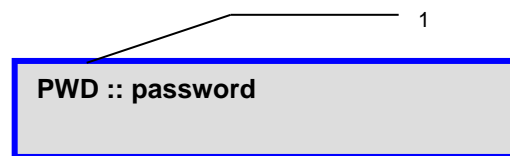


Fig. 39: Controller and Web GUI Password

1- Current LCD and Web Interface Password

The user may change this password by using the “↓” and “↑” buttons on the front panel of the 7710 controller and the “→” and “←” buttons to navigate through the character fields. This password must be remembered for the user to re-enter the LCD screen configuration interface, or the web interface.

7.10.10. SG

This menu will allow the user to configure the subnet mask IP address and the Gateway IP address of the iNetVu® 7710 Controller.

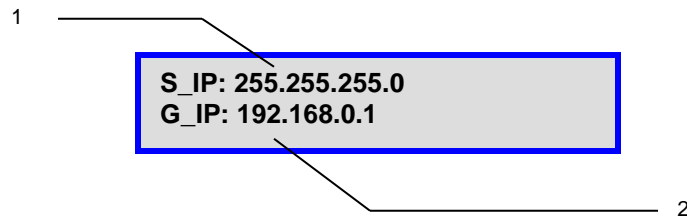


Fig. 40: SG (Gateway) Configuration

- 1 – S_IP (iNetVu® 7710 Controller's Subnet Mask IP Address – Default is (255.255.255.0)
- 2 – Gateway IP Address (Default: 192.168.0.1) this can be changed to support the network you are on.

7.10.11. IP

This menu will allow the user to configure the controller IP address, as well as the Modem IP address.

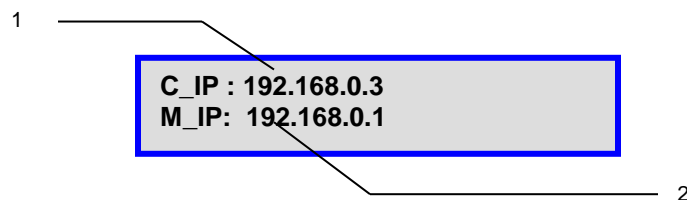


Fig. 41: IP Configuration

- 1 – iNetVu® 7710 Controller's IP Address
- 2 – Modem IP Address

7.10.12. SR

This menu will allow the user to configure the controller to the service used (select modem type) for 2-way satellite communication.

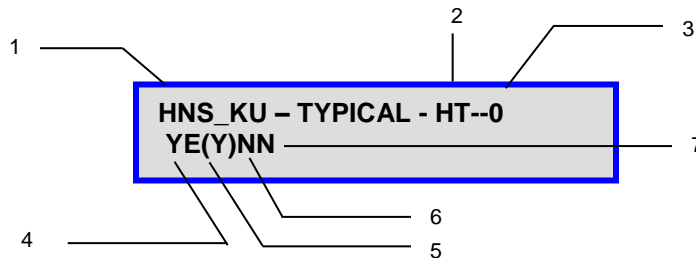


Fig. 42: SR (Service) Configuration

1 – Two-Way Mobile Service Selection

Before communication is established with the modem, the user must define the service in use. The iNetVu® 7710 Controller supports several services, including:

iDirect – iDirect Service
Tooway – Viasat Tooway Ka Service
VA_SB2 – Viasat SurfBeam2 Ka service
HNS_KU – Hughes Ku Service
HNS_KA – Hughes Ka Service
HNS_JT – Hughes Jupiter Service on HT series modems
COMTCH – Comtech Service
IPstar – IPstar Service
Gilat – Gilat Service on SkyEdge
NEWTEC – Newtec Ku service (OpenAMIP)
NV_SAT – NovelSat Service
DATUM7 – Datum Service
STM – STM Satlink service

NA - Stand Alone service - Used to locate and lock onto a manually configured satellite using the DVB receiver unit inside of the controller independent of the modem. The manual configuration requires:

- Orbital Slot of Satellite
- Receive Polarization
- DVB Type
- L-Band or Ku-Band Rx Frequency (kHz)
- Symbol Rate (ksps)
- FEC Code Rate

NA – Sub-ID

Choose **Typical** for normal operation or select one of the custom created files from the list when using multiple beacon satellite search. User must depress Restore Defaults button to use the selected option and allow features of that selection to propagate to the beam configuration section. This is extremely important when using the custom files.

2 – Modem Communication Interface

COM – Console Port Interface

TCP – TCP Interface

HTTP – HTTP Interface

UDP – User Datagram Protocol

AMIP – IP based Protocol that facilitates exchange of information between ACU and Modem

3 – Modem Delay Time

This allows users to delay Controller communication to allow slower modems to catch up. The default setting is 0 – 1s user has option for a 10s delay.

4 – Automatic TX Disable

The controller will automatically disable the transmitter if a reset is done to the modem or controller during transmission and communication between the controller and modem is re-established. The action on the TX disable occurs only after the communication between modem and controlled is restored. Default setting is Y.

Y – (Yes) Disable TX when power is restored after modem is reset.

N – (No) **DO NOT** disable TX after modem is reset and power is restored.

5 – Enable iDirect Broadcast

This allows iDirect users with broadcast configured modems, to lock onto a DVB carrier, and enable the transmitter in the iDirect modem automatically after peaking.

D – Disabled

E – Enabled

5 – Disable ACP (Hughes Ku)

Allows automatic cross pol to be performed. This is available for Hughes Ku service only.

Y – (Yes) Disable Automatic cross-pol

N – (No) **DO NOT** Disable Automatic cross-pol

6 - Dual Beam Search (iDirect Only)

The feature is for Dual coverage iDirect KU band, satellite search will be based on beam ID of the dual beam and not the target satellite longitude, if the search on the first beam fails it will automatically switch to the next beam. The search will remain in an endless loop until signal is acquired. Dual Beam Search option is valid only when “Read Carrier From Modem” is enabled.

Y – Enabled

N – Disabled

7 – Auto Start (iDirect Only)

This feature is available with the iDirect service and will automatically start the satellite search as soon as the communication between the modem and controller are established. By default, this feature is disabled and is only available if modem is configured for Dual Beam Search and the “Read Carrier From Modem” is enabled. This feature can be used in situations where the system is setup at a remote site and power outages regularly occur.

Y – Enabled

N – Disabled

7.11.TEST

E&A&P	DPLY	DPLY_C
CP	A_ACP	M_ACP
		S_ACP

Fig. 43: *Test Menu*

E&A&P	Will allow for Demo Testing on all axes (elevation, azimuth, and polarization) for a user specified angle range.
DPLY	Deploys the antenna to a user specified azimuth, elevation, and polarization position.
DPLY_C	Will read the compass heading at a user specified elevation, azimuth, and polarization target point.
CP	Tests the compass' heading and accuracy by rotating the antenna at 90° intervals and comparing the compass readings with the actual antenna's movement.
A_ACP	Performs an automatic ACP test for Hughes service.
M_ACP	Performs a manual ACP test for Hughes service.
S_ACP	This operation will stop the ACP test from continuing.

7.11.1. E&A&P

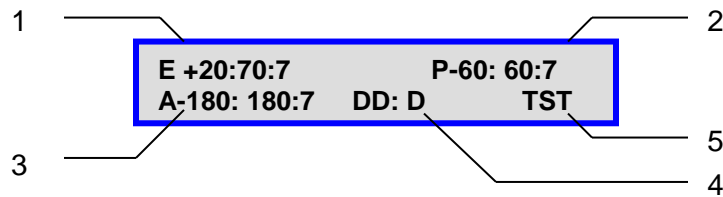


Fig. 44: Test/Demo EL, AZ, PL Configuration

1 – Elevation Range

Allows the user to set the start and stop angle of the elevation axis, as well as set the specific speed for elevation movement. (E +20:70:7 –implies from angle 20 to 70 at speed 7).

2 – Polarization Range

Allows the user to set the start and stop angle of the polarization axis, as well as set the specific speed for polarization movement. (P -60:60:7 –implies from angle -60 to 60 at speed 7).

3 – Azimuth Range

Allows the user to set the start and stop angle of the azimuth axis, as well as set the specific speed for azimuth movement. (A -180:180:7 –implies from angle -180 to 180 at speed 7) Fly-away systems will have a different range.

4 – Axis Selection and looping option

The first two characters refer to the axis selection (i.e. **DD**: D).

DD	Disable Test for all axes.
EL	Perform test on the Elevation axis only.
AZ	Perform test on the Azimuth axis only.
PL	Perform test on the Polarization axis only.
AA	Perform tests on all the axes.

The third character refers to the looping intervals between tests (i.e. DD: **D** or DD: **1**).

D	Disables looping, test will only be performed once.
1	Infinitely loops with NO_DELAY interval between tests.
2	Infinitely loops with 10-seconds interval between tests.
3	Infinitely loops with 30-seconds interval between tests.
6	Infinitely loops with 1min interval between tests.
9	Infinitely loops with 3min interval between tests.

5 – Test Selection

Initiates the test on the specified axes according to the specified ranges, and speeds. Press up or down key, first letter will flash then press ENTER, the test routine will start.

7.11.2. DPLY

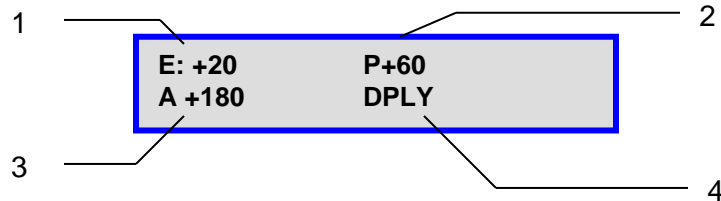


Fig. 45: *Deploy Configuration*

1 – Elevation Movement

User-defined elevation angle of deploy

2 – Polarization Movement

User-defined polarization angle of deploy

3 – Azimuth Movement

User-defined azimuth angle of deploy

4 – Deploy

Automatically moves antenna to the manually entered Elevation, Azimuth and Polarization angles.

7.11.3. DPLY_C

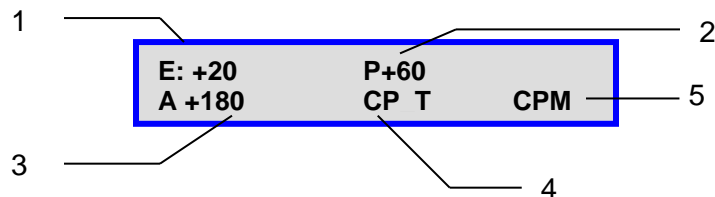


Fig. 46: *Deploy Compass Reading Angles*

1 – Elevation Movement

User-defined target elevation angle offset for compass reading

2 – Polarization Movement

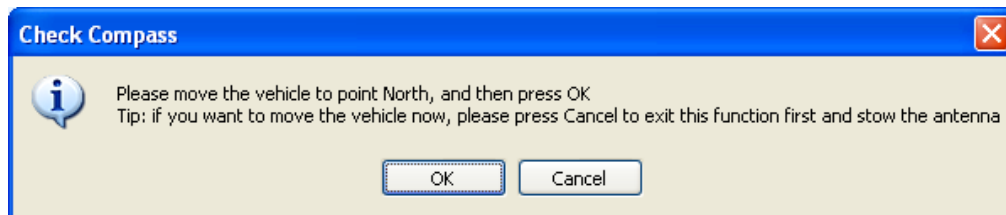
User-defined target polarization angle for compass reading

3 – Azimuth Movement

User-defined target azimuth angle for compass reading

4 – Check Compass (at specified target point)

Tests the compass' heading and accuracy at the user defined Elevation, Polarization, and Azimuth angles, by rotating the antenna at 90° intervals and comparing the compass readings with the actual antenna's movement. This function is mainly used for testing purposes. Ensure proper orientation (front of vehicle is point north). Popup (see below) displayed in Software application.



Antenna will move to the target Elevation, Polarization, and Azimuth for reading the compass heading such that the user can determine if the compass reading is accurate at that point.

5 – Manual Compass Calibration

Will allow user to deploy and calibrate the compass manually at 3 points (0, 90 and 180), all three angles must be calibrated for the Manual Calibration process to successfully calibrate the compass.

7.11.4. A_ACP

Initiates an automatic cross-pol test.

7.11.5. M_ACP

Initiates a Manual cross-pol test.

7.11.6. S_ACP

Stops the cross-pol testing instantly.

7.12.INFO

Displays information regarding the iNetVu® 7710 Controller’s firmware, software versions and MAC address information, the Mobile Platform type currently configured, and any Error Codes detected.

CC1	CC2	DVB_D	DVB_P
MOD	SYS	MAC	ERR

Fig. 47: “INFO” (Information) Display

CC1	Contains information pertaining to the iNetVu® 7710 Controller hardware version, Controller ID, firmware version, boot loader version, Signal
CC2	Contains information pertaining to the iNetVu® 7720 Controller hardware version, Controller ID, firmware version, boot loader version, Signal
DVB_D	Contains information pertaining to the type of DVB Module in use.
DVB_P	Contains information pertaining to the DVB lock status, as well as the real-time DVB data such as type, modulation, frequency, code rate, and symbol rate.
MOD	Contains information pertaining to the modem ID, serial number, and version.
SYS	Contains information pertaining to the Platform Type, Serial Number.
MAC	Threshold, MAC address and configuration ID.
ERR	Contains information pertaining to the error code if an error occurs.

7.12.1. CC1

This branch menu displays the Central Controller ID (serial number), Hardware Version, Firmware, and Boot loader Version

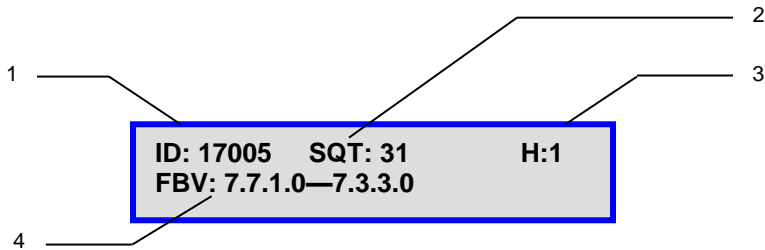


Fig. 48: “CC1” (Controller Info) Display

1 – Controller ID Number

The iNetVu® Controller Serial Number is located on the base of the controller. The ID displays the last 5 digits of the Serial Number.

2 – Signal Quality Threshold

Minimum SNR Value required for the iNetVu® 7710 Controller to validate signal.

3 – 7700 Series Central Controller Board Hardware Type Version

4 – 7700 Series Central Controller Firmware and Boot loader version

The firmware version is to the left of the dash (i.e. **7.7.5.0** - 7.7.3.0), and the boot loader version is to the right of the dash (i.e. 7.7.5.0 - **7.7.3.0**).

7.12.2. CC2

This branch menu displays the Remote Drive Module ID (serial number), Hardware Version, Firmware, and Boot loader Version.

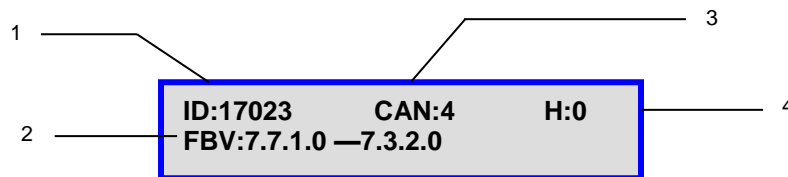


Fig. 49: "CC2" (Remote Drive Module Info) Display

1 – iNetVu® 7720 Remote Drive Module ID

The iNetVu® 7720 Remote Drive Module Serial Number is located on the back of the Remote Drive. The ID displays the last 5 digits of the Serial Number.

2 – iNetVu® 7720 Remote Drive Module Firmware and Boot loader version.

The firmware version is to the left of the dash (i.e. **7.7.5.0** - 7.3.2.0), and the boot loader version is to the right of the dash (i.e. 7.7.5.0 - **7.3.2.0**).

3 – Canbus address

4 – 7720 Remote Drive Module Board Hardware Type Version.

7.12.3. DVB_D

This branch menu displays the controller DVB Module Type and ID.

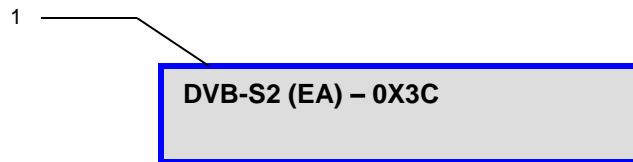


Fig. 50: “DVB” (DVB Module) Display

1 – The DVB Module (Tuner) and ID currently embedded into the iNetVu® 7710 Controller.

7.12.4. DVB_P

This menu displays the real time DVB module information. If there is no lock on DVB, it will simply indicate “No Lock”, otherwise it will display real time DVB information such as DVB type, modulation, code rate (if applicable), symbol rate, and frequency.

MOD

This branch menu displays the VSAT Modem information, and software version number if proper controller/modem communication is established.

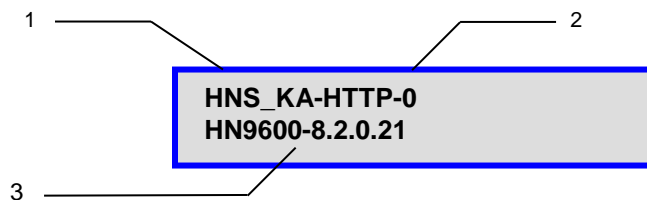


Fig. 51: “MOD” (Modem) Display

1 – VSAT Modem service type and interface it’s communicating on.

2 – Modem time delay

3 – Satellite Modem’s Model and Firmware Version

7.12.5. SYS

This menu displays platform type, hardware version, serial number and data recording file size.

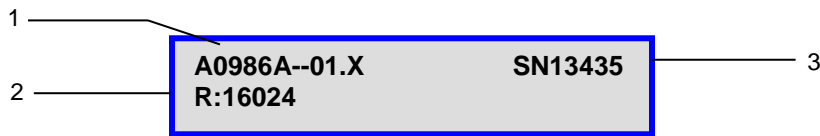


Fig. 52: "SYS" (Platform) information Display

1 – Indicates platform type and platform hardware version number.

2 – Data recording information (C-COM internal use).

3 – Platform serial number.

7.12.6. MAC

Displays the Remote Drive Module MAC Address.

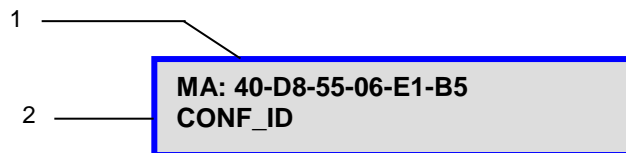


Fig. 53: "MAC" Remote Drive Module MAC Address Info

1 – Indicates the MAC Address that is programmed into the 7720 Remote Drive Module.

2 – States the 7720 Remote Drive Module configuration id (for internal use).

ERR

This branch menu displays the error code if an error occurs. The top line represents the latest error; the bottom line will represent any previous errors.



Fig. 54: "ERR" (ERROR) Display

1 – iNetVu® Error code display

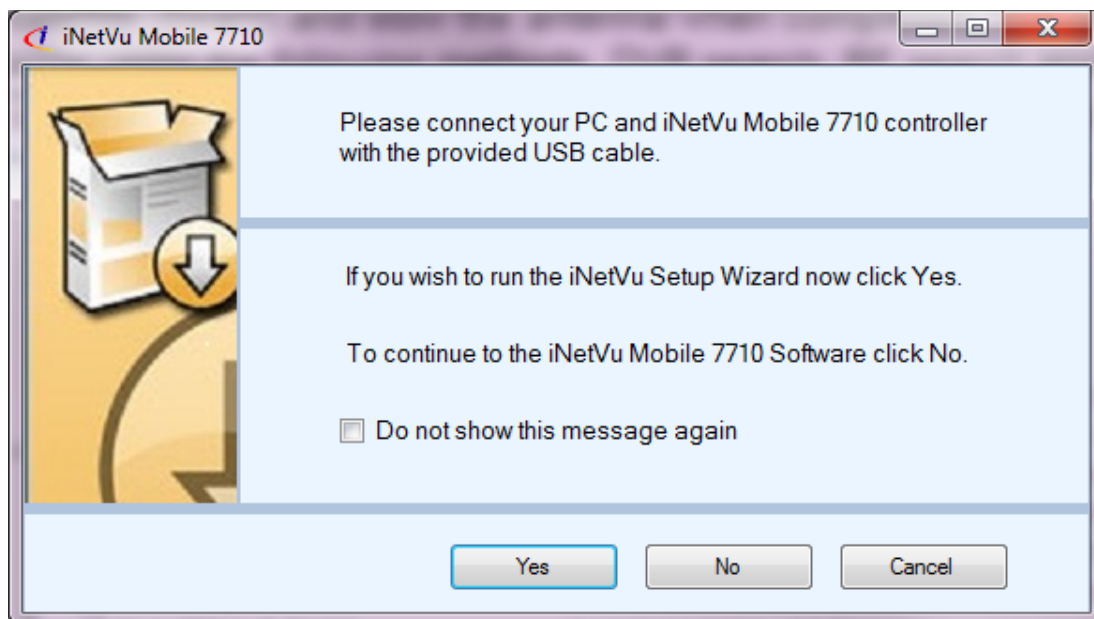
Displays the last 2 codes recorded by the 7720 controller.

8. iNetVu® 7710 Software

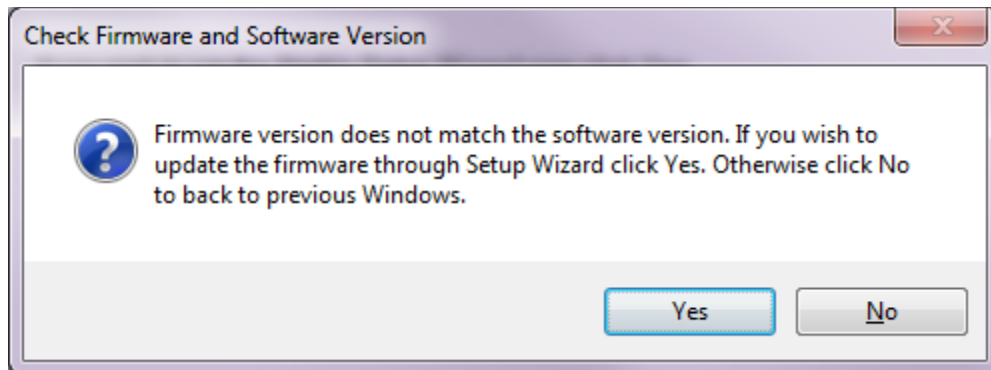
The iNetVu® Mobile Software plays an integral role in connecting the operator/user and iNetVu® Mobile System. It could communicate with the Satellite Modem, automatically find and lock onto a satellite (Beam) and stow the antenna when completed. The user has the option to search for satellite using the following methods, DVB search; RF search and Beacon receiver with the highest precision. The user can also monitor real-time system parameters such as Signal Strength, GPS/Glonass Coordinates, motor currents, as well as allowing the user the capability of manually moving the antenna and performing any maintenance tests and calibration tasks. The user has a choice of languages, currently English, Simplified Chinese & Traditional Chinese, Russian, Spanish and Swedish to select from on the fly. Application windows can be resized on your screen or run in full screen mode given the user the optimized viewing.

8.1. New Setup Wizard Feature

The Setup Wizard has been implemented to aid first time users in configuring their system after the software has been installed. A Pop-up window will show at first launch allowing the user to use the Setup Wizard (select Yes) or to bypass it (select No) and use it later. Selecting "Cancel" will exit the Setup Wizard. The dialog window will show every time the **iNetVuMobile7710** software is executed, select "Do not show this message again" to allow software to go straight to the Controls Window when the software is launched. The Wizard can be launched at any time as it will be added as a menu option. See appendix for complete instructional steps on using the Setup Wizard.



The Wizard will check Firmware and Software versions if “Yes” is selected to validate the versions are the same and prompt the user to update the Firmware if they are different. Both the 7710 Controller and the 7720 Remote Drive Module will be validated.



The wizard will automatically resume after the Firmware updates have completed, follow onscreen prompts. The wizard will not continue and go back to the previous window if “No” is selected.

8.2. Navigating Menus

To navigate the iNetVu® Mobile Software, **right-click** the iNetVu® swirl icon located in the System Tray.

There are 7 options available:

- Controls
- Maintenance
- Configuration
- About
- Setup Wizard
- Language
- Exit

8.2.1. iNetVu Controls

The Controls menu allows users to monitor system parameters and manually move the antenna, as well as conduct automatic processes and functions.



Improper use of iNetVu Controls menu can render the iNetVu® Mobile System inoperable and may be in violation of FCC regulations. The user can halt any operation at any time by clicking STOP button located in the Automatic Controls.

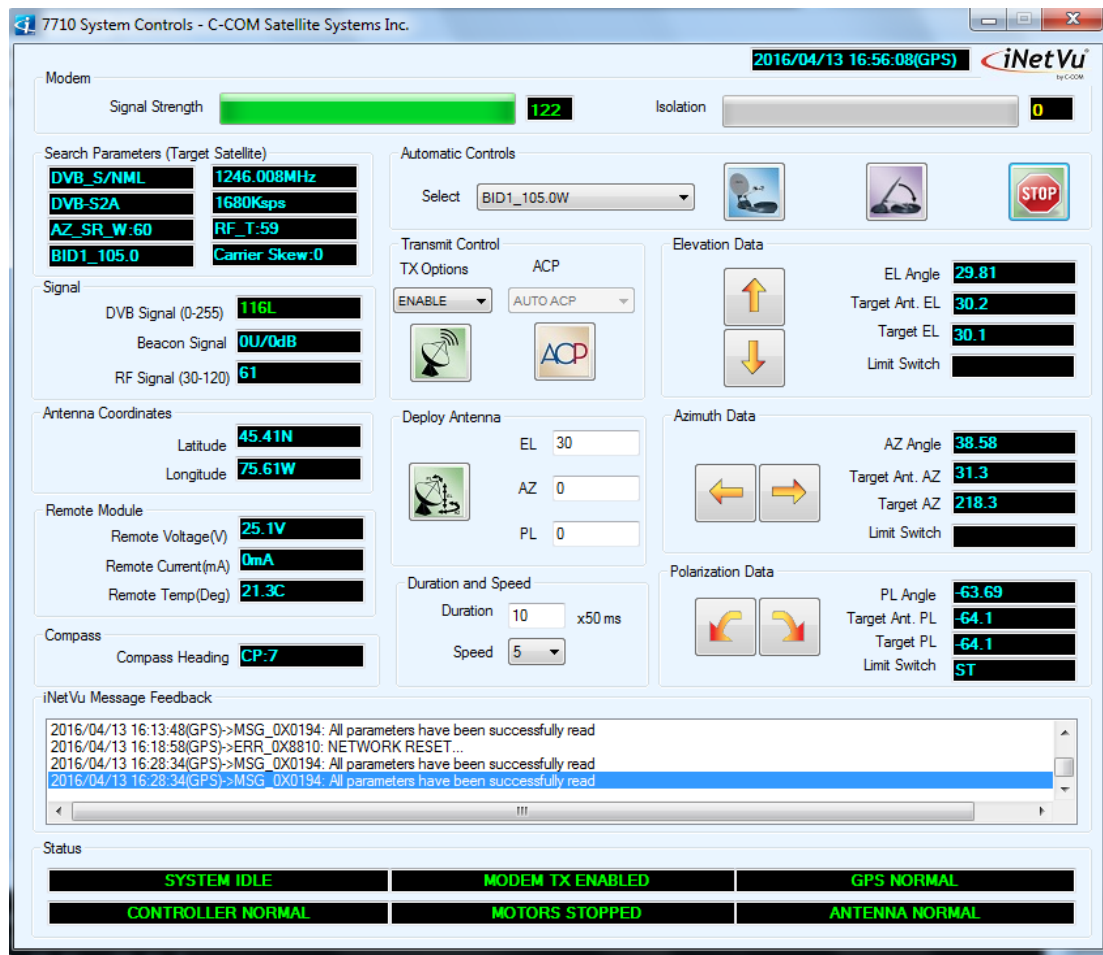


Fig. 55: Controls Menu

Signal Strength

A real-time Signal Quality Factor (SQF). A value obtained from the Satellite Modem when locked onto a signal. Using a red/yellow/green color-coated system, it denotes the strength of the received signal from the current satellite.

Should the Signal Strength be lower than 29 when locked on satellite, click **Find Satellite** again to re-acquire the signal.

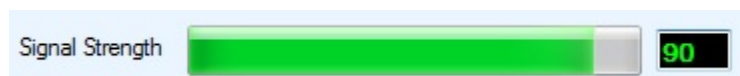


Fig. 56: Signal Strength Display

Isolation Value

Denotes isolation to the current satellite transponder. This value is not an indication of signal strength when transmitting a signal.

The Isolation Value will correspond to the transmit quality of an HNS system. Otherwise, this field is not applicable.



Fig. 57: Isolation Value Display

Date/Time

Current date and time as received from the GPS/Glonass Antenna. Should the GPS/Glonass experience any problems, the alternate source is your PC internal date and time.

2013/09/13 16:28:38(GPS)

Fig. 58: Date/Time Display

Automatic Control

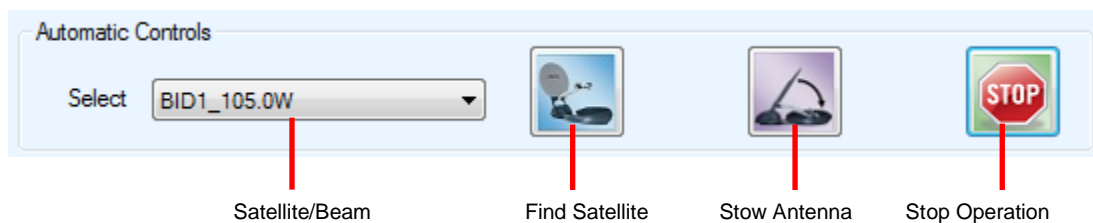
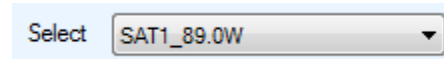


Fig. 59: Automatic Control Buttons

Select Satellite/Beam



Satellites/Beams that user can select from by simply clicking on the drop-down arrow. Satellites 1 to 64 can be preconfigured and saved to allow user to search for desired satellite. Beam color will be displayed and will not be selectable if "Auto-select Beam color" is enabled for Tooway. Currently Only 16 can be set with the remaining to be added in future versions. Sat 1 is default satellite and will be the one searched on if no other is selected from the drop-down list.



Find Satellite

Automatically finds and locks onto the satellite signal by communicating with the Satellite Modem and using the GPS coordinates, the compass heading, and internal parameters of the Satellite Modem. Typically, it takes approximately 3-5 minutes to find satellite. If the Antenna is already pointed on the satellite, clicking **Find Satellite** will re-peak the Antenna onto the signal. Search routine will ignore GPS and RF status until after compass heading has been read to reduce search time. If GPS and RF conditions not met after 60 seconds the search will fail and a message will be displayed.



Stow Antenna

Re-centers the antenna and lowers it into the stowed position.

Note: The “stow” command for the Fly-away platforms moves the Platform to a home position.



Stop Operation

Halts all motor movements and disrupts all communication between iNetVu® Mobile/Fly-Away System components.

Configured Satellite Search Parameters

The target satellite displays the Search type (DVB, RF or Inclined), DVB type, the satellite frequency, symbol rate and RF Threshold, as well as beam and carrier id. Other parameters are displayed under transponder and search parameters, and here we display just a few of the target satellite and Beacon parameters.

Search Type	DVB_S/NML	1246.008MHz	Frequency
DVB Type	DVB-S2A	1680Ksps	Symbol Rate
AZ Search Window	AZ_SR_W:60	RF_T:59	RF Threshold
Sat Longitude	BID1_105.0	Carrier Skew:0	Carrier Skew

Angle and Limit Switch Indicators

Displays real-time angles and Limit Switch status

↑

↓

EL Angle

35.96

Elevation Angle

Target Ant. EL

36

Target EL

36

Limit Switch

Elevation UP Limit Indicator

Elevation DOWN Limit Indicator

Elevation STOW Limit Indicator

←

→

AZ Angle

79.25

Azimuth Angle

Target Ant. AZ

57.4

Target AZ

198.4

Limit Switch

Azimuth STOW (LEFT and RIGHT) Limit Indicator

↶

↷

PL Angle

-77.5

Polarization Angle or DDD

Target Ant. PL

-77.1

Target PL

-77.1

Limit Switch

Polarization STOW Limit Indicator

Fig. 60: Angle and Limit Switch Indicators

Target Angles are described in the Target Satellite parameter section.

- When the Elevation STOW Limit Indicator is ON for the Fly-75V, Fly-98G/H/V, Fly-1202 G/H/V Fly-Away or Drive-Away system(s), it is indicated by the “UP/LP” in the EL Limit Switch field. Elevation Angle will be “+92 ±1.0” degree, to denote that the iNetVu® Fly-away Platform is now stowed or at the home position. The mobile units stow position will display DN_ST/LP for stow limit as well as the real angle of the EL Tilt.
- The AZ Stow will be indicated by “ST/LP” in the AZ Limit Switch field with 0 degrees angle reading for all the platforms.
- The Fly-Away platforms will display “LL/LP” for the left AZ limit, and LR/LP for the right AZ limit when the AZ movement has reached its limit on the left or right side. The drive-away will display AW/LP at 175-180 degree for the limit protection, system search will than stop and go in the opposite direction. Manually the drive-away platform can move to 200 degree after AW/LP is triggered.
- Polarization section will display “DDD” for all three fields with the movement buttons greyed out for all 2 axis Ka services, Ku platforms will display the real time angles with “LP” for the limit protection. The 3 axis Ka systems will display “RH” for Right Hand Polarization and “LH” for Left Hand Polarization.
- A YELLOW colour “DDD” will appear if a Limit Switch has been disabled (Fly-away Ka platforms).

Manual Movement

Elevation Up / Elevation Down



Azimuth Left/ Azimuth Right



Polarization Counter-Clockwise / Polarization Clockwise

Using the Duration and Speed parameters, 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.



Face Reflector this
direction for correct
Azimuth and Polarization
Orientation

Fig. 61: Orientation Reference for Azimuth and Polarization



Enable/Disable Transmitter

Automatically Enables or Disables the Transmission process. Background will turn grey when transmitter is disabled and green when the transmitter is enabled.



Enable/Disable ACP

Enables or Disables the ACP (Automatic Cross-Pol Testing), and Manual Cross-Pol Testing. Drop down will only be accessible with Hughes Ku service, its disabled for Ka service.



Fig. 62: ACP Option Selection

To Enable ACP, select “AUTO” or “MANUAL” from the ACP drop down list and click on the ‘Enable/Disable ACP’ Button to initiate.

To Stop ACP testing, select “STOP” from the ACP drop down list, and click on the Enable/Disable ACP Button to initiate.



Deploy Antenna

Automatically moves antenna to the manually entered Elevation, Azimuth and Polarization angles.

Deploy Antenna		Range
EL	<input type="text" value="30"/>	-90 to +90
AZ	<input type="text" value="0"/>	-180 to +180
PL	<input type="text" value="0"/>	-90 to +90

Fig. 63: Deploy Antenna Input Values

Duration

Length of time of Manual Movement using increments of 50ms
 i.e. duration time of movement - 1 x 50ms = 50ms

Speed

Motor Speed of Manual Movement

1 = Slowest, 9 = Highest

Duration and Speed	
Duration	<input type="text" value="1"/> x50 ms
Speed	<input type="text" value="5"/>

Fig. 64: Duration and Speed Input for Manual Movements

DVB Signal (0-255)

DVB Signal received from the DVB Tuner. A "U" next to the value indicates an "unlocked" status. An "L" next to the DVB value indicates locked signal.

Beacon Signal (0-100)

If the optional beacon receiver is used, the Beacon Signal will appear in this area along with the power density received from the satellite. This will only appear when a lock status occurs which is indicated by an "L" next to the beacon signal value.

RF Signal (30-120)

Displays the real time RF Signal throughout the acquisition process. A value of 30 that is flashing Red and or Yellow indicates the LNB is not being powered appropriately, or there is an issue with the coax cable connection.

Signal	
DVB Signal (0-255)	90L
Beacon Signal	00U/0dB
RF Signal (30-120)	65
Antenna Coordinates	
Latitude	45.41N
Longitude	75.61W
Remote Module	
Remote Voltage(V)	25.3V
Remote Current(mA)	0mA
Remote Temp(Deg)	18.7C
Compass	
Compass Heading	321

RF Threshold (30-75)

Used in RF mode search for determining proper satellite frequency. This can be configured and viewed on the Configuration screen.

☒ RF Override RF Threshold

Antenna Latitude/Longitude

GPS Coordinates acquired from the GPS Antenna or manually overridden values.

Remote Voltage (V)

Voltage (DC) reading on the 7720 Remote Controller

Remote Current(mA) of 7720 Controller

Displays Current drawn for Elevation and Azimuth Motor (in Milliamps mA)

Remote Module

Remote Voltage(V)	24.2V
Remote Current(mA)	0mA
Remote Temp(Deg)	21C

Remote Temp (Deg)

Monitors and displays Remote Controller's temperature

Target Satellite parameters

The screenshot displays three sections for satellite target parameters:

- Elevation Data:**
 - EL Angle: 35.96
 - Target Ant. EL: 36 (Target Antenna Elevation Angle)
 - Target EL: 36 (Target theoretical Elevation Angle)
 - Limit Switch: [Empty]
- Azimuth Data:**
 - AZ Angle: 79.25
 - Target Ant. AZ: 57.4 (Target Antenna Azimuth Angle (0 to ± 180))
 - Target AZ: 198.4 (Target theoretical Azimuth Angle (0 to 360))
 - Limit Switch: [Empty]
- Polarization Data:**
 - PL Angle: -77.5
 - Target Ant. PL: -77.1 (Target Antenna Polarization Angle (0 to ± 90))
 - Target PL: -77.1 (Target theoretical Polarization Angle)
 - Limit Switch: [Empty]

Fig. 65: Satellite Target Angles

Target Antenna Elevation Angle (Target Ant. EL)

The Target Ant. EL angle is a calculated value based on GPS and satellite longitude information taking into consideration antenna mechanical calibrations.

Target Elevation (Target EL)

The Target Elevation Angle is the theoretically calculated EL look angle value based on the Antenna's GPS location and Satellite Longitude.

Target Antenna Azimuth Angle (Target Ant. AZ)

This shows the antenna mechanical AZ angles in reference to the mechanical limits at 0° & $\pm 180^\circ$ degrees. It correlates the theoretical calculated azimuth target angle (0° to 360°) onto the antenna mechanical coordinates of 0° to $\pm 180^\circ$.

Target Azimuth (Target AZ)

The Target Azimuth Angle is a theoretical calculated value based on the Antenna's GPS location and Satellite Longitude to locate the desired Satellite. This range is between 0 to 360 degrees.

Target Antenna Polarization Angle (Target Ant. PL)

Calculated Polarization angle taking into consideration the mechanical travel limits, satellite polarity, OMT position; satellite offset and PL offset angle that the polarizer must be positioned. The mechanical travel limit is from 0° to $\pm 90^\circ$. Polarization is at 0° when OMT is vertical.

Target Polarization (Target PL)

The Target Polarization Angle is a calculated value based on the Antenna's GPS information and Satellite Longitude. Polarization is disabled and displays "DDD" for none motorized Polarization Axis.

Compass Heading

Orientation of the Mobile and Fly-Away Platforms.

This value is only read during the Find Satellite and Check Compass processes.



Fig. 66: Compass Orientation and Approximate Values

Message Panel

Displays real-time status updates, system messages, and error codes.

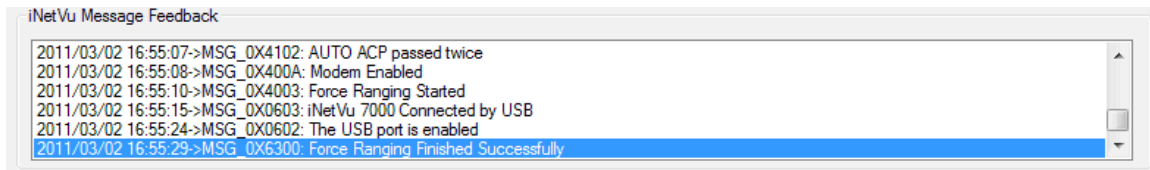


Fig. 67: Message Panel

Status Panel

The Status Panel describes system operations that are either imminent, taking place, or the current status of that component. The Status Panel is located at the bottom of the Controls menus, and has a set of six message blocks, respectively.

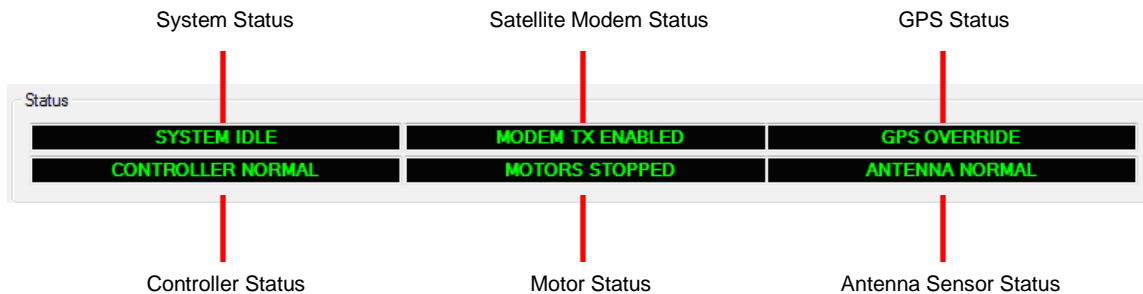


Fig. 68: Controls - Status Panel

The indicators notify the user of any actions taking place with a combination of color-coated messages.

- Solid "GREEN" messages indicate a stable and normal condition for that component.
- Flashing or solid "LIGHT BLUE" messages indicate a change in status occurring that the user should be aware of.
- Flashing "RED" and "YELLOW" messages indicates a problem with that component.

Should the entire Status Panel flash "RED" and or "YELLOW", a communication failure between the PC and the iNetVu® Controller has occurred. Ensure that the Controller is powered, and that all USB drivers and cables (USB, LAN or Serial) are installed properly.

System Status

Displays current system environment

- **System Idle**
No operations are currently being performed.
- **ACP Testing**
ACP Testing is being performed.
- **Skew Adjusting**
Polarization adjustment to adjust the polarization axis for any vehicle inclination. The Azimuth Axis will rotate 90° on both sides of the peaked azimuth angle, then return to the satellite position, and adjust the polarization axes to compensate for any recognized mount inclination.
- **Manual Operation**
Manually controlled movement via Controls menu has been detected.
- **Mount Testing**
System test or demo being performed via System Test and Demo menu.
- **Peaking on Satellite**
System makes minor adjustments in positioning to receive optimal Signal Strength.
- **CP Calibration**
Compass Calibration is being performed.
- **Going to Position**
An automatic movement command has been initiated (i.e. Find Satellite or Deploy Antenna) and the antenna is moving into the designated position.
- **Searching Satellite**
Antenna is performing a search pattern to locate the satellite.
- **Stowing Antenna**
Antenna is being stowed.
- **Inclined Mode**
System is in Inclined Search Mode.
- **Reading MDM Param**
Modem configuration are read before the search routine commences.
- **EL Peaking**
Adjusts Elevation angle positioning to acquire the best angle accuracy (to within 0.5 degree).
- **AZ Peaking**
Adjusts Azimuth angle positioning to acquire the best angle accuracy (to within 0.5 degree).
- **AZ/PL Calibration (Internal, status not displayed)**
Fine adjustments that are made on Azimuth or Polarization axis for optimal measurements where adjusts and or corrections are applied.
- **Reading Compass**
Compass heading is read when find satellite is initiated.
- **Locked**
Satellite signal has been acquired and locked on.
- **Manual ACP on EL**
Fine Pointing by adjusting the Elevation angle manually in small increments during the Cross Polarization isolation measurement.
- **Motion Monitoring**

Detects the Motion and triggers the Motion Detection alert when environmental motion is detected.

- **Manual ACP on AZ**
Fine Pointing by adjusting the Azimuth angle manually in small increments during the Cross Polarization isolation measurement.
- **Manual ACP on PL**
Fine Pointing by adjusting the Polarizer angle manually in small increments during the Cross Polarization isolation measurement.
- **Enable Modem**
This status appears during the enabling of the modem transmitter and right before the Modem TX Enabled status is displayed.
- **Uploading**
Log File downloading status, Note: System status is overridden by history system status.
- **System Initialization**
Indicates communication between 7720 Remote Drive Module and 7710 Controller is not established.

Satellite Modem Communication Status

Indicates the Transmitter status and displays any issues in communication with the Satellite Modem

- **Modem TX Enabled**
Indicates that the transmitter has been enabled.
- **Operation Mode**
Indicates that the TRIA has been enabled on SurfBeam2.
- **Modem TX Disabled**
Indicates that the transmitter has not been enabled.
- **No Modem Communication**
The controller is trying to establish communication with the modem and or No power is applied to the modem.

GPS Status

Displays condition of the GPS signal

- **GPS Normal**
GPS signal is being received from the GPS Antenna.
- **GPS Failed**
GPS signal is not being received from the GPS Antenna.
- **GPS Override**
GPS coordinates have been manually overridden from the Maintenance menu.

Controller Status

Displays communication status between the PC and the iNetVu® Controller

- **Controller Normal**
Indicates normal communication status between the Controller and the PC
- **Controller Failed**
A failure in communication between the Controller and the PC has been detected.

Motor Status

Displays the movement of the 3-axis motors: Elevation, Azimuth, and Polarization

- **EL Moving UP / DN**
Elevation Motor is moving in the respective direction
(UP = Up, DN = Down)
- **AZ Moving Left / Right**
Azimuth Motor is moving in the respective direction
- **Motors Stopped**
No movement detected on any of the 3 Axis
- **Motor Unknown**
Motor Status cannot be detected.

Antenna Status

Displays any relevant information regarding the Limit Switches, Potentiometers and/or Inclometers.

- **Antenna Normal**
Limit Switches are ON/OFF in the correct relation to the Elevation, Azimuth and Polarization Angles.
- **Sensor Error**
This status is an indication of problem with cabling or hardware and/or controller setup. Stop and troubleshoot before proceeding.
- **Antenna Unknown**
Mobile Platform cannot be found. Ensure that the iNetVu® Controller is functioning and that all cables are connected should this indicator appear.

8.2.2. Maintenance

The Maintenance menu allows users to configure the communication between the controller and platform type, as well as various system parameters for optimal performance. Separate tabs have been added to set apart the 3 axis as well as GPS and Compass for easier configuration. The Maintenance menu allows users to conduct maintenance tests/processes, override parameters, and troubleshoot.

Note: It is recommended to power cycle the controller after firmware upgrades or when configuration changes have been saved and sent to the controller. Recycling 7710 Controller power will confirm settings have been changed and saved as well to ensure correct values are propagated and displayed on all affected screens, this is important especially for Ka platforms.

Click **SEND ALL** when any modifications are made, failing to **SEND ALL** will not save the information/data to the controller and thus the configurations will be lost during controller power recycling.

The screenshot displays the '7710 System Maintenance' software interface. The 'Platform' tab is active, showing configuration fields for the platform type (A1206A), version (1.X), and serial number (15655). Below this, the 'Offset' section contains fields for EL Offset (23.5), Target AZ Offset (0), and PL Offset (0.0). The 'PC Application' section includes the ACU IP Address (192.168.10.6), COM Port (COM2), and Log Data (1H). The 'Advanced' tab is also visible, showing the 'Target Satellite' section with 'Multiple Satellite Search' enabled and three satellites set to 'BID1_107.1W'. The 'GPS' section has 'GPS Override Enabled' checked, with Latitude set to 51.52 N and Longitude to 0.12 W. The 'Operation Mode' section shows 'Unattended' and 'DIS' selected, with 'TX Protection' unchecked. The 'Compass' section includes buttons for 'Enable CP Calibration', 'Save CP Calibration Data', 'Restore CP', and 'Check Compass'. At the bottom, there are buttons for 'Test', 'SatParam File Gen', 'Load Satparameter', 'Load 7710 Firmware', 'Save All', 'Reset', 'Restore Defaults', 'Download Log File', and 'Load 7720 Firmware'. A message feedback window at the bottom shows a log of successful parameter reads and configuration updates.

Fig. 69: iNetVu® 7710 maintenance screen

8.2.2.1 Platform Parameters

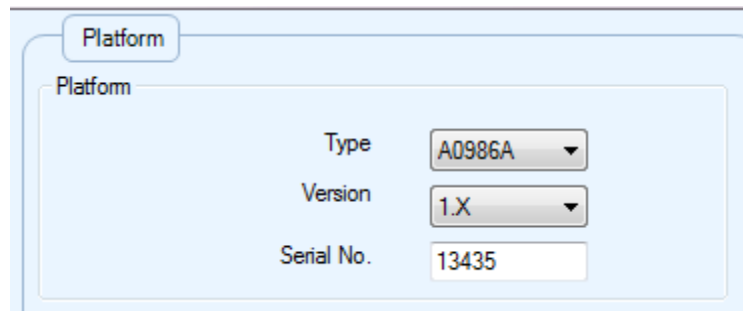


Fig. 70: Maintenance Platform Parameters

Type

The user can configure the platform type in use via the controller front panel or the software application.

The firmware/software application will have a different naming schema under platform type in the drop down than the one provided in the marketing/sales datasheets. Listed below are just a few of the supported Platforms that will appear in the application drop down. Refer to section 7.6 for the full list of the support platforms.

- A0756A** - iNetVu® Fly-75V New Fly-Away 75cm (Ka - Band Circular)
- A0986A** - iNetVu® Fly-98G/H/V, 2 Axis New Fly-Away 98cm (Ka - Band Circular)
- A0986B** - iNetVu® Fly-98G/H/V, 3 Axis New Fly-Away 98cm (Ka - Band Circular)
- A0986C** - iNetVu® Fly-981, 3 Axis New Gen Fly-Away 98cm (Ku – Band, XPOL)
- A1201A** - iNetVu® 1201J, New Gen Drive-Away, 1.2m Ku Band
- A1205A** - iNetVu® Ka-1202V, 2 Axis New Gen Drive-Away (Ka - Band Circular)
- A1206A** - iNetVu® Fly-1202 Ka, New Fly-Away 1.2m, Ka Band Viasat Tria
- A1206C** - iNetVu® Fly-1202 Ku, New Fly-Away 1.2m, Ku Band
- A1801A** - iNetVu® 1801, New Gen Drive-Away, 1.8m Ku - Band
- A1810A** - iNetVu® Fly-1801, 3 Axis New Fly-Away 1.8m Ku – Band
- A1810B** - iNetVu® Fly-1801, 3 Axis New Fly-Away 1.8m C Linear – Band
- A1810C** - iNetVu® Fly-1801, 2 Axis New Fly-Away 1.8m C Circular – Band

Version (Platform Hardware Version)

This field identifies platform hardware version, identifying hardware changes in the New Generation platform types.

Serial No. (Platform Serial Number)

The user will be required to enter the last five-digits of the platform serial number located next to the connector plate on the iNetVu® Mobile Platform.



Fig. 71: Platform Identification

8.2.2.2 Offset

Offset

EL Offset	<input type="text" value="5.5"/>
Target AZ Offset	<input type="text" value="0"/>
PL Offset	<input type="text" value="0.0"/>

EL Offset

The Elevation Offset is specific to each type of platform. It is the number of degrees at which the iNetVu® Mobile Software will offset the reading from the Inclinator to produce an accurate (+/- 2°) Elevation Angle.

The inclinometer used to read the elevation angle will compensate for an incline up to +/- 15°. For example, if a user is on a 10° slope and the system is searching along the azimuth, if the elevation reading changes due to a horizontal incline, the elevation will adjust to maintain the correct elevation angle while searching along the azimuth Offset.

Target AZ Offset

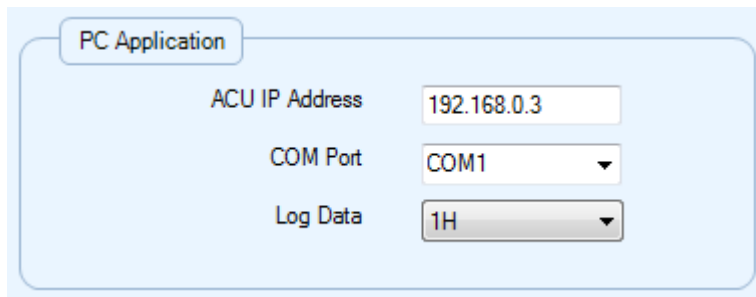
This value would be added/used to calculate system azimuth angle to compensate for any consistent inaccuracy or shifting of the calculated AZ value. The value is calculated and updated automatically by the iNetVu software once the system locks on the correct satellite and auto calibration occurs.

Polarization Offset (PL)

By default, this polarization-offset value is set to 0°. If there happens to be a requirement for a polarization offset, the user may manually enter this value in this area. This area is also updated automatically if the skew adjustment procedure recognizes an incline which will adjust the target polarization angle.

8.2.2.3 PC Application

This sub-section contains options regarding the relevant IP address connection to the iNetVu® 7700 Series Central Controller. This section allows user to enter IP address of the desired controller that they wish to connect to over the network.



PC Application

ACU IP Address	192.168.0.3
COM Port	COM1
Log Data	1H

ACU (Antenna Control Unit) IP Address

User can enter IP address of a networked controller and connect to it over the Network.

Com Port

Used in conjunction with the serial port interface (Interface parameter under COM Port Configuration section) communication between the controller and pc.

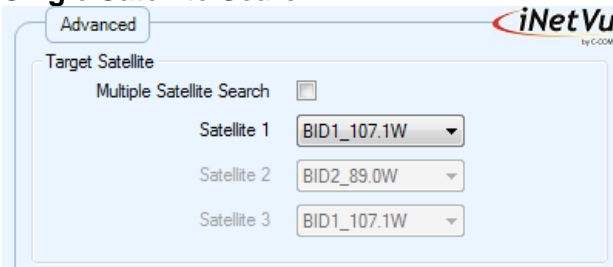
Log Data

The user may choose to upload either 1 hour, 2 hours, or ALL (maximum of 12 hours) of the recorded data log information from the controller to the PC. The log file is saved in the default installation location as “iNetVu7710Data_history”

8.2.2.4 Advanced - Target Satellite

The Target satellite drop down allows the user to select from list of saved satellites, longitudinal and orbital values the target satellite to search on, the list will currently save and display 64 target satellites. There is a new feature that has been added, Multiple Satellite Search. The Satellite search when enabled will allow the search routine to continue searching on the next target satellite in the list, currently the operator can configure and or set 3 satellites that the search routine will automatically toggle through in the order they are listed while attempting to lock on satellite signal if the first in the list fails.

Single Satellite Search



Advanced *iNetVu*
by C-COM

Target Satellite

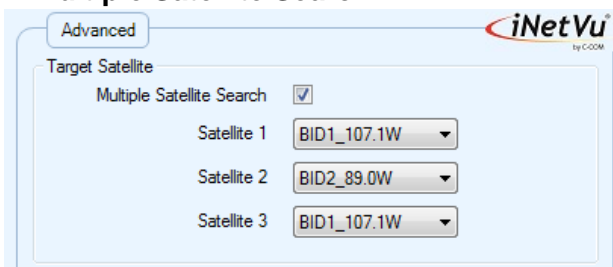
Multiple Satellite Search ☐

Satellite 1

Satellite 2

Satellite 3

Multiple Satellite Search



Advanced *iNetVu*
by C-COM

Target Satellite

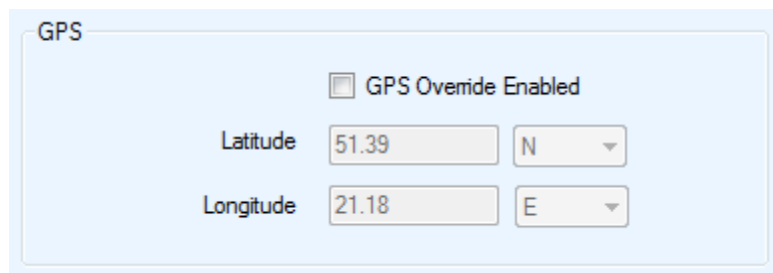
Multiple Satellite Search ☒

Satellite 1

Satellite 2

Satellite 3

8.2.2.5 GPS



GPS

☐ GPS Override Enabled

Latitude

Longitude

Fig. 72: Maintenance – GPS Parameters

GPS Override Enabled

Enables the GPS coordinates to be manually overridden. This should only be enabled if the GPS Antenna is malfunctioning and the user has a reliable, alternate source for coordinates. If this box is checked, the GPS coordinates should be manually entered in the 'GPS Lat', and the 'GPS Lon' fields described.

****Note:** If you have overridden the GPS coordinates, they will have to be updated if the Mobile Platform has moved to a new location since the overridden values will no longer be accurate.

Warning: Overriding the GPS prevents the movement protection feature from working properly, and will not stop the antenna if vehicle drives off, as neither speed nor GPS relocation can be detected. Moving vehicle speed must reach min 5km/h plus Elevation angle change of 2 degrees or more with GPS coordinates change for the movement protection feature to trigger.

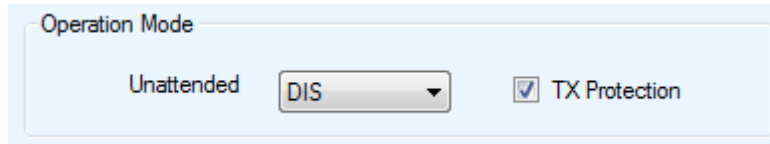
GPS Latitude

This field represents the Latitudinal GPS coordinates of the iNetVu® system.

GPS Longitude

This field represents the Longitudinal GPS coordinates of the iNetVu® system.

8.2.2.6 Operation Mode



Unattended Operation

This option is used for remote operations where system is left unattended as the name indicates, mainly for unmanned sites. This feature must not be used when the iNetVu system is being moved around or in transport mode. In this case, the system should be powered off completely. Otherwise, there is a risk the antenna will attempt to deploy while vehicle is moving. Please ensure this feature is disabled when vehicle is in transit from one location to another.

The user may disable, or set the unattended re-deploy delay time to 5, 10, or 15 minutes. If the system detects motion it will wait 1min, if antenna is still on signal the system will re-acquire satellite, otherwise the antenna will stow due to motion or movement, the system will automatically re-acquire satellite depending on the selected delay time after stowing. Initial stow will only wait 30 seconds no matter what the selected delay time is set to before re-acquiring satellite. If the re-acquire fails, the system will stow and wait for the next time period to try and re-acquire satellite signal.

For example, if the user selects 5 minutes from the drop down menu, and the system stows due to motion or movement while operational, on first stow it will only wait 30 seconds before re-acquiring satellite. On the second stow, system waits Five (5) minutes + 30 seconds before automatically re-acquiring the satellite signal. The routine uses the following formula: Waiting Time for re-acquire == 30S+ (retry times*selected delay time) default retry time at first stow is 0, second stow is 1, etc... until one (1) hour (3600 seconds) reached. If after (1) hour system does not find satellite it will continue to try on every hour thereafter. The retry time will be reset 0 after each time the system locks on satellite.

DIS: Disabled

1: Re-acquire Satellite in 5 minutes

2: Re- acquire Satellite in 10 minutes

3: Re- acquire Satellite in 15 minutes

DANGER: The system may try to deploy if this option is selected and vehicle becomes in motion. Unattended option must be disabled when vehicle is moving between locations and system is NOT powered off.

TX Protection

The TX will be disabled as soon as small or big motion is detected due to extreme motion or severe shaking. The iNetVu® Mobile Platform will automatically stow if signal is lost and 60 seconds of waiting time have expired, or re-peak should the antenna be locked on signal. If another big or small motion is detected within the 60 seconds waiting period, the system will reset the timer and a fresh 60 seconds count will start (up to a 5min continuous count). The box selected implies Motion Detection is enabled. After the antenna stows, no attempt will be made to deploy or re-acquire signal unless the unattended option is enabled. See Unattended option in this manual for functionality. The Motion Detection feature will be ignored if enabled along with the Inclined Satellite Search. The Inclined Satellite Search mode has a higher priority than

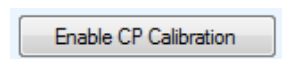
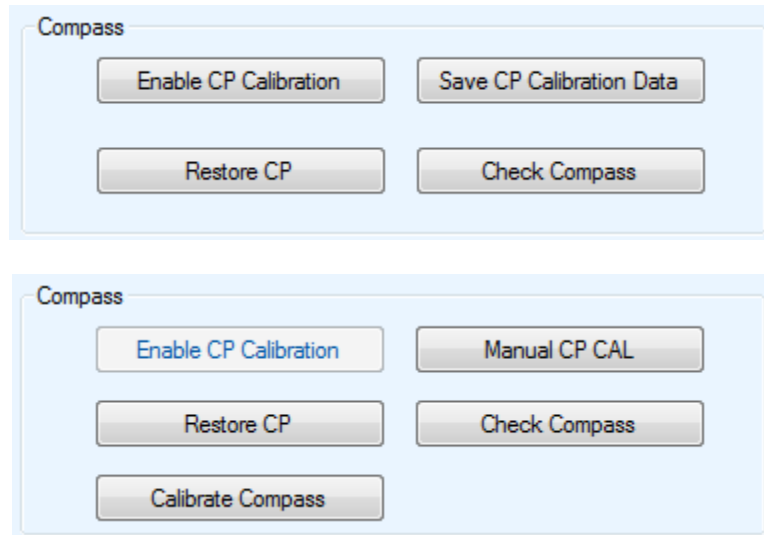
the Motion Detection and thus will render the Motion Detection ineffective when both features are enabled.

Movement Protection (not a selectable or configurable option)

The movement protection option is always enabled and is embedded into the controller. Antenna will stow automatically when vehicle begins to drive off. The movement protection feature will not function properly if the GPS is overridden because movement protection relies on change of GPS speed (min 5 km/h) and location change plus a variation of 2 degrees or more on Elevation. Overriding GPS will omit this feature and antenna stowing due to movement will not occur.

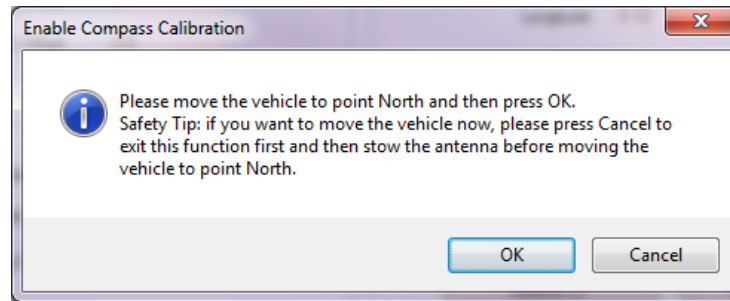
8.2.2.7 Compass (Maintenance)

These buttons provide the operator the ability to validate the compass functionality and as well the correct values at the four locations. The operator also can restore the compass to the factory calibrated defaults. The buttons will change and or be enabled/disabled depending on the type of compass that is installed.



This button puts the compass in a state (CP (1) will display in Compass Heading field) that allows data to be collected and used After getting saved. Movement is manual unless system is put in Demo Test mode which is the recommended method.

- i. The mount and or Mobile Platform Vehicle must be pointed North (Vehicle front windshield). The software will Pop-up a dialog window to confirm this orientation prior to proceeding with the calibration. Refer to Fig. 66.



- i. Ensure that there are no metallic objects that could interfere with the Compass, and that the Mobile Platform is on level surroundings.
- ii. Orient the Mobile Platform as depicted in figure 66. It is recommended that you use an external compass to be as accurate with the orientation as possible.
- iii. Recommended to put Platform in Demo Test Mode and run for a couple of minutes on all axis or move the antenna in 90 degree increments from 0 to the left (90 than 180) and to the right (-90 than -180) finish at 0 position.
- iv. Check Compass to verify that the values are acceptable, if they are, click the "Save CP Calibration Data" button to save the data and exist calibration mode.

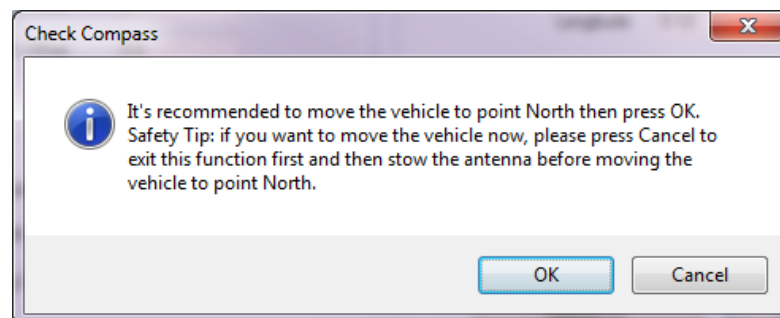
Save CP Calibration Data

Saves the data that has been collected during the calibration process and exists the calibration mode. The CP status returns to (0) or normal mode.

Check Compass

Tests the compass' heading and accuracy by rotating the antenna at 90° intervals and comparing the compass readings with the actual antenna's movement to the 4 positions (0, 90, 180, 270).

- i. The mount and or Mobile Platform Vehicle must be pointed North (Vehicle front windshield). The software will have a POPUP to confirm this orientation prior to proceeding with the Compass Check. Refer to Fig.66 for orientation.

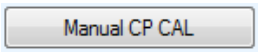


- ii. Antenna will center itself; move to the proper Elevation for reading the compass, then read the compass heading.
- iii. Antenna will rotate 90° to each of the following positions and read the compass at each: 0°, 90°, 180°, 270°
- iv. iNetVu® Mobile Software will compare the compass heading values read at

- v. each position, and determine if they differ by approximately 90°.
- v. The Compass Check will display a message regarding the accuracy of the compass.

Restore CP**Restore CP**

Restores the compass to its factory calibrated state.

Manual CP CAL**Manual CP CAL**

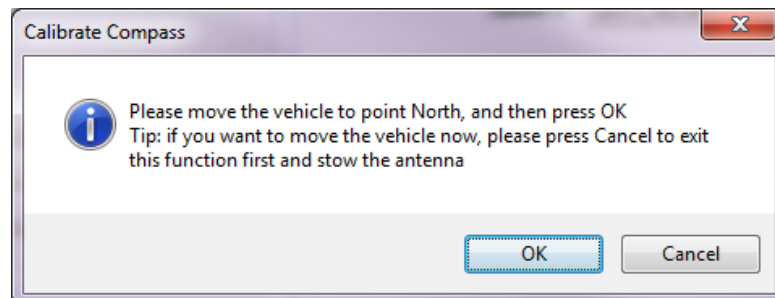
This is a 3-point Manual Compass Calibration.

- i. The mount and or Mobile Platform Vehicle must be pointed North (Vehicle front windshield). The software will have a POPUP to confirm this orientation prior to proceeding with the Compass Check.
- ii. Ensure that there are no metallic objects that could interfere with the Compass, and that the Mobile Platform is on level surroundings.
- iii. Manually deploy the antenna to the three positions (0, 90, and 180) at the end of each position click on the "Manual CP CAL" button, after the compass heading is read (Reading Compass) and angle is displayed, deploy to the next position and click the button again.
- iv. After the third position is read, if value is acceptable move the antenna to position 0 and power off controller. If not continue to the fourth point (-90) or 270 and verify value than power off controller.
- v. Power on the controller and do a Compass Check (Check Compass button) to validate the values are acceptable. This step will have to be done manually on the Fly-Away(s) systems.

Calibrate Compass**Calibrate Compass**

Automatically calibrates compass, this button will be greyed out for all Flyaway antennas.

- ii. The mount and or Mobile Platform Vehicle must be pointed North (Vehicle front windshield). The software will Pop-up a dialog window to confirm this orientation prior to proceeding with the calibration. Refer to Fig. 66



- v. Ensure that there are no metallic objects that could interfere with the Compass, and that the Mobile Platform is on level surroundings.
- vi. Orient the Mobile Platform as depicted in figure 66. It is recommended that you use an external compass to be as accurate with the orientation.

- vii. The Antenna will now rotate in 90° intervals and attempt to calibrate the compass.
- viii. A message prompt will appear to notify you that the Compass Calibration has been completed successfully or not.

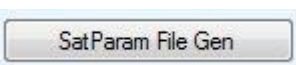
8.2.2.8 Maintenance Menu Buttons

The following buttons are available in the maintenance menu for multiple purposes including, ease of use, troubleshooting, accessing of data files and more.

A rectangular button with a light blue border and a grey background, containing the text "Test".

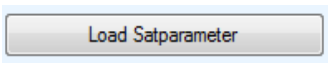
Test (DEMO)

Opens System Test and Demo menu screen.

A rectangular button with a light blue border and a grey background, containing the text "SatParam File Gen".

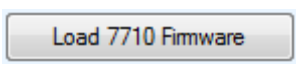
SatParam File Gen

Generates Satellite Parameter table file "iNetVu7710_SAT_PM.S19" that will be downloaded to the controller. This step is required after changes made to the satellite parameters table (iNetVu7710_PARSAT.txt) file.

A rectangular button with a light blue border and a grey background, containing the text "Load Satparameter".

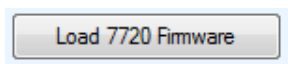
***load SatParameter**

Loads all the Satellite Transponder information located in the "iNetVu7710_SAT_PM.S19" into the 7710 Controller. The user may modify the table (iNetVu7710_PARSAT.txt with any DVB transponders settings) that he/she would like saved in the 7710 Controller. The file would then be generated and uploaded to the controller using this button. Controller must be in S file loading mode.

A rectangular button with a light blue border and a grey background, containing the text "Load 7710 Firmware".

***Load 7710 Firmware (Main Controller Firmware)**

Loads the iNetVu7710_Box_FW.S19 firmware file into iNetVu® Controller from the iNetVu program folder. The update process is displayed on screen and will notify the user when the process is complete. 7710 Controller will reset itself once the firmware updating is complete.

A rectangular button with a light blue border and a grey background, containing the text "Load 7720 Firmware".

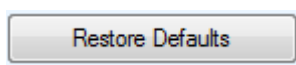
***Load 7720 Firmware (Remote Drive Module Firmware)**

Loads the iNetVu7720_RTCTL_FW.S firmware file into iNetVu® Controller.

A rectangular button with a light blue border and a grey background, containing the text "Reset".

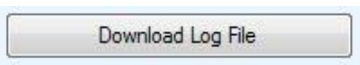
Reset

Restarts controller.

A rectangular button with a light blue border and a grey background, containing the text "Restore Defaults".

Restore

Resets all platforms to the manufacture's default values, and resets beam(s), and modem parameters settings to their defaults.

A rectangular button with a light blue border and a grey background, containing the text "Download Log File".

Download Log File

Downloads the log data from the 7710 Controller onto the user's PC. The user may select how much of the log file to upload from the Controller section of this maintenance menu. The maximum data a user may upload is 12 hours.

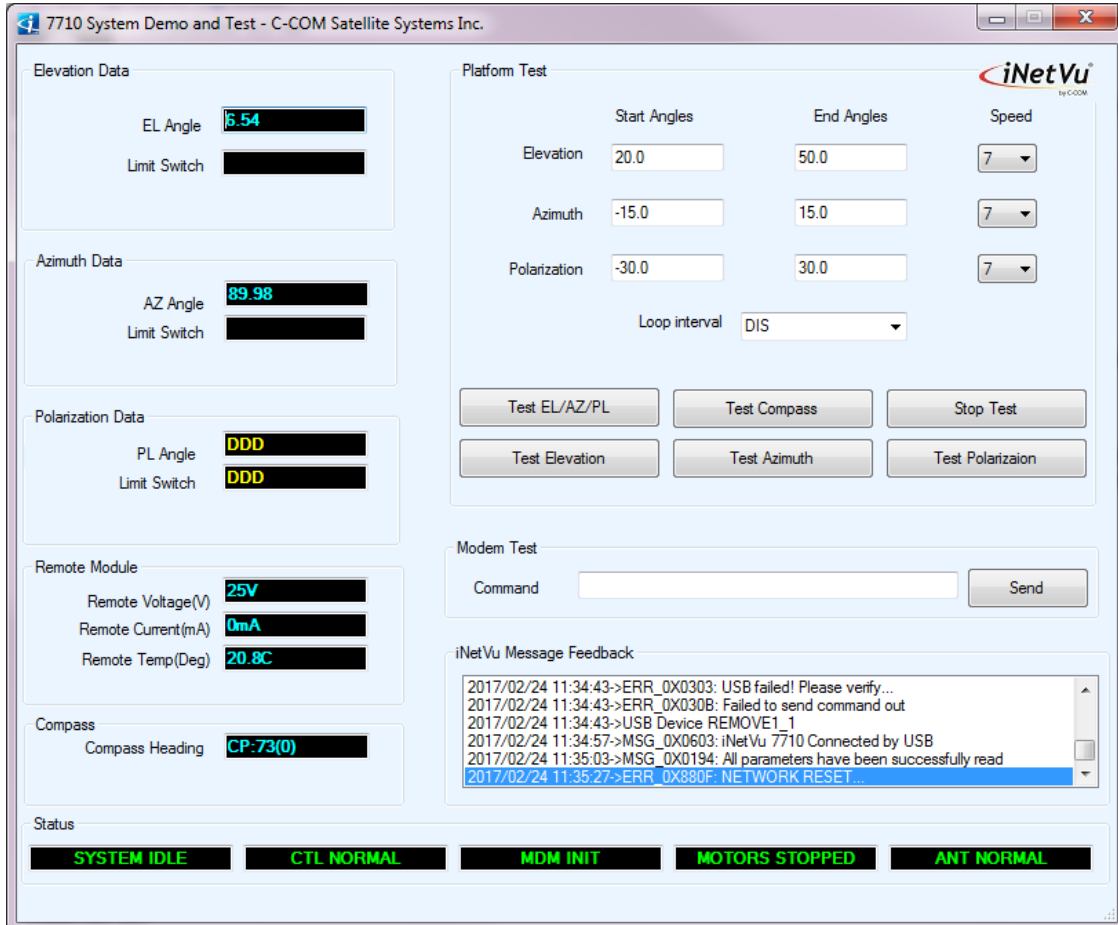

Save All

Sends and saves ALL parameters to the controller's memory.

* Enabled **ONLY** when the 7710 controller is in **Firmware loading mode**.

8.2.3. Maintenance Test (Demo Window)

Used for system tests, trouble-shooting, and for demonstrating the iNetVu® Mobile System. This feature is accessible from the Maintenance Window **Test** button.



7710 System Demo and Test - C-COM Satellite Systems Inc.

Elevation Data

EL Angle: **5.54**

Limit Switch: **[X]**

Azimuth Data

AZ Angle: **89.98**

Limit Switch: **[X]**

Polarization Data

PL Angle: **DDD**

Limit Switch: **DDD**

Remote Module

Remote Voltage(V): **25V**

Remote Current(mA): **0mA**

Remote Temp(Deg): **20.8C**

Compass

Compass Heading: **CP:73(0)**

Platform Test

Start Angles: Elevation: 20.0, Azimuth: -15.0, Polarization: -30.0

End Angles: Elevation: 50.0, Azimuth: 15.0, Polarization: 30.0

Speed: 7

Loop interval: DIS

Buttons: Test EL/AZ/PL, Test Compass, Stop Test, Test Elevation, Test Azimuth, Test Polarizaion

Modem Test

Command:

Send

iNetVu Message Feedback

2017/02/24 11:34:43->ERR_0X0303: USB failed! Please verify...
 2017/02/24 11:34:43->ERR_0X030B: Failed to send command out
 2017/02/24 11:34:43->USB Device REMOVE1_1
 2017/02/24 11:34:57->MSG_0X0603: iNetVu 7710 Connected by USB
 2017/02/24 11:35:03->MSG_0X0194: All parameters have been successfully read
 2017/02/24 11:35:27->ERR_0X880F: NETWORK RESET...

Status

SYSTEM IDLE, CTL NORMAL, MDM INIT, MOTORS STOPPED, ANT NORMAL

Start Angles

Initial values for the test/demo sequence.

End Angles

End values for the test/demo sequence.

Speed

Speed of the motor during the test/demo sequence (1 – lowest, 9 – highest).

Loop Interval

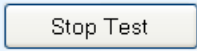
Enables an infinite loop of the test/demo sequence with time between test/demo sequences.

A rectangular button with a light blue border and the text "Test EL/AZ/PL" in black.**Test EL/AZ/PL**

Moves and rotates to the values set in the Start Angle and End/Demo Angle fields.

A rectangular button with a light blue border and the text "Test Compass" in black.**Test Compass**

Positions Antenna to the set Elevation angle and updates compass heading by moving to the set End Angle values entered by the user on all three axis. Only end angles are required when testing or validating compass.

A rectangular button with a light blue border and the text "Stop Test" in black.**Stop Test**

Halts all test/demo sequences.

A rectangular button with a light blue border and the text "Test Elevation" in black.**Test Elevation**

Moves dish to the values set in the Start Angle and End/Demo Angle fields.

A rectangular button with a light blue border and the text "Test Azimuth" in black.**Test Azimuth**

Moves dish to the values set in the Start Angle and End/Demo Angle fields

A rectangular button with a light blue border and the text "Test Polarizaion" in black.**Test Polarization**

Rotates dish to the values set in the Start Angle and End/Demo Angle fields

Modem Test (Command)

The user may enter certain modem commands, and click send. The 7710 Controller will then read the response from the modem in the text area below the command line. Currently the commands supported are for iDirect services only:

- laninfo
- tx power
- tx freq
- tx symrate
- tx cw
- rx power
- rx freq
- rx symrate
- latlon

8.2.4. Configuration

The Configuration menu allows users to configure the communication medium between the Satellite Modem, Controller (ACU) and iNetVu® Mobile Software, as well as various System parameters for optimal performance. Users have the ability to configure and save 64 Satellites (1-65) with their orbital slot. Each Beam can have different configurable parameters settings independent of one another, all these configurable options are grouped under the Beam Configuration section.

The screenshot displays the '7710 System Configuration - C-COM Satellite Systems Inc.' window. It features several configuration sections:

- Beam Configuration:** Includes fields for Beam ID (1), Read Beam button, Read Carrier From Modem checkbox, DVB Settings (Longitude: 99.9 W, Transponder No.: 0, Carrier Skew: 0.0, DVB Type: DVB-S2A, LNB Power: 18V, Frequency(KHz): 1468750, LNB_LO: 10.75, Symbol Rate(sps): 50000000, LNB 22KHz Tone checkbox, FEC Rate: AUTO, RX: H, TX: V, Read Transponder button).
- Search Parameters:** Includes Search Method (DVB Search), AZ Window Size (60), RF Override checkbox, RF Threshold (75), Enable Reference Satellite checkbox, and Enable Inclined Satellite and Repeak Period (DIS).
- Compass:** Includes Full Search checkbox, Override Compass checkbox, and Direction (0).
- BR300L Beacon Receiver (Optional):** Includes Beacon Freq (MHz) (1210.99) and ACQ Attenuation (dB) (22.0).
- Modem Configuration:** Includes Type (HNS_KU), Interface (HTTP), Modem Delay (0), IP Address (192.168.0.1), Longitude (99.9 W), Freq(KHz) (1468750), Sym(sps) (50000000), RX (H), TX (V), LNB 22KHz checkbox, and DVB Type (DVB-S2A).
- Feature:** Includes Automatic TX Disable checkbox and Disable ACP checkbox.
- Controller Configuration:** Includes TCP/IP Settings (IP Address: 192.168.0.3, Subnet Mask: 255.255.255.0, Default Gateway: 192.168.0.1, Enable DHCP checkbox, Enable Beep checkbox), Max ES/NO (55), COM Port Interface (Interface: DEBUG, Baud Rate(bps): 19200), and GPS Compass (Ant Separation: 1, Heading Bias: 0).

At the bottom, a status bar shows the timestamp '2017/05/01 10:59:54->MSG_0X0194: All parameters have been successfully read' and buttons for 'Restore Defaults' and 'Save All'.

Fig. 73: iNetVu® 7710 Configuration screen

8.2.4.1 Beam Configuration

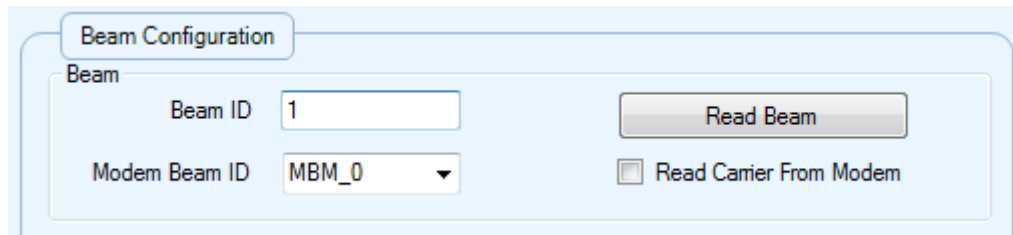


Fig. 74: Configuration – Beam Parameters

Beam ID.

64 different satellite Beam ID are configurable on same or different satellites allowing users to configure and save for easy access.

Modem Beam ID (iDirect & HNS_KU Only)

Beam ID (number) is read directly from the modem that is configured with Dual Beam coverage or Multiple Beam coverage on iDirect Ku service or HNS Ku service.

Read Beam

Retrieves beam related information of the selected beam in the Beam ID field, like longitude, offset, LNB power and associated DVB transponder information, you will get different information when Beam ID is changed and Read beam button is clicked.

Read Carrier From Modem (iDirect & HNS_KU Only)

Enabled by default, the Satellite search parameters (Longitude, Frequency, Sym Rate, DVB Mode, Search Mode and RX Polarity) will be automatically read from the modem once communication is established. Disabling this option will allow the operator to manually configure the search parameters. If polarity is missing from the iDirect option file an error message will be triggered notifying the user to uncheck this option and to manually configure the DVB and longitude settings.

8.2.4.2 Satellite and DVB Transponder Settings

Longitude

Orbital slot / Longitude of the desired Satellite. The **Find Satellite** command will use this value when attempting to find and lock onto a satellite signal.

Carrier Skew

The Carrier Skew is any known Skew on the target satellite. The Carrier Skew is used to adjust the difference between the carrier polarity and physical polarity on the mount. The allowed Skew range is from -90° to $+90^\circ$. Most satellites have this value set to zero (0) unless the configured satellite has a known Skew angle which the user may enter or in some cases have built-in Skew for example Eutelsat. Ka systems are circular band and thus do not utilize this feature.

LNB Power (V)

In cases where the LNB requires more power than the modem can provide, or if the user would like to power the LNB from the controller, or if the user would like to find satellite without the use of a modem, this option allows for power from the controller to be supplied to the LNB through the RX IN cable from the controller to the platform itself.

DIS – will disable this option, and provide power to the LNB straight from the modem. In this case, a splitter must be used for the RF connection as depicted in the figure below.

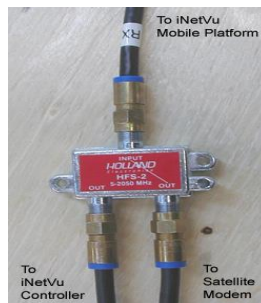


Fig. 75: RF Cable Setup for DIS selection

7710 Controller Power Output Range Option Capabilities: 13, 14, 18, 19 V @ 500mA (max)

If the user chooses to power the LNB from the controller, he/she should verify the power/voltage range requirements of the LNB in use, and configure the iNetVu® 7710 Controller according to those power/voltage requirements.

LNB_LO

This drop-down menu allows the user to change the LNB frequency settings to relock back onto satellite signal. The Normal operation setting is 10.75 and the controller default setting will reflect this; users should use the default setting at all times with carriers from table list or a carrier can be manually entered. If required to change LNB LO, then DVB frequency will also change as per the following equation: $\text{DVB tuner} = \text{IF frequency} + (10.75 - \text{LO})$, where LO = the selected LO from the menu, IF Frequency is the selected/entered Frequency from menu (or Satparam database table).

9.75
10.00
10.60
10.75
11.30

LNB 22 KHz Tone

The 22 KHz tone can be disabled or enabled for supporting modems that allow for acquisition with LNBs that switch frequency ranges by adjusting the 22 KHz tone. This option is disabled by default.

TR No. (Transponder Number)

There are Six (6) Transponder values in the 7710 Controller for each satellite.

Transponder (0-2) maybe used as horizontal receive
Transponder (3-5) maybe used as vertical receive.

The user may override the default values saved in the controller with his/her transponder information (frequency, symbol rate, FEC rate).

DVB Type

This drop-down menu allows for the configuration of the DVB carrier to search for. There are currently two options DVB-S1 and DVB-S2 ACM.

Frequency (KHz), Symbol Rate (sps) FEC Rate

The frequencies listed are in Ku-band.

The user may select from the six (6) available transponders saved in the 7710 Controller, which are specific to each satellite, or he/she may also enter valid transponder data manually.

DVB will base satellite acquisition on three satellite transponder parameters, them being:

Symbol Rate (sps)

Symbol Rate of receive signal.

FEC (Code) Rate

FEC Rate of receive signal.

RX

Transponder Receive polarity, this field will auto populate as a direct result of Transponder No. selected when the Read Transponder button is triggered, (H) for Horizontal and (V) for Vertical.

TX

Transponder Transmit Polarization.

Read Transponder

Retrieves Transponder information like DVB type, DVB frequency for the selected transponder of the Longitude from the satellite parameter table. You will get different information when Transponder Number (No.) is changed and you click Read Transponder button.

8.2.4.3 Modem Parameters

Configurable parameters will differ depending on the type of modem service selected under the type field. Most modems are now read automatically, Satellite search field parameters will have the frequency, Sym Rate, RX&TX and DVB settings read and populated automatically from the modem. Refer to iNetVu Modem Quick Starts for detailed configuration and setup pertaining to your modem type and service.

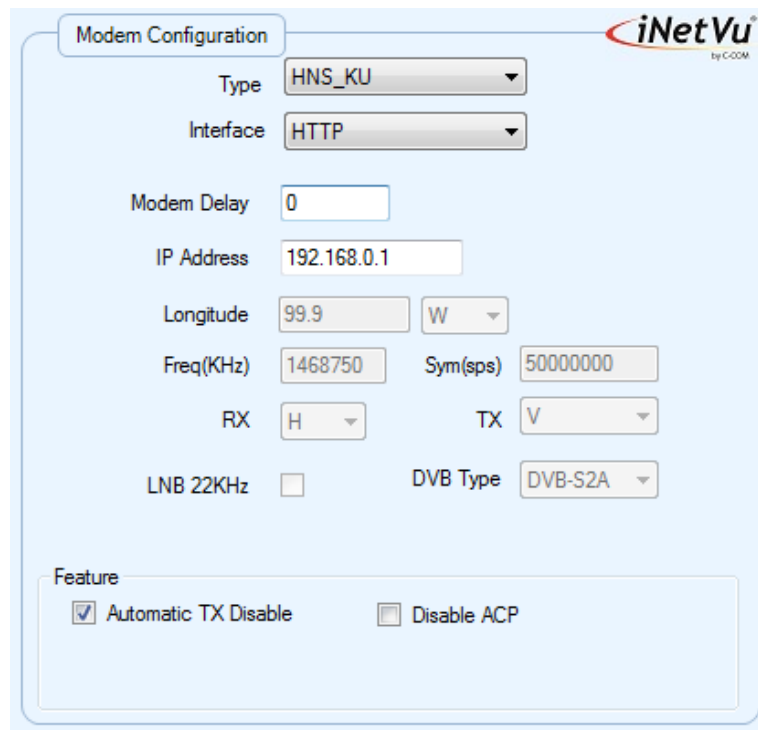
The image shows a web-based configuration interface for iNetVu. The title is "Modem Configuration" with the iNetVu logo. It contains several fields: "Type" (HNS_KU), "Interface" (HTTP), "Modem Delay" (0), "IP Address" (192.168.0.1), "Longitude" (99.9) with a direction dropdown (W), "Freq(KHz)" (1468750), "Sym(sps)" (50000000), "RX" (H) and "TX" (V) dropdowns, "LNB 22KHz" checkbox, and "DVB Type" (DVB-S2A). A "Feature" section at the bottom has checkboxes for "Automatic TX Disable" (checked) and "Disable ACP" (unchecked).

Fig. 76: Configuration – Modem Parameters

Type

The user must select the service in use from this drop-down menu for proper modem to controller connectivity.

Interface

The user may select the interface used for modem to controller communication establishment. There are currently 6 options:

- HTTP – Hyper Text Transfer Protocol.
- TCP – UDP/Telnet Interface – Internet Protocols.
- COM – Console Port Interface.
- AMIP -
- NA – Used for standalone systems where only DVB or Beacon is used to lock onto a satellite without the use of a modem.

Modem Delay

The user may increase the delay time when polling for modem signal by adjusting this number. Increasing this number, will increase the time to find and lock on to satellite as it slows down controller activity and allows slower modems to catch up.

IP Address

This area is reserved for the modem IP address.

Automatic TX Disable (Available with All Modem Services)

This option feature will appear under all existing modem services, if this option is selected (by default its checked), the controller will automatically disable the transmitter (TX) after the communication between the modem and controller is re-established due to controller or modem communication failure during transmission because of one or both devices rebooting, power outage or any other cause of communication drop. TX will be disabled only after communication is re-established. To Leave the TX enabled after communication is re-established uncheck this option.

VA SB2 Modem (Auto-Acquire) Options:

This service has the standard configurable options that would exist for any modem configuration. Supports both standard TRIA as well as the new ETRIA.

Tooway Modem Options:

Auto-select Beam Color

This option is only available with the Tooway modem service. Select the Auto-select Beam Color to have the system automatically lock on the Beam Color by referring to the built-in lookup tables and GPS location.

Update look-up Table

The Tooway Look-up Table must be uploaded to the Controller via the Application software this allows the beam table to be saved and used within the controller; this must be performed before it can be used directly from the Controller LCD. This process is only required once if no changes are made to the Beam Colors which than will require another Table Upload.

To enable this feature from the 7710 front panel, do the following:

- a. Put 7710 Controller into S File Downloading mode (same mode as updating Firmware).
- b. Click on Update Look-up Table button.
- c. Monitor status on bottom left hand.

BR300L Beacon Receiver (Optional)

Beacon Freq (MHz) 1214.99 ACQ Attenuation (dB) 22.0

Compass

☐ Full Search

☐ Override Compass Direction 0

Search Parameters

Search Method RF Search AZ Window Size 60

☒ RF Override RF Threshold 75

Controller Configuration

TCP/IP Settings

IP Address 192.168.100.2

Subnet Mask 255.255.255.0

Default Gateway 192.168.100.32

☐ Enable DHCP ☐ Enable Beep

COM Port Interface

Interface DEBUG

Baud Rate(bps) 19200

2014/12/17 17:38:10(GPS)->MSG_0X0621: Downloading controller Config File(iNetVu7710): 4%

HNS Ku Modem Options:

The Hughes modems will have the frequency, symbol rate, polarization, etc... to be read automatically from the modem. These settings must match the controller side configuration for the modem to successfully lock and stay connected on satellite after TX is enabled. System peaks on modem signal even if search method is DVB.

Modem Configuration

Type HNS_KU

Interface HTTP

Modem Delay 0

IP Address 192.168.0.1

Longitude 99.9 W

Freq(KHz) 1468750 Sym(sps) 50000000

RX H TX V

LNB 22KHz ☐ DVB Type DVB-S2A

Feature

☒ Automatic TX Disable ☐ Disable ACP

Freq (KHz) and Symb (s)

These two fields represent the required Frequency and Symbol Rate of the VSAT modem. This is usually applied to **Hughes Net services only**. Other services do not require the modem frequency to find satellite.

RX

Receive Polarization set in the satellite modem, Hughes Net service only.

TX

Transmit Polarization set in the satellite modem, Hughes Net service only.

Longitude

Orbital slot / Longitude of the desired Satellite.

Hemisphere

Hemisphere the modem is operating in, for instance, North American operating modems would be set to "W", representing western hemisphere.

LNB 22 KHz Tone

The option on the modem side must match the status option on the DVB Transponder side. The 22 KHz tone can be disabled or enabled for supporting modems that allow for acquisition with LNBs that switch frequency ranges by adjusting the 22 KHz tone. This option is disabled by default.

DVB-S1/DVB-S2A

Required on Hughes Ku (HX Modem) the DVB-S type of the modem to be set to allow the modem to stay online after the TX enable command has been sent from the controller. If the DVB-S type on the modem is not set to the same as the controller (default used is DVB-S) the communication will be lost after modem goes online.

Disable ACP

This checkbox allows the user to enable or disable the ACP process for the HNS supported modems. If this box is selected, the modem will not perform ACP and will try to enable the transmitter automatically after peaking. If this box is NOT selected, the controller will attempt to perform an ACP after peaking on satellite and before enabling the transmitter.

iDirect Modem Options:

iDirect's Auto Beam Selection provides the mobile user coverage with a single modem without having to reconfigure the modem when moving between different regions that possess different satellite beams to have continuous coverage.

Password

The default password is "P@55w0rd!" which is based on most iDirect modem requirements. Password must be entered to have modem controller communication. Check with integrator/service provider if password does not work.

Enable iDirect Broadcast

The Controller can be configured to broadcast with iDirect service by putting a checkmark in the box. This allows iDirect users with broadcast configured modems, to lock onto a DVB carrier, and enable the transmitter in the iDirect modem automatically after peaking through the 7700 Series Controller.

Dual Beam Search

When enabled and the modem is in Dual Beam mode, the Beam information will be used from the Dual Beam table in the modem, the beam(s) is decided by the modem, Beam ID 1 and Beam ID 2 will be filled with valid DVB settings. The FIND SATELLITE search will start searching on the beam you selected, if the search fails on the first beam it will switch to the next configured beam, this routine will go on until satellite is found or user clicks stop. Valid Beams refer to Beam 1 and Beam 2 and must exist in the modem Dual Beam table. Beam 1 and Beam 2 cannot be the same, if they are the Dual Beam Search option selection becomes invalid. Dual Beam Search option is valid only when “Read Carrier From Modem” is enabled.

Auto Start

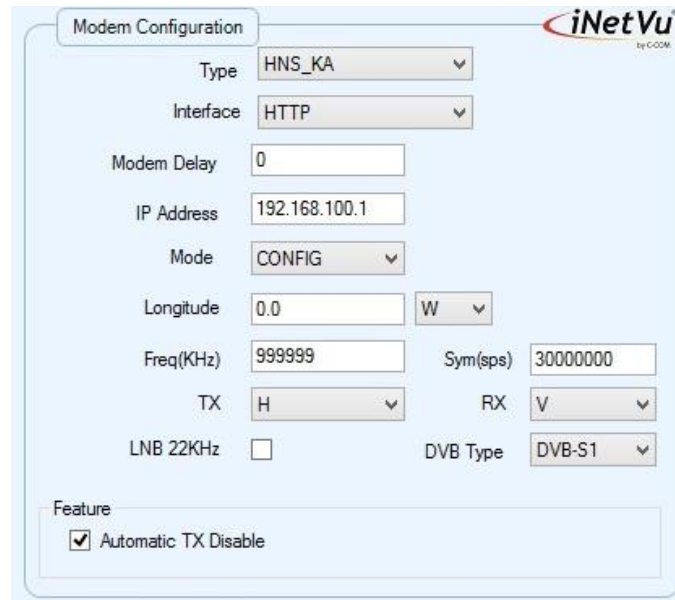
The satellite search will start automatically in dual beam mode when communication between the modem and controller is established/re-established without having to press the FIND SAT button. This will hold true on initial power up or after a power recycle on either controller or modem. Both the “Dual Beam Search” and the “Read Carrier from Modem” must be valid and enabled for the “Auto Start” feature to work. Auto Start and Dual Beam Search will be valid only if modem has dual beams (2 Beams). If Modem has more than 2 beams “Auto Start” will not become active even if the option is enabled.



WARNING!!! The system will start automatically searching on satellite once the power and or communication is established between the controller and modem without having to press the FIND SAT button if Auto Start feature is enabled. Make sure to allow the required clearance for system deployment as well **DO NOT** power up the system in a confined space as you may cause damage to the Antenna. **DO NOT** enable this feature unless you fully understand its functionality. Contact C-COM for further information.

HNS KA Modem options

Hughes Ka service modem will automatically propagate and fill in all the fields except the IP and longitude when **BEAM_T** mode is selected. Parameters are generally the same as the HNS_KU service type.



The image shows a screenshot of the 'iNetVu' Modem Configuration window. The window has a title bar with the 'iNetVu' logo and 'by CCOM'. The main area is titled 'Modem Configuration'. It contains several fields and dropdown menus: 'Type' is set to 'HNS_KA', 'Interface' is set to 'HTTP', 'Modem Delay' is '0', 'IP Address' is '192.168.100.1', 'Mode' is set to 'CONFIG', 'Longitude' is '0.0' with a 'W' dropdown, 'Freq(KHz)' is '999999', 'Sym(sps)' is '30000000', 'TX' is 'H', 'RX' is 'V', 'LNB 22KHz' is an unchecked checkbox, and 'DVB Type' is 'DVB-S1'. At the bottom, there is a 'Feature' section with a checked checkbox for 'Automatic TX Disable'.

Mode

BEAM_T – Modem Beam parameters information are retrieved from Beam table and used for satellite search.

CONFIG – Modem parameters information is manually entered into the fields and used for satellite search.

Longitude

Orbital slot / Longitude of the desired Satellite. This value must match Longitude value on controller side.

RX

Receive Polarization set in the satellite modem, Hughes Net service only.

TX

Transmit Polarization set in the satellite modem, Hughes Net service only.

LNB 22 KHz Tone

The 22 KHz tone can be disabled or enabled for supporting modems.

DVB Type

Required on Hughes Ku (HX Modem) the DVB-S type of the modem to be set to allow the modem to stay online after the TX enable command has been sent from the controller. If the DVB-S type on the modem is not set to the same as the controller (default used is DVB-S1) the communication will be lost after modem goes online.

HNS JT Modem

Hughes modem that uses the Jupiter Ka transceiver, with this type of service the search parameters are read directly from the modem. The Satellite and DVB settings are not propagated to the Satellite and DVB Transponder section but can be viewed on the Controls interface.

IPStar – Modem

Requires a CD-Key to be generated using modem manufacturer ID, Controller Model Number and Last 5 digits from the Controller Serial Number.

Gilat

All Satellite and DVB settings are read from the modem using AMIP (OpenAMIP) interface, the search settings are not displayed in the Satellite and DVB Transponder section.

Newtec

All Satellite and DVB settings are read from the modem using AMIP (OpenAMIP) interface, the search settings are not displayed in the Satellite and DVB Transponder section.

Datum

All Satellite and DVB parameters must be manually configured with the correct carrier information to successfully lock on satellite signal.

STM (Satlink)

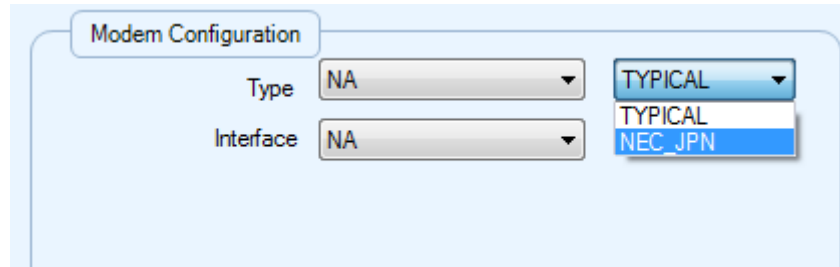
All Satellite and DVB parameters must be manually configured with the correct carrier information to successfully lock on satellite signal.

NovelSat

All Satellite and DVB parameters must be manually configured with the correct carrier information to successfully lock on satellite signal.

NA – NO Modem

Used for standalone systems where only DVB or Beacon is used to lock onto a satellite. Choose service sub id for multiple beacon satellite search under NA service. Set Typical for normal operation or select one of the custom Configurations that have been created.

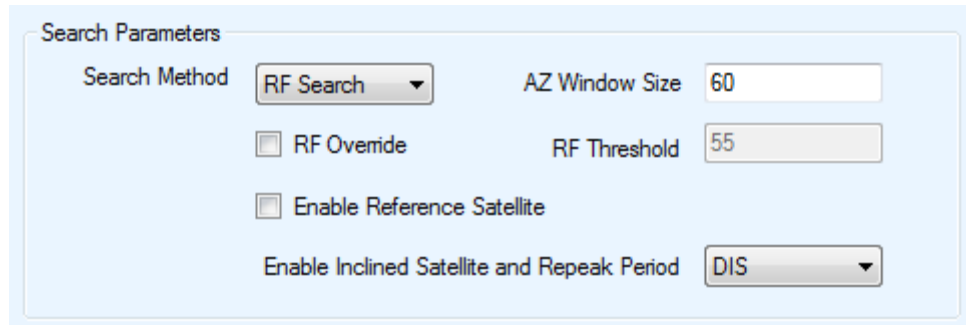


The image shows a 'Modem Configuration' dialog box with a light blue background. It contains two rows of configuration options. The first row is labeled 'Type' and has a dropdown menu with 'NA' selected. To its right is another dropdown menu with 'TYPICAL' selected. The second row is labeled 'Interface' and has a dropdown menu with 'NA' selected. To its right is another dropdown menu with 'TYPICAL' and 'NEC_JPN' listed, with 'NEC_JPN' highlighted in blue.

Label	Value	Options
Type	NA	TYPICAL
Interface	NA	TYPICAL, NEC_JPN

8.2.4.4 Search Parameters

The iNetVu controller supports DVB-S and DVBS2ACM carriers. The recommended method of satellite search is DVB using DVB-S/S2, followed by DVB reference satellite search with RF search being the last option of choice. If using RF search, a **valid RF frequency** must be entered and is highly recommended; this can be the service frequency or any other valid RF frequency from a known carrier (preferably taken from Modem parameters). If no valid frequency is known, than 10MHZ increments may be added to the lower range value until satellite acquisition. The tuner range frequency must be in the range of 950 MHz – 2150MHz.



The screenshot shows a 'Search Parameters' control panel with the following settings:

- Search Method:** A dropdown menu currently set to 'RF Search'.
- AZ Window Size:** A text input field containing the value '60'.
- RF Override:** An unchecked checkbox.
- RF Threshold:** A text input field containing the value '55'.
- Enable Reference Satellite:** An unchecked checkbox.
- Enable Inclined Satellite and Repeak Period:** A dropdown menu currently set to 'DIS'.

Search Method

DVB or RF search are selectable from the drop down window. DVB will search directly on DVB-S1 or DVB-S2 carrier and lock on it. DVB is the option of choice to use when searching for satellite. RF option will allow the user to base satellite searching and peaking strictly on RF instead of DVB. This method of searching could be used when the user is having a hard time finding the transponder data for a specific satellite, or if no transponder data exists. The controller will then peak on the modem signal when the satellite is found. RF search should be used as a last resort after DVB and or DVB with reference satellite.

AZ Window Size

The Search Window is the area of the sky which the iNetVu® Mobile System will search for the desired Satellite. It uses a rectangular window and searches for the Satellite using smaller concentric windows until the desired Satellite is found. The default Azimuth (Horizontal) range is 60° on each side of the Target Point. Increasing the size of the Search Window will increase the ability to find the desired Satellite, although increasing the Search Window will also increase the search time.

RF Override/Threshold

Used by the iNetVu® Mobile Software to begin a signal optimization process for peaking on a Satellite signal after initially locating it. This field should only be used if the RF threshold is to be overridden. Ka Band systems with single TRIA cable will have the RF threshold set to 75 by default (service dependent), this allows the RF Signal to be in operation range (RF Signal==70 on iNetVu Controls window) thus allowing the search process to begin. The RF Threshold can also be manually set to any value ranging from 40 to 60 which will display the true value of RF Signal on the iNetVu Controls window. Setting the RF Threshold to 30 will put the search into a

step-through-search moving the AZ axis in small incremental steps, this method increases the search time.

Enable Reference Satellite

If this checkbox is selected, the Reference Satellite Option becomes active.

The reference satellite option is useful when the user cannot find a DVB transponder on the desired target satellite. The user may select a reference satellite with a known DVB Transponder from the configured list of Beams that are already saved or a new Beam can be configured. The iNetVu® System will search and lock onto the reference satellite, then pivot from that point to the desired target satellite, and peak on the modem signal. Does not work if search method selected is RF Search.

Enable Inclined Satellite & Re-peak Period

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. This feature has been modified to support Ka platforms' that shift off signal due to shifting ground and or environment conditions. The inclined mode routine will exit its operation once the Stop button is depressed leaving the configuration selection enabled. The Inclined Satellite option will not work properly if Motion Detection is enabled at the same time and for this reason the Motion Detection will be ignored if it is enabled, since the Inclined Satellite option holds a higher priority.

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

8.2.4.5 Compass

Full Search

Performs a full 360° Azimuth search for the desired Satellite. This process may take up to 30 minutes to find and lock onto Satellite. Selecting **Full Search** will auto select **Override Compass** and set the AZ Window to 180 or any other value (60 and above) depending on the selected Platform type. This value can be overridden to a more desirable range. **Override Compass** can be selected without selecting **Full Search** but this does not hold true for the vice-versa.

Override Compass Checkbox

The Compass is pre-calibrated by a professional installer at the time of system installation and or come pre-calibrated from the compass manufacturer.

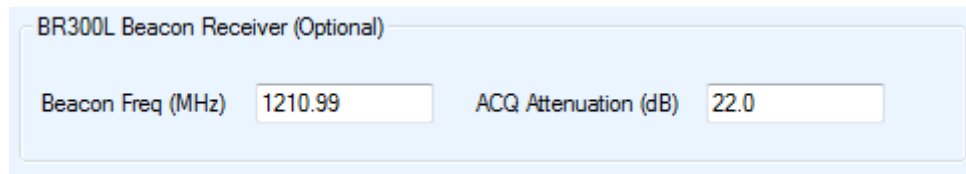
A number of factors can contribute to the iNetVu® compass to produce an incorrect reading such as being parked in close proximity to a large metallic object. Should the compass heading be inaccurate by more than 20 degrees, you may need to re-calibrate or Restore it (Mount Dependent), or select “Override Compass” option. Ensure that you are using a reliable alternate source to acquire the correct direction, otherwise overriding compass will suffice for incorrect compass reading.

Direction

The direction the front of the Mobile Platform is rotated in reference to True North. In order to override the compass, the user must know where true north is located to enter the direction. After enabling Override Compass, you may enter the vehicle’s direction as indicated on your alternate compass. Keep in mind that the base of the iNetVu® Mobile Platform is oriented to the front of your vehicle (back of reflector and front of vehicle face the same direction) refer to orientation figures in this document. When taking the direction using the alternate compass, take the direction of your reading while facing the front of the vehicle, and use this orientation for the **Vehicle Direction** field.

8.4.4.6 BR300L Beacon receiver

These fields become active after selecting “Beacon” in the COM port Interface section.



BR300L Beacon Receiver (Optional)

Beacon Freq (MHz)	1210.99	ACQ Attenuation (dB)	22.0
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Fig. 77: Configuration - Beacon Receiver parameters

Beacon Freq (MHz)

This field represents the frequency that the Optional Beacon Receiver is programmed for. The user may change this frequency to whatever Beacon is required for the target satellite. 64 configurable Beacon frequency maybe configured with 64 Beam ID, thus providing the user 64 target satellites to choose from. If the iNetVu® Beacon Receiver is not used, this field can be ignored.

ACQ Attenuation (dB)

The 7710 controller software interfaces give the user flexibility to set the power level of the signal when searching using the beacon receiver. This field is only related to the optional iNetVu Beacon Receiver.

8.2.4.7 Controller Parameters

This sub-section contains data concerning the relevant IP addresses of the iNetVu® 7710 Controller.

The screenshot displays the 'Controller Configuration' window. It is divided into three main sections: 'TCP/IP Settings', 'COM Port Interface', and 'GPS Compass'. In the 'TCP/IP Settings' section, the 'IP Address' is set to 192.168.0.3, 'Subnet Mask' is 255.255.255.0, and 'Default Gateway' is 192.168.0.1. There are checkboxes for 'Enable DHCP' and 'Enable Beep', both of which are currently unchecked. The 'Max ES/NO' is set to 55. The 'COM Port Interface' section shows the 'Interface' set to 'DEBUG' and the 'Baud Rate(bps)' set to 19200. The 'GPS Compass' section shows 'Ant Separation' set to 1 and 'Heading Bias' set to 0.

Fig. 78: Configuration – Controller Parameters

IP Address

The IP address assigned to the iNetVu® 7710 Controller.

Subnet Mask

The Subnet Mask IP Address used by the iNetVu® 7710 Controller for PC and modem connectivity.

Default Gateway

The Gateway IP address used by the iNetVu® 7710 Controller.

DHCP

The iNetVu® 7710 Controller could obtain a dynamic IP address from a DHCP Server (i.e. router, modem, etc.) if this option is enabled.

Enable Beep

This option is used to either enable or disable the beeping noise when navigating the LCD interface on the iNetVu® 7710 Controller. Selected option implies beeping sound is enabled unless option is disabled.

Max ES/NO

This option will allow the user to set a maximum Es/No threshold to transition the peaking from standard to quick by setting the threshold value between 55 to 205 (55, 85, 115, 145, 175, 205) based on known maximum signal. Quick peaking will kick in once this value is reached, only change this value if the highest Maximum ES/NO value is known otherwise leave at default value of 55.

COM Port Interface

This drop down Menu allows the user to define the functionality of the serial interface on the iNetVu® 7710 Controller. The following are the Interface options to select from:

- **DEBUG** - Used for internal debugging purposes.
- **MODEM** - Used as a communication medium if the specified modem supports serial interface communication. To communicate with a Modem via Console, "MODEM" must be selected from the COM drop down menu, and the proper baud rate of the modem must be entered as well from the BAUD drop down menu.
- **NMEA_O** - Used for GPS output data gathering.
- **BEACON** - Used to establish communication with the iNetVu BR300L Beacon Receiver.
- **DRC3500** - Used for communication with 5W Skyware Global Transceiver. RHCP and LHCP switch is done electronically through com interface.

BAUD (bps)

The user may define the bit rate of the serial communication interface.

GPS Compass Section

This section allows the user to set the measured distance between the two (2) GPS antennas as they are physically installed and set the compass Heading Bias which is the orientation heading of the GPS Compass as it is installed.

Ant Separation

This option is for setting the physical distance between the 2 GPS antennas. Operator may increase the physical distance between the 2 antennas measured from the two centers and set the separation in the software to (1, 1.2, 1.4, 1.6 and 2m).

Heading Bias

The Heading Bias is the orientation heading of the GPS Compass as it is installed. The default orientation of the GPS Compass is parallel to the platform; thus, the Heading Bias is set to 0. If the GPS Compass (which include the GPS Antennas) are installed perpendicular to the platform (back antenna on passenger side while the front antenna is on driver side), then the Heading Bias is set to 90.

****Refer to GPS Compass Manual for setup instructions**.**

Restore Defaults

Restore Defaults

Resets all platforms to the manufacture's default values, and resets beam(s), and modem parameters settings to their defaults.

Save All

Save All

Sends and saves ALL parameters to the controller's memory.

8.3. About

Displays information to the user about various sub-system components, as well as contact information for support and feedback.

7710 System About - C-COM Satellite Systems Inc.

Software Version: 7.7.6 Beta5 Build ID: 8/12/2016 11:19:36 AM		7710 Controller <i>iNetVu</i> by C-COM Firmware: 7.7.6.5 Serial Number: 17005 Revision: 1 Interface: USB Bootloader: 7.7.3.0 DVB tuner: S2(EA)_0X3C MAC: 40-D8-55-06-E1-B5	
Modem Service: HNS_JT Type: HT1300 Firmware: 9.9.9.99 Serial Number: NA Interface: TCP		7720 Controller Firmware: 7.7.5.9 Serial Number: 25667 Revision: 2 Bootloader: 7.7.1.0	
Platform Type: A0986A Serial Number: 13435 Version: 1.X			
Satellite Longitude: 107.1W RX Polarity: H			
Compass Type: iNetVu NAV Firmware: NA Bootloader: NA		Operation Mode: NA Revision: NA Serial Number: NA	
Transceiver Type: DRC35F19D		Firmware: 2.10	

Tel: 1-877-463-8886
<http://www.c-comsat.com>
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Fig. 79: About Menu

Software

- **Version**
iNetVu® Mobile Software version.
- **Build ID**
Date of software release.

7710 Controller

- **Firmware**
iNetVu® Controller's firmware version.
For compatibility purposes, Controllers are pre-configured with the appropriate firmware for the accompanied software version.
- **Serial Number**
iNetVu® Controller Serial Number.
- **Revision**
Indicates the revision number of the current Controller Hardware version.
- **Interface**
This field represents the means of communication between the iNetVu® software, and the 7710 Controller.
- **Boot Loader**
Bootloader version loaded in the 7710 Controller.
- **DVB Tuner**
Displays if a DVB Tuner is detected.
- **MAC Address**
Displays 7710 controllers MAC Address.

Modem

- **Service**
Type of service that modem is configured for.
- **Type**
Type of modem currently communicating with the controller.
- **Firmware**
Satellite Modem's firmware version.
- **Serial Number**
Satellite Modem's Hardware ID or Serial Number.

- **Interface**
Modem Interface to the iNetVu® 7710 Controller.

Platform

Platform	
Type	A1205A
Serial Number	13435
Version	10.X

- **Type**
Mobile Platform type.
- **Serial Number(S/N)**
Mobile Platform serial number.
- **Version**
Mobile Platform hardware version.

Satellite

- **Longitude**
Orbital slot of Satellite that is currently configured and used by the Beam.
- **Polarity**
Satellite polarity, polarization is based on receive (RX) polarity.

7720 Controller (Remote)

7720 Controller	
Firmware	7.7.0.0
Serial Number	14973
Revision	0
Bootloader	7.3.2.0

- **Firmware**
iNetVu® 7720 Remote Controller's firmware version.
For compatibility purposes, Controllers are pre-configured with the appropriate firmware

for the accompanied software version. 7710 and 7720 must always update their respective firmware together and not update one without updating the other.

- **Serial No**
iNetVu® Controller Serial Number.
- **Revision**
Indicates the revision number of the current Controller Hardware version.
- **Boot Loader**
Bootloader version loaded in the 7720 Controller.

Compass

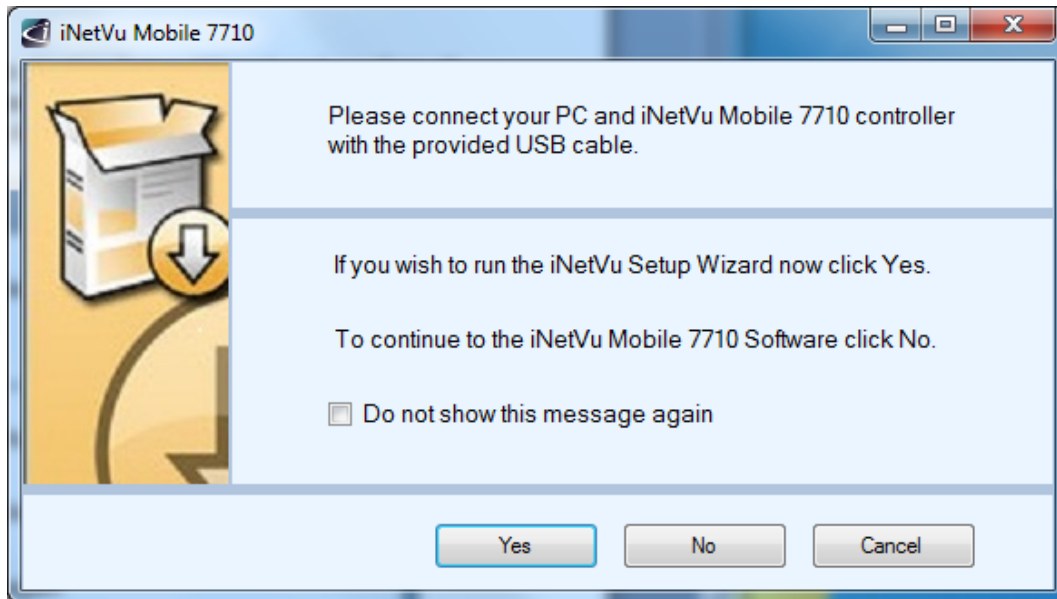
- **Type**
This will show which compass is installed on the platform, the new iNetVu NAV or the CMPS10.
- **Firmware**
Compass firmware version.
- **Bootloader**
Compass bootloader that is loaded.
- **Operation**
This is mainly for the iNetVu NAV compass, 4 different operation modes are available. The operation mode is set during the production stages. Default mode will be 9DOF for now. Provides information to the operator and to C-COM support.
- **Revision**
Compass hardware revision.
- **Serial Number**
Compass serial number.

Transceiver

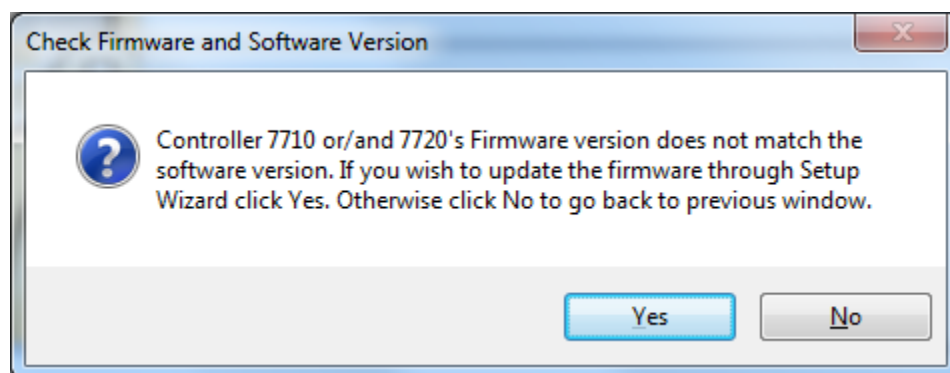
- **Type**
Displays type of transceiver indicating communication is successful between Transceiver and controller via special M&C cable.
- **Firmware**
Transceiver firmware version.

8.4. Setup Wizard

The Setup Wizard has been implemented to aid first time users in configuring their system after the software has been installed. A Pop-up window will show at first launch allowing the user to use the Setup Wizard (select Yes) or to bypass it (select No) and use it at a later time. Selecting “Cancel” will exit the Setup Wizard. This window will show every time the **iNetVuMobile7710** software is executed, select “Do not show this message again” to allow software to go straight to the Controls Window when the software is launched. The Wizard can be launched at any time as it will be added as a menu option. See appendix for complete instructional steps on using the Setup Wizard.



The Wizard will check Firmware and Software versions if “Yes” is selected to validate the versions are the same and prompt the user to update the Firmware if they are different.



The wizard will automatically resume after the Firmware update has completed, follow onscreen prompts. The wizard will not continue and go back to the previous window if “No” is selected.

8.5. Language

The multilingual feature allows the toggling between Six (6) languages and updates in real-time the selected language. Currently the available languages are English, Chinese (Simplified and Traditional), Spanish, Russian and Swedish with others to come.

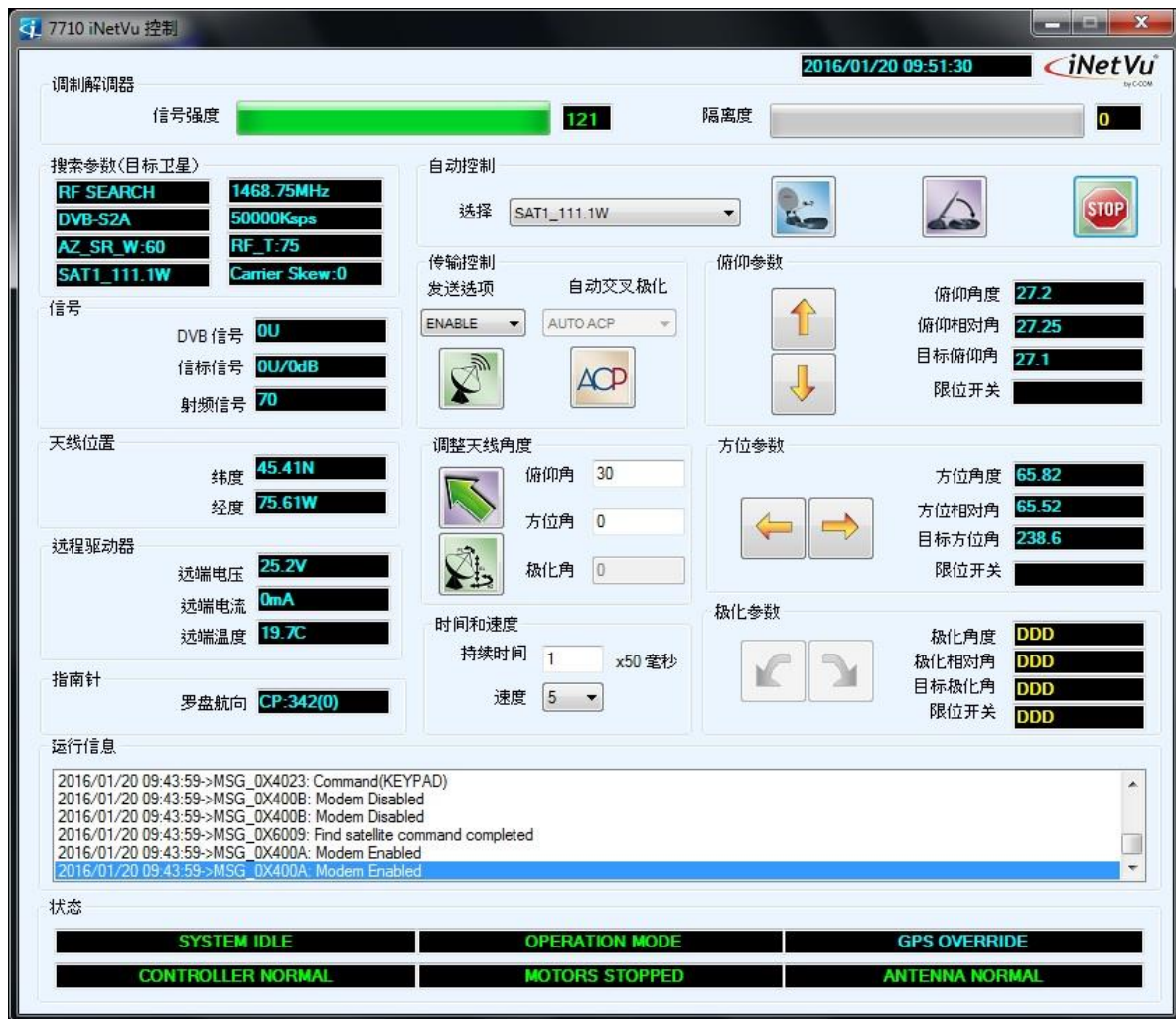


Fig. 80: Controls Screen in Chinese

8.6. Exit

Close the running IMS 7710 Application.

9. iNetVu® 7710 Series Controller Web Interface

Another method of communicating remotely with the 7710 Controller is through the web interface. It has the ability to communicate with the Satellite Modem, automatically find and lock onto a satellite and stow the antenna when completed. The user can also monitor real-time system parameters such as Signal Strength, GPS Coordinates, motor currents, as well as allowing the user the capability of manually moving the antenna and performing any maintenance tests.

The **Web Interface** is similar to the 7710 Application Software, the difference being that it is accessed through a web browser by entering the controllers IP (i.e. 192.168.0.2 default) address in the URL address bar once a network connection has been established between the controller and the PC. Note some function(s) may not be available in Web interface i.e. Download Log File.

9.1. Web Navigating Menus

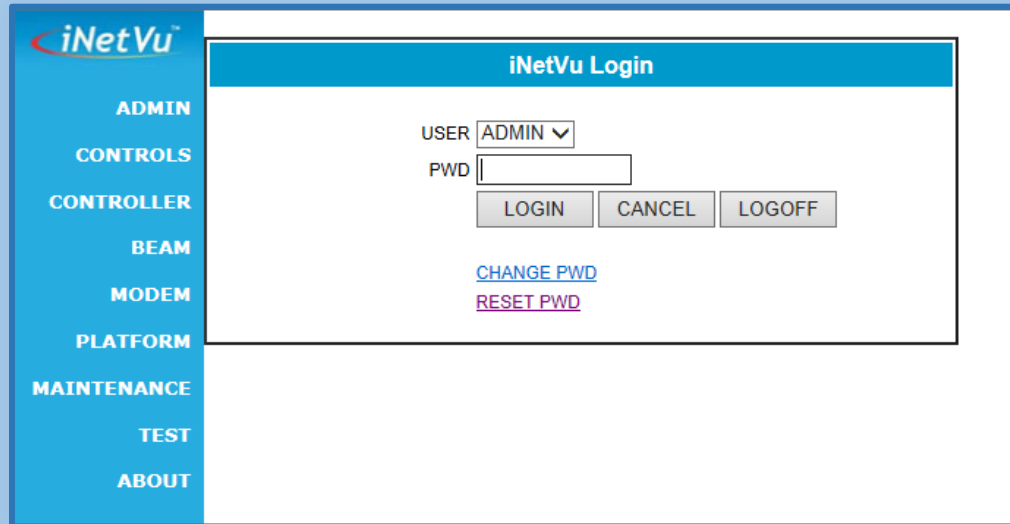
To view the web interface, type in the IP address of the 7710 Controller in the web browser.

There are 9 options available:

- ADMIN – Login page and password reset
- CONTROLS – Provides same functionality as in the Application
- CONTROLLER – This is equivalent to the Configuration in the Application
- BEAM – Provides Beam and search parameters
- MODEM – Provides same functionality as in the Application
- PLATFORM – Provides Platform configuration and current settings
- MAINTENANCE – Currently only has Restore Compass (factory default) function
- TEST – Provides same functionality as in the Application
- ABOUT – Provides same functionality as in the Application

9.1.1. ADMIN

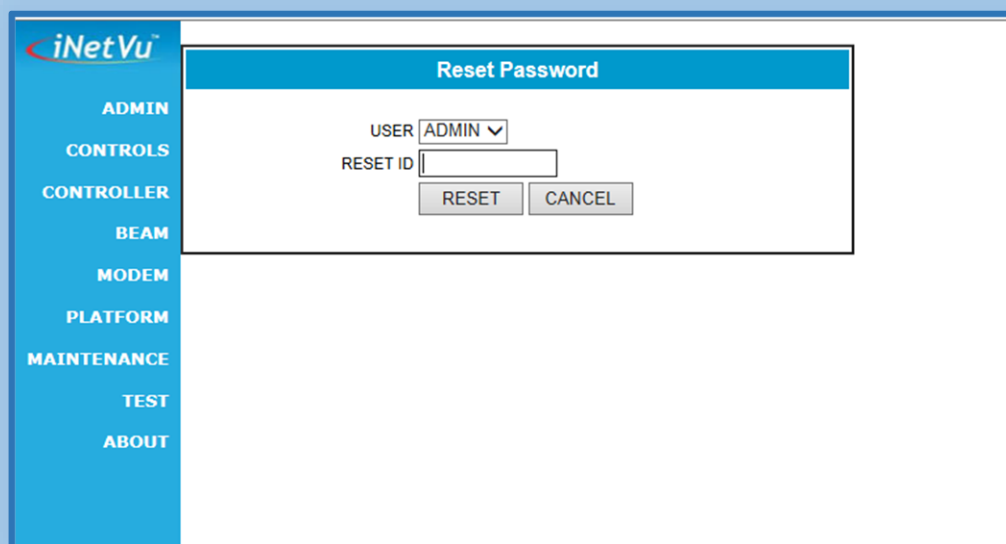
This is the login page (default password: “password”).



The screenshot shows the iNetVu web interface. On the left is a blue sidebar with the iNetVu logo and a list of menu items: ADMIN, CONTROLS, CONTROLLER, BEAM, MODEM, PLATFORM, MAINTENANCE, TEST, and ABOUT. The main content area has a white background with a blue header bar that says "iNetVu Login". Below the header, there is a form with a "USER" dropdown menu set to "ADMIN", a "PWD" text input field, and three buttons: "LOGIN", "CANCEL", and "LOGOFF". Below the buttons are two links: "CHANGE PWD" in blue and "RESET PWD" in purple.

Fig. 81: Web Interface – Login Page

To reset the password, click on “**RESET PWD**”, and enter “123456789” for the reset ID.

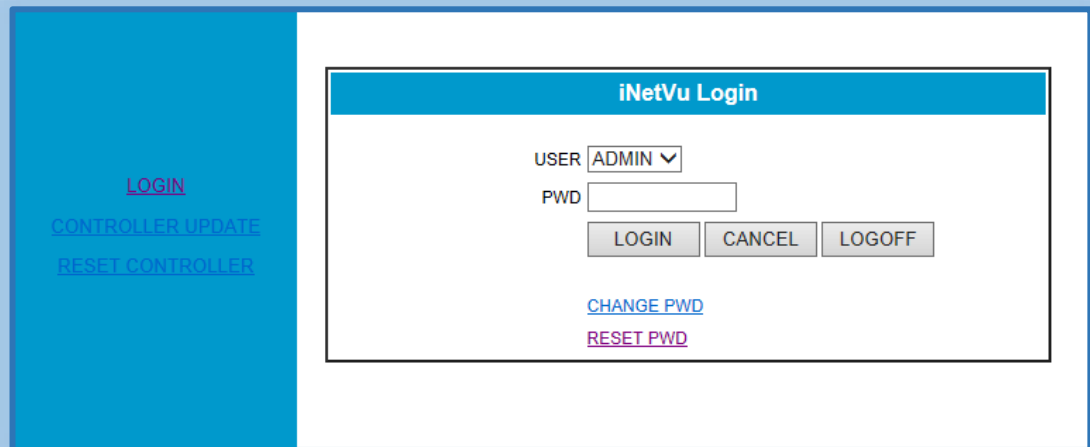


The screenshot shows the iNetVu web interface for the "Reset Password" page. The left sidebar is the same as in Fig. 81. The main content area has a white background with a blue header bar that says "Reset Password". Below the header, there is a form with a "USER" dropdown menu set to "ADMIN", a "RESET ID" text input field, and two buttons: "RESET" and "CANCEL".

Fig. 82: Web Interface – Login Password Reset Page

These options are available once the controller is in upload mode (Firmware, Sat Table etc...).

- LOGIN
- CONTROLLER UPDATE
- RESET CONTROLLER



The screenshot shows the iNetVu Login interface. On the left, a blue sidebar contains three links: [LOGIN](#) (red), [CONTROLLER UPDATE](#) (blue), and [RESET CONTROLLER](#) (blue). The main content area on the right is titled "iNetVu Login" and contains a login form. The form includes a "USER" dropdown menu with "ADMIN" selected, a "PWD" text input field, and three buttons: "LOGIN", "CANCEL", and "LOGOFF". Below the buttons are two additional links: [CHANGE PWD](#) (blue) and [RESET PWD](#) (purple).

Fig. 83: Web Interface – S File Uploading Login Screen

Once the controller is in upload mode (reset controller and depress the up and down keys on 7710 front panel). User must login to controller first for the menu options on the left to be functional.

9.1.2. CONTROLS

Similar to the iNetVu® 7710 Software Controls Menu, the Web Interface Controls window allows the user to monitor system operations, and perform automatic as well as manual system functions.

iNetVu Advanced Controls

SIGNAL ISOLATION

DVB_SNR(0-255) **2U** SAT1_115.1W

RF(30-120) **70** SAT1_115.1W DVB-S2A 1468.0MHz 50000Ksps RF SEARCH

Beacon(0-100) **0U/0dB** AZ_W:60 CP:0 BR:1210.99MHz RF_T:0

LATITUDE **48.74N**

LONGITUDE **10.81E**

VELOCITY(km/h) **0**

TARGET_EL **-30.2**

TARGET_AZ **118.5**

TARGET_PL **0.0**

REMOTE_DC(V) **25.1**

REMOTE_I(mA) **0**

REMOTE_T(C) **21.3**

EL_UP EL_DN

AZ_LT AZ_RT

PL_CCW PL_CW

TX EN

1 x(50ms)

EL 25 AZ 0 PL 0 DEPLOY

REAL	TARGET	LIMITs
327.67	0.00	
0.00	0.00	
DDD	DDD	DDD

SPEED 5

ERR_0x8801: MDM RST!!
ERR_0x8801: MDM RST!!
ERR_0x8810: MDM RST!!

IDLE MODEM INIT GPS_OV
CTR NORMAL MOTOR_ST SENSOR ERR

Fig. 84: Web Interface - Controls Screen

9.1.3. CONTROLLER

The Controller configuration allows users to configure the communication medium between the Controller and iNetVu® 7710 Web Interface, as well as various System parameters for optimal performance.

iNetVu		iNetVu Controller Configuration		
ADMIN CONTROLS CONTROLLER BEAM MODEM PLATFORM MAINTENANCE TEST ABOUT	Target Satellite			
	MSAT <input checked="" type="checkbox"/>	SAT1	BM1_115.1W	
		SAT2	BM1_115.1W	
		SAT3	BM1_115.1W	
	GPS			
	OVERRIDEN <input checked="" type="checkbox"/>			
	LATITUDE		51.39	N
	LONGITUDE		21.18	E
	Controller			
	IP	192.168.100.2		COM
SUB	255.255.255.0		BAUD	2400
GW	192.168.0.1		BEEP	<input checked="" type="checkbox"/>
			DHCP	<input type="checkbox"/>
Operation Mode				
MOTION_P		<input checked="" type="checkbox"/>	UNATTEND	DIS
Command				
UPDATE				

Fig. 85: Web Interface – Controller Configuration Screen

9.1.4. BEAM

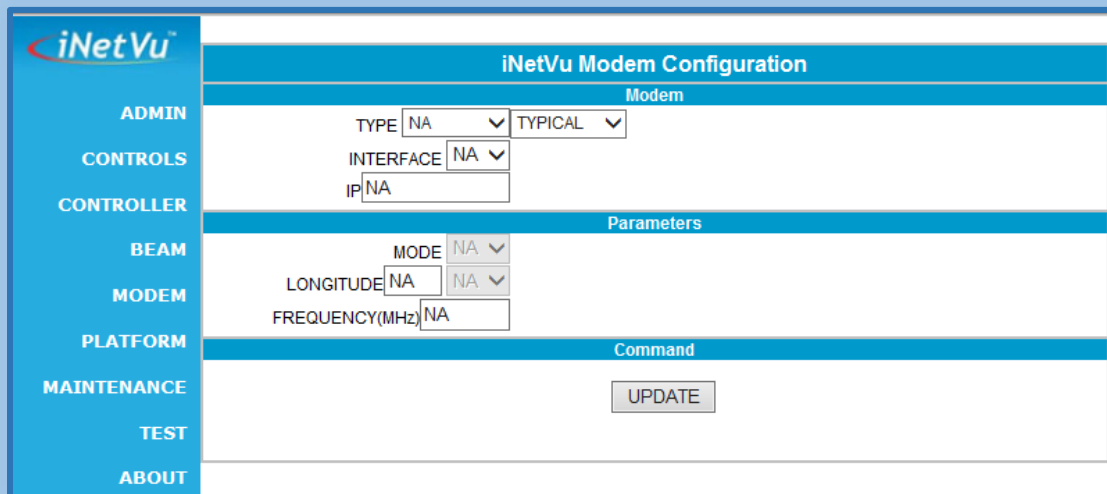
The Configuration menu allows users to set the Beam ID, Satellite parameters, orbital slot, and override parameters.

iNetVu Beam Configuration	
Beam ID	
ID(1~64)	1 READ BEAM
Carrier Parameters	
LONGITUDE	115.1 W TR_NO 0 SKEW 0.0
	DVB-S2A CODERATE AUTO RX H
FREQUENCY(KHz)	1468750 SYMBOL(SPS) 50000000 22K <input type="checkbox"/>
LNB_PWR	18V LNB_LO 10.75 READ TR
RF Parameters	
RF_SEARCH <input checked="" type="checkbox"/>	OVERRIDEN <input checked="" type="checkbox"/> THRESHOLD 75
Compass Parameters	
FULL_SEARCH <input checked="" type="checkbox"/>	OVERRIDEN <input checked="" type="checkbox"/> H(0-N,90-E,180-S,270-W) 0
AZ Parameters	
SEARCH_WINDOW	180
Beacon Parameters	
FREQUENCY(MHz)	1210.99 ATTENUATION(dB) 22.0
Search Options	
EN(REF) <input type="checkbox"/>	INC DIS <input type="button" value="v"/>
Command	
UPDATE	

Fig. 86: Web Interface – Beam Configuration Screen

9.1.5. MODEM

Satellite Modem service type selection, and modem parameter configuration that include and are not limited to disable/enable options for ACP, TX_DIS, TX, RX, BC and 22k. Service sub id for multiple beacon satellite search under NA, choose Typical for normal operation or select one of the custom Configurations that have been created.



The screenshot shows the iNetVu Modem Configuration screen. On the left is a vertical navigation menu with options: ADMIN, CONTROLS, CONTROLLER, BEAM, MODEM (highlighted), PLATFORM, MAINTENANCE, TEST, and ABOUT. The main content area is titled 'iNetVu Modem Configuration' and is divided into three sections: 'Modem', 'Parameters', and 'Command'. The 'Modem' section contains 'TYPE' (set to NA) and 'TYPICAL' (set to TYPICAL). The 'Parameters' section contains 'MODE' (set to NA), 'LONGITUDE' (set to NA), and 'FREQUENCY(MHz)' (set to NA). The 'Command' section contains an 'UPDATE' button.

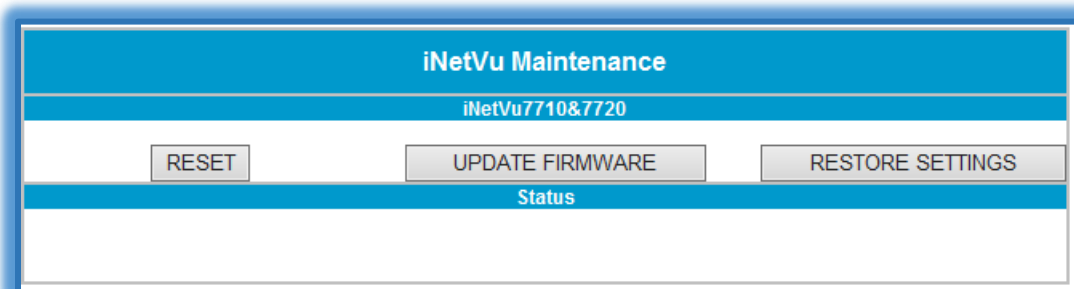
Fig. 87: Web Interface – Modem Configuration Screen

9.1.6. PLATFORM

The platform type, version and serial number can be configured here. EL, Compass and PL offset can be set under this menu option.

9.1.7. MAINTENANCE

This section has RESET which restarts the 7710 controller, UPDATE FIRMWARE which allow the firmware to be updated after the controller is in updating mode and finally the RESTORE SETTINGS which will reset all platform related parameters to factory defaults, as well the Beam and Service configuration settings will be reset.



The screenshot shows the iNetVu Maintenance screen. The title bar is 'iNetVu Maintenance'. Below it is a sub-header 'iNetVu7710&7720'. The main content area contains three buttons: 'RESET', 'UPDATE FIRMWARE', and 'RESTORE SETTINGS'. Below these buttons is a section titled 'Status'.

Fig. 88: Web Interface – Beam Maintenance Screen

9.1.8. TEST

This menu option is mainly used for Demos and testing certain components of the system, as well as for sending certain modem commands that have been integrated with the iNetVu® 7710 Controller. The Compass Calibration functions are now also found on this screen.

The 7710 Controller Web Interface Test page is similar to the iNetVu® Software Test Window.

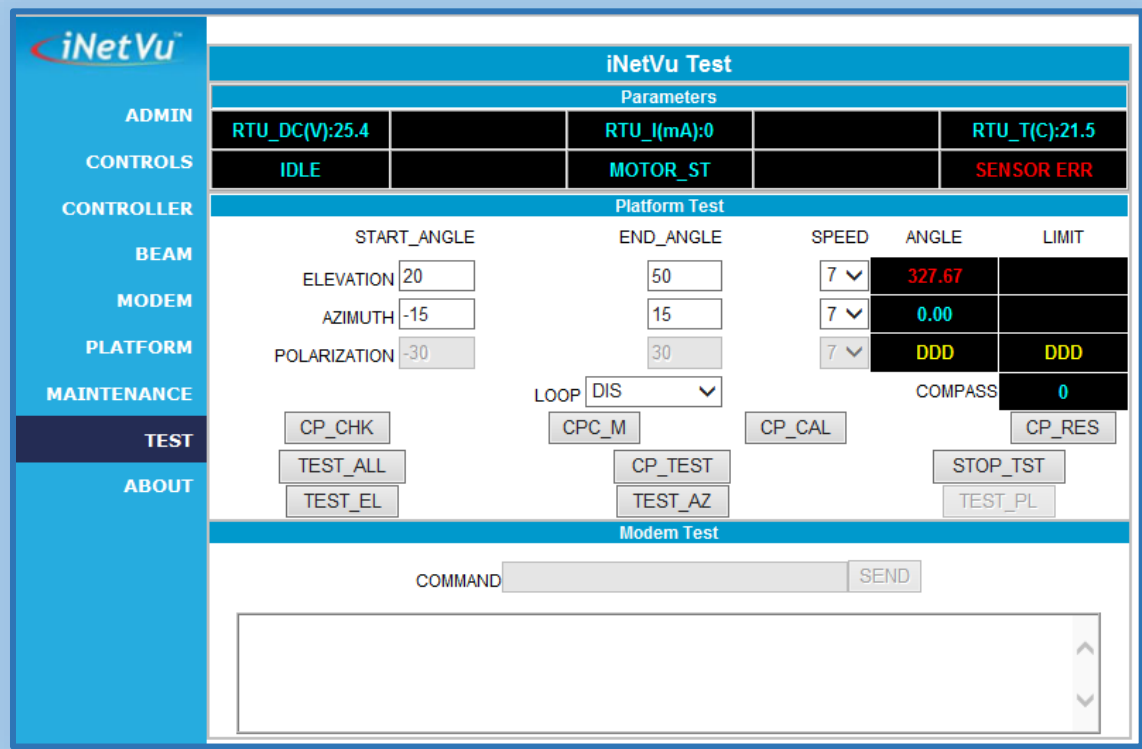


Fig. 89: Web Interface - iNetVu Test Screen

9.1.9. ABOUT

The “iNetVu About” web page, displays information to the user about various sub-system components for the 7710 and 7720 controllers, as well as contact information for support and feedback.


 ADMIN CONTROLS CONTROLLER BEAM MODEM PLATFORM MAINTENANCE TEST ABOUT	iNetVu About			
	iNetVu 7710(Central)			
	FIRMWARE	7.3.2.0	BOOTLOADER	7.3.3.0
			REVISION	1
	DVB	S2ACM(3C)	MAC	40-D8-55-06-E1-BD
			SERIAL_NO	14964
	iNetVu7720(Remote)			
	FIRMWARE	7.3.2.3	BOOTLOADER	7.3.2.0
			REVISION	0
			SERIAL_NO	65535
	Platform			
	TYPE	A0756A	VERSION	1.X
			SERIAL_NO	14469
	Modem			
	SERVICE	V_SB2	TYPE	NA
			INTERFACE	HTTP
	FIRMWARE	NA	SERIAL_NO	NA
	Satellite			
	LONGITUDE	SAT1_115.1W		
	http://www.c-comsat.com C-COM Satellite Systems Inc.			

Fig. 90: Web Interface - About Screen

10. Appendix

10.1. Appendix 1: Default Limits and Configuration Data Tables

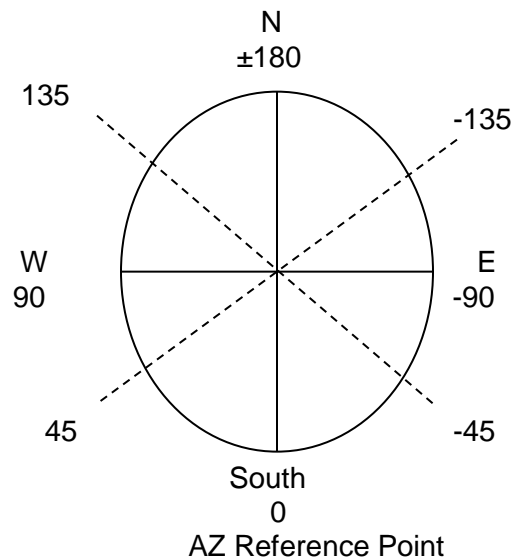
Elevation Offset

PLATFORM TYPES					
	Fly-75V (A0756A)	Fly-98G/H/V (A0986A/B)	Fly-981 (A0986C)	Fly-1202V (A1206A)	Fly-1202 (A1206C)
EL OFFSET	4.5	5.5	5.5	23.5	21.5
PLATFORM TYPES					
	Fly-1801 (A1806C/D/E)	Ka-75V (A0755A)	Ka-98G/H/V (A0985A/B)	Ka-98H (A0987B)	1201A/1205C (A1201A/A1205C)
EL OFFSET	15.9	23.5	23.5	22.5	23.5
PLATFORM TYPES					
	Ka-1202G/H/V (A1205A/B)	Ka-1202G (A1207A)	1501 (A1505C/E)	1801 (A1805C)	1801 (A1805D/E)
EL OFFSET	23.5	26.5	23.5	23.5	29.2

Table 1: Default Elevation Offsets. All values are $\pm 2^\circ$ after Target Calibration.

10.2.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



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

10.3.Appendix 3: Updating Firmware on 7710&7720 Controllers

This procedure describes the steps involved in updating firmware on 7710 and 7720 Controllers that have older versions of firmware running.

Required Materials:

- iNetVu™ 7710 Controller
- iNetVu™ 7720 Controller
- iNetVu7710_BOX_FW.S19 (file)
- iNetVu7720_RTCTL_FW.S (file)
- PC
- USB - A to B Cable

Procedure:

1. Power **ON** the PC and the 7710 Controller which will also provide power to 7720 (it is assumed that the Power & Data cable is connected to 7720 remote drive module).
2. Open the iNetVu 7710 Controller Software
3. Connect the PC to the Controller through a USB interface.
4. Press the “Reset” Button on the 7710 Controller. While the controller is resetting, hold the ‘↑’ and ‘↓’ keypads simultaneously on the front panel. A message indicating “Updating Firmware” should appear and window will flip over to Maintenance.
5. Advance to the Maintenance button menu and click on the “Load FW For 7710” button.

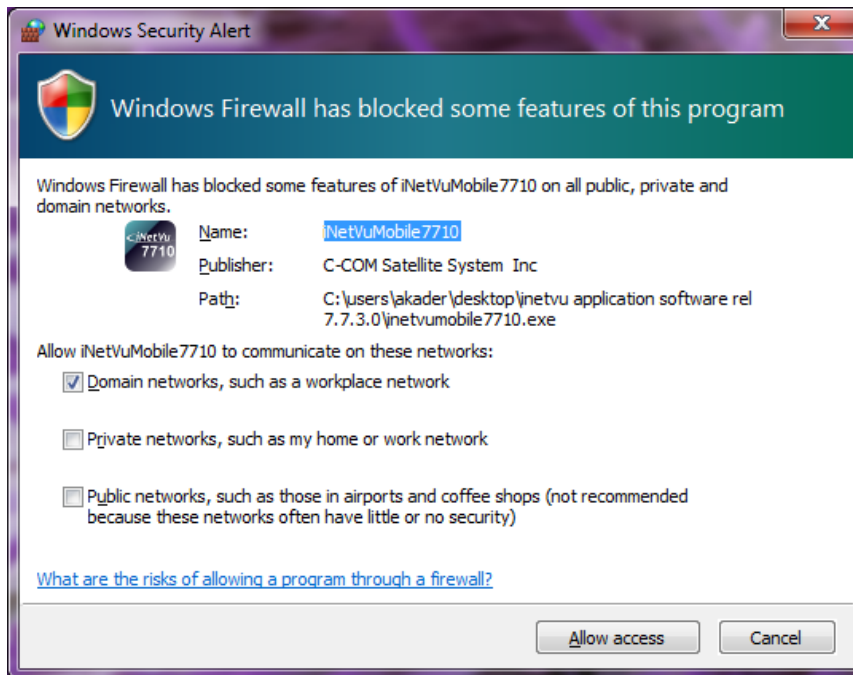
Note DO NOT** turn the power off during Firmware upgrade as this may cause damage to the controller board(s).

6. Wait until the Loading firmware process is complete (monitor the LCD Screen to ensure flashing to memory has completed); controller will reset itself once firmware upgrade completes.
7. Repeat steps 4 to 6 to update 7720 firmware. Note step 5, click on the “Load FW For 7720” button.
8. Congratulations you have uploaded the new firmware onto your 7710 and 7720 Controllers.

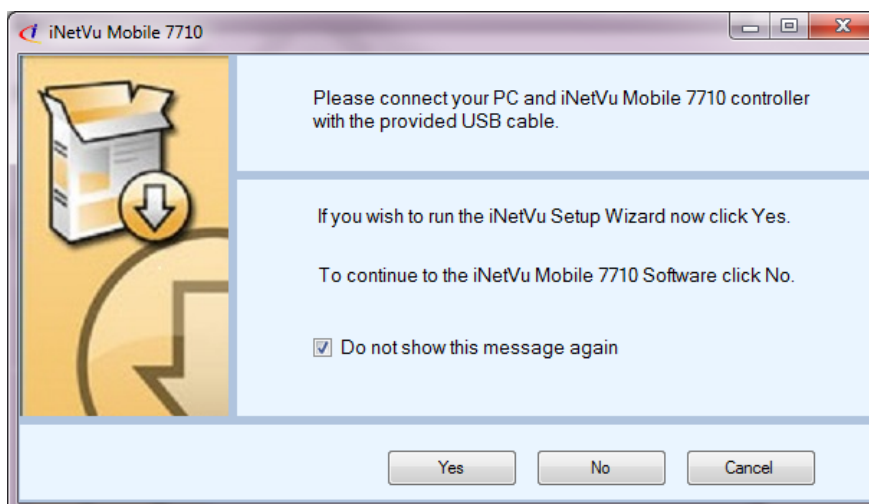
10.4. Appendix 4: System Configuration Using Setup Wizard

The Setup Wizard will launch every time the **iNetVuMobile7700** software is executed, select “Do not show this message again” to allow software to go straight to the Controls Window when the software application is launched.

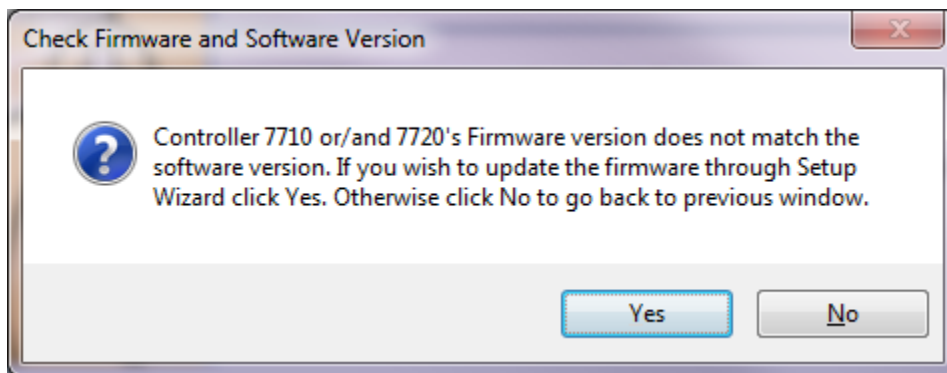
1. Click **iNetVuMobile7710** icon on desktop.
2. Click Allow access button on the Windows Firewall op-up window.



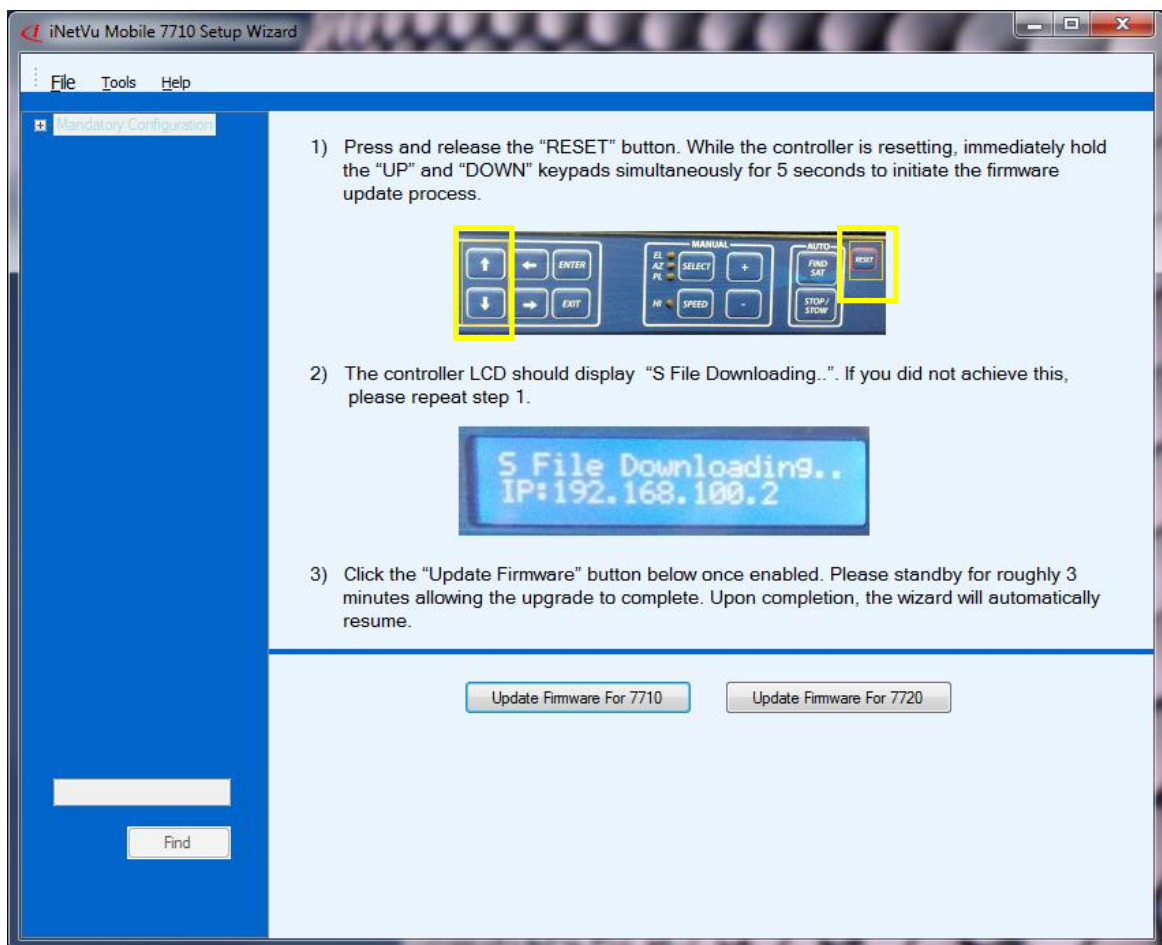
3. Put check mark in the box “Do not show this message again” and click Yes.



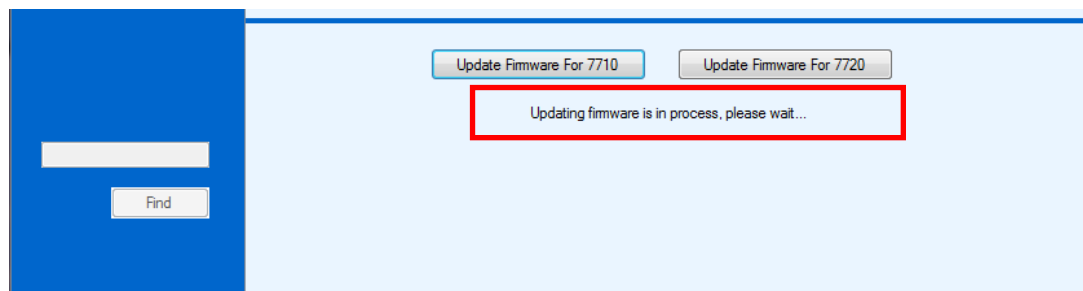
4. The Setup Wizard will check and ensure Firmware and Software versions are the same, if not the same version you will be prompted to update, select Yes.



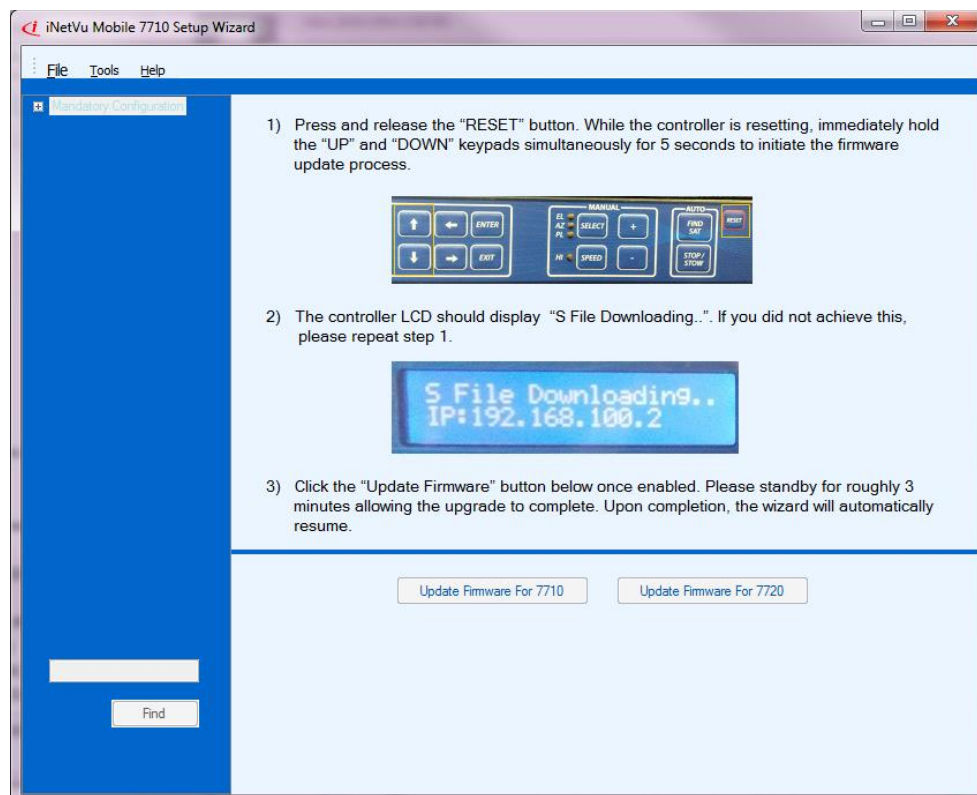
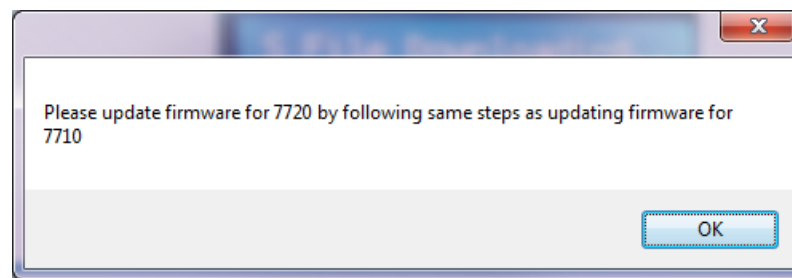
5. Put controller in firmware update mode by following instructions on the screen.
6. Click "Update Firmware for 7710" button, it may take 10 seconds for button to become clickable.



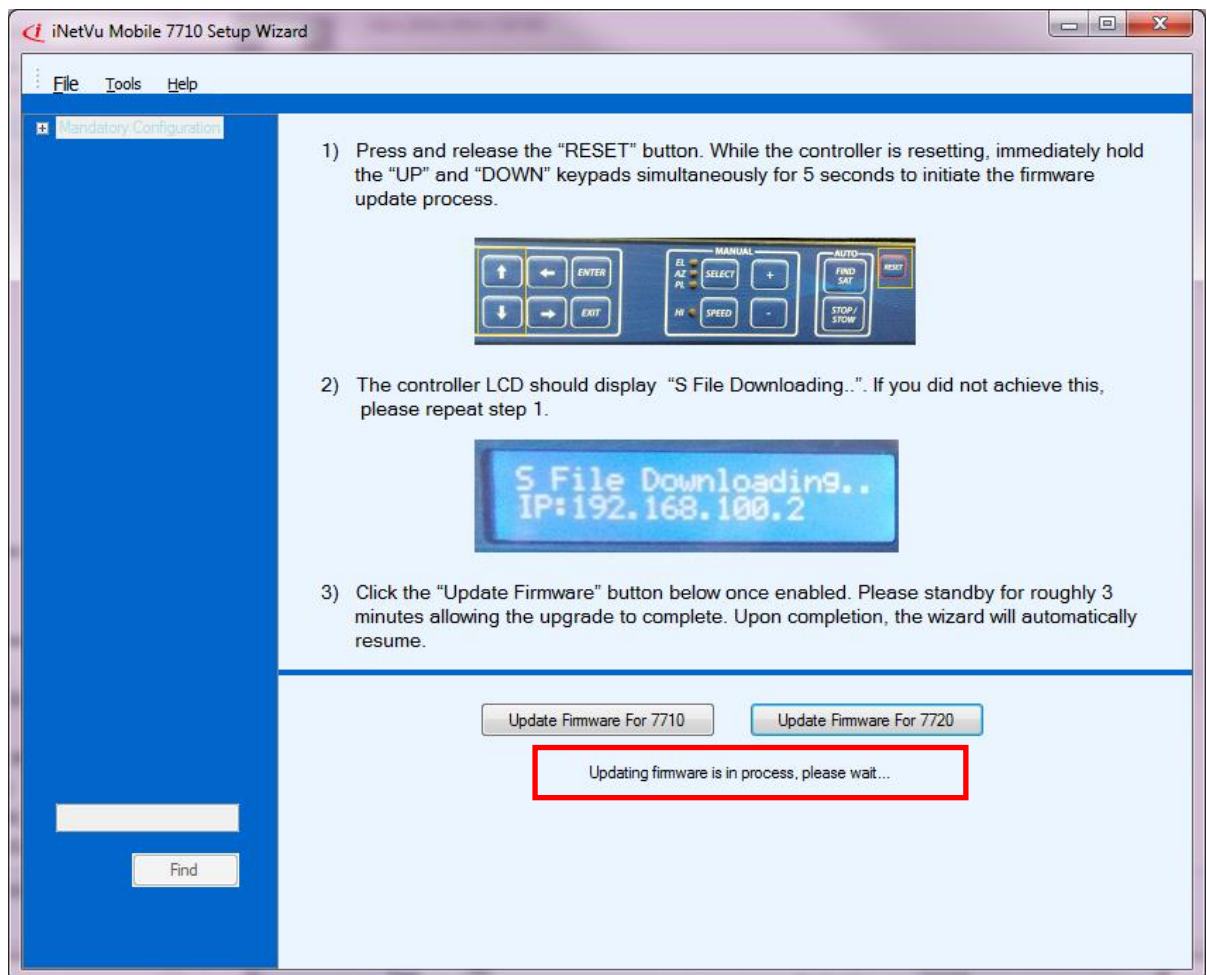
7. Firmware update status will be displayed on bottom of screen. The wizard will resume after 7710 Firmware update completes.



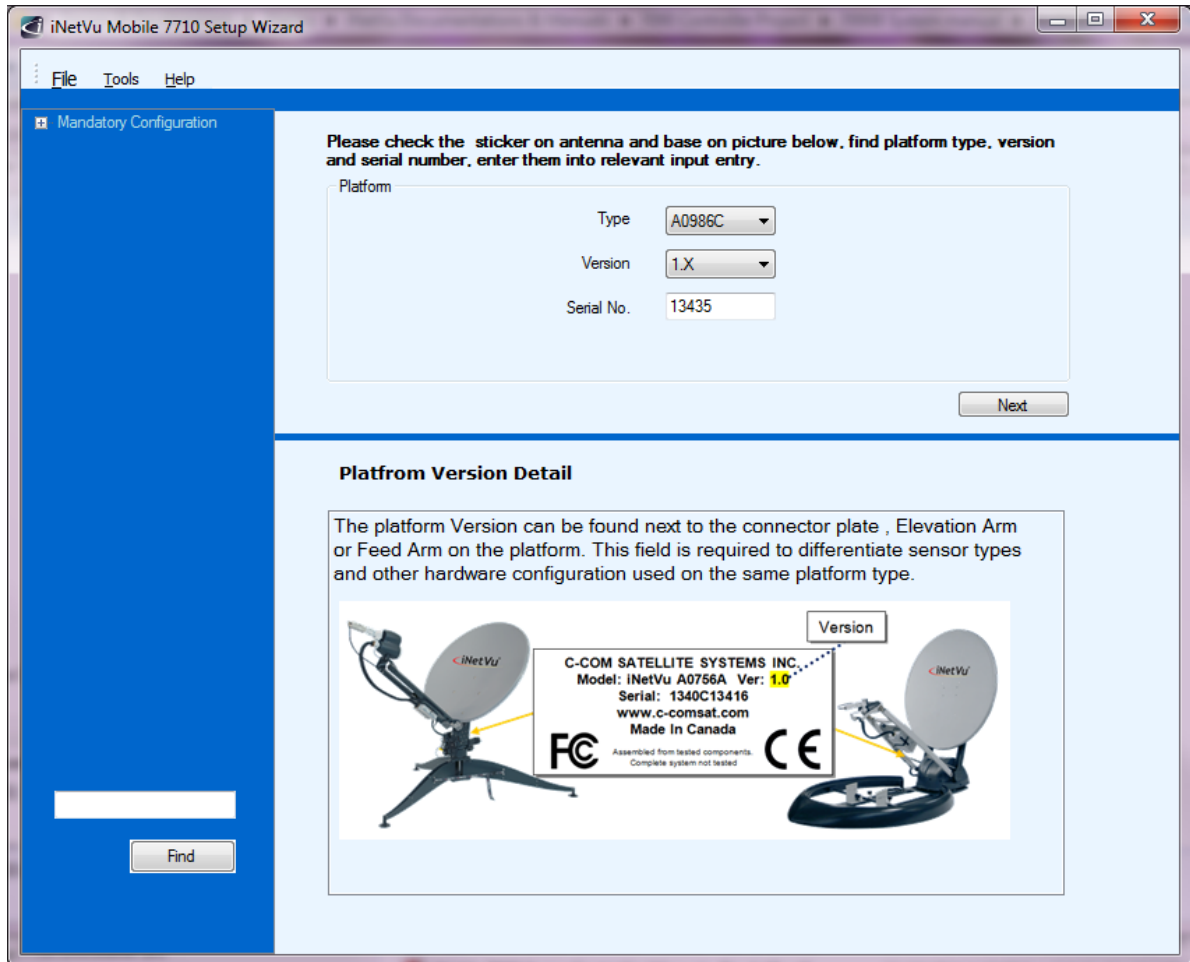
8. The wizard will prompt you to update the 7720 firmware after the 7710 firmware update finishes. Click OK and put the controller in firmware update mode.



9. Click “Update Firmware for 7720” button. Controller will reset after firmware update completes and the wizard will automatically flip to the next screen.



10. Select and or enter Platform type, version and Serial number and click Next.



The screenshot shows the 'iNetVu Mobile 7710 Setup Wizard' window. The 'Mandatory Configuration' section is active, displaying a 'Platform' configuration area. This area includes dropdown menus for 'Type' (set to A0986C) and 'Version' (set to 1.X), and a text field for 'Serial No.' (set to 13435). A 'Next' button is located at the bottom right of this section. Below the configuration area is a 'Platform Version Detail' section. It contains a text box explaining that the platform version can be found next to the connector plate, Elevation Arm, or Feed Arm on the platform. Below this text is an image of a satellite dish with a label that reads: 'C-COM SATELLITE SYSTEMS INC. Model: iNetVu A0756A Ver: 1.0 Serial: 1340C13416 www.c-comsat.com Made in Canada'. The label also features FCC and CE certification marks and the text 'Assembled from tested components. Complete system not tested.'.

iNetVu Mobile 7710 Setup Wizard

File Tools Help

Mandatory Configuration

Please check the sticker on antenna and base on picture below, find platform type, version and serial number, enter them into relevant input entry.

Platform

Type: A0986C

Version: 1.X

Serial No.: 13435

Next

Platform Version Detail

The platform Version can be found next to the connector plate , Elevation Arm or Feed Arm on the platform. This field is required to differentiate sensor types and other hardware configuration used on the same platform type.

Version

C-COM SATELLITE SYSTEMS INC.
Model: iNetVu A0756A Ver: 1.0
Serial: 1340C13416
www.c-comsat.com
Made in Canada

FCC CE

Assembled from tested components.
Complete system not tested.

Find

11. Select the service type (Modem service used), and interface, along with Controller and Modem information. Hover over each field to get tips, examples and clear explanation. Click Next.

The screenshot displays the 'iNetVu Mobile 7710 Setup Wizard' window. The left sidebar shows a tree view with 'Mandatory Configuration' expanded, containing 'Platform Information' and 'Service Information'. 'Service Information' is selected, showing 'Service Type' as 'HNS_KU' and 'Service Interface' as 'HTTP'. Below this, a message states: 'Please get the following parameters from the System Info page of your Hughes Modem. If your modem is not commissioned, call your service provider first to get it commissioned'. The 'Modem Configuration' section includes fields for IP Address (192.168.100.1), Freq(KHz) (999999), Sym(sp) (30000000), DVB Type (DVB-S1), Longitude (91.0 W), and LNB 22KHz Tone (unchecked). The 'Controller TCP/IP Setting' section includes IP Address (192.168.100.2), Subnet Mask (255.255.255.0), and Default Gateway (192.168.0.1). The 'Gateway Detail' section provides instructions on setting the Gateway IP Address, with an example: 'Exp: If Modem IP is 192.168.100.1, Gateway IP Address should be same as the Modem IP address 192.168.100.1'.

iNetVu Mobile 7710 Setup Wizard

File Tools Help

Mandatory Configuration

- Platform Information
 - Platform Type
 - Platform Version
 - Platform Serial No
- Service Information
 - Service Type: HNS_KU
 - Service Interface: HTTP
- Satellite Information
 - Satellite No
 - Satellite Longitude
 - Satellite Offset
 - LNB Power
 - LNB LO Frequency
 - Search Method
 - DVB Type
 - DVB Frequency
 - DVB Symbol Rate
 - DVB FEC Rate

Back Next

Please get the following parameters from the System Info page of your Hughes Modem.
If your modem is not commissioned, call your service provider first to get it commissioned

Modem Configuration

IP Address: 192.168.100.1 RX: V

Freq(KHz): 999999 TX: H

Sym(sp): 30000000

DVB Type: DVB-S1

Longitude: 91.0 W

LNB 22KHz Tone: ☐

Controller TCP/IP Setting

IP Address: 192.168.100.2

Subnet Mask: 255.255.255.0

Default Gateway: 192.168.0.1

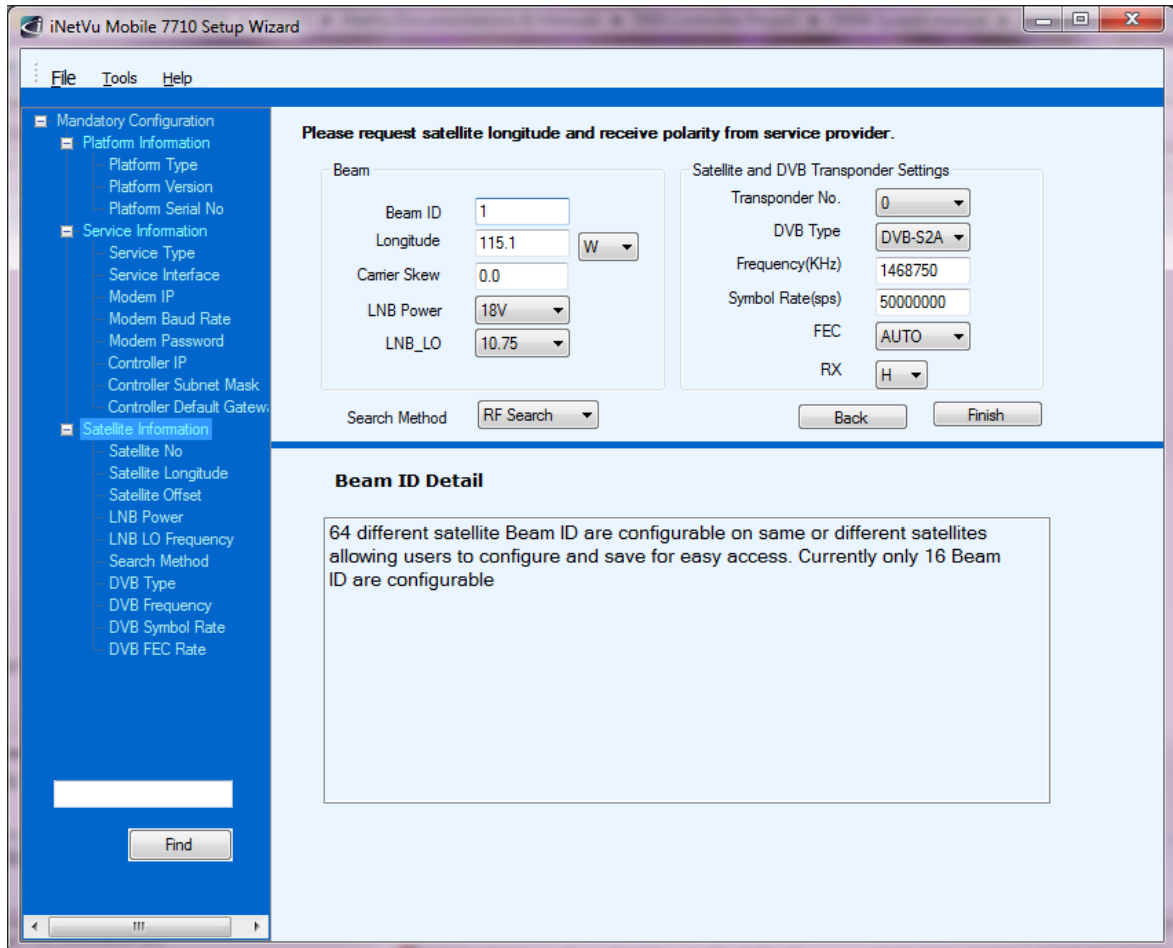
Gateway Detail

Gateway IP Address (Default: 192.168.0.32) this can be changed to support the network you are on.

Exp: If Modem IP is 192.168.100.1, Gateway IP Address should be same as the Modem IP address 192.168.100.1.

Find

12. Satellite information screen, allows user to configure Satellite, Search Method and DVB settings. Enter and select Parameters/Settings for the Satellite used with your platform. Click Finish.



The screenshot shows the 'iNetVu Mobile 7710 Setup Wizard' window. The left sidebar lists configuration categories: Mandatory Configuration, Platform Information, Service Information, and Satellite Information. The 'Satellite Information' category is selected, showing a tree view with options like Satellite No, Longitude, Offset, Power, Frequency, Search Method, DVB Type, Frequency, Symbol Rate, and FEC Rate. The main area is titled 'Please request satellite longitude and receive polarity from service provider.' It contains two sections: 'Beam' and 'Satellite and DVB Transponder Settings'. The 'Beam' section has fields for Beam ID (1), Longitude (115.1 W), Carrier Skew (0.0), LNB Power (18V), and LNB_LO (10.75). The 'Satellite and DVB Transponder Settings' section has fields for Transponder No. (0), DVB Type (DVB-S2A), Frequency (KHz) (1468750), Symbol Rate (sps) (50000000), FEC (AUTO), and RX (H). A 'Search Method' dropdown is set to 'RF Search'. At the bottom are 'Back' and 'Finish' buttons. Below these settings is a 'Beam ID Detail' section with a text box explaining that 64 different satellite Beam IDs are configurable, but only 16 are currently configurable.

Beam

Beam ID: 1
Longitude: 115.1 W
Carrier Skew: 0.0
LNB Power: 18V
LNB_LO: 10.75

Satellite and DVB Transponder Settings

Transponder No.: 0
DVB Type: DVB-S2A
Frequency(KHz): 1468750
Symbol Rate(sps): 50000000
FEC: AUTO
RX: H

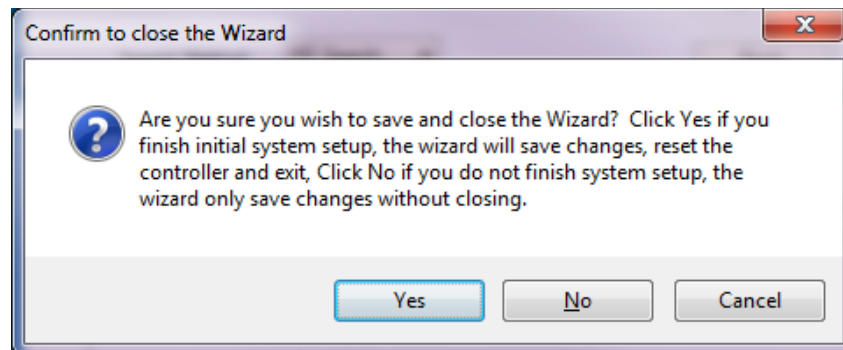
Search Method: RF Search

Back Finish

Beam ID Detail

64 different satellite Beam ID are configurable on same or different satellites allowing users to configure and save for easy access. Currently only 16 Beam ID are configurable

13. Click Yes to save and exit.



14. Launch the Application by double clicking the **iNetVuMobile7710** icon.

10.5.Appendix 5: DC Input Power Cable Connectivity

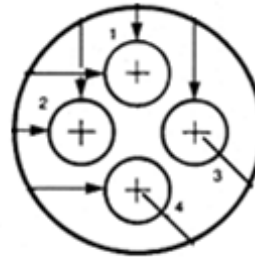
Controller Receptacle

**J1 Panel Receptacle
4-Socket Contacts Mating View**



External Cable Plug

**P1 Straight Plug
4-Pin Contact Mating View**



P1 External Cable Plug Pin List (4-CONTACTS)

RECEPTACLE PIN	SIGNAL	Notes
P1-1	DC + In 2	Must have an Inline Fast Blow Fuse – 15A@24VDC
P1-2	DC - In 2	
P1-3	CHASSIS GND	
P1-4	NOT USED	

Note: The correct external power source must be used with the correct controller type. The DC cable if assembled/fabricated by end user must include **INLINE FAST BLOW FUSE** rated at 15A@24VDC.

Materials Required for External Cable:

Part #	Quantity	Description
206429-1	1	TEConnectivity AMP CPC Plug Assembly, Shell Size 11, Reverse Sex, 4-Pin Contacts, Series 1
206358-5	1	TEConnectivity AMP CPC Cable Clamp, Size 11
66361-4	4	TEConnectivity AMP CPC Pin Contact, Series 1, Wire 18-14 AWG
-----	1	Heat shrink, Adhesive, 25mm Dia X 60mm Lg
-----	X	External cable used should be a 3-wire, 14 AWG.
-----	1	inline fast blow fuse at 15A@24VDC

10.6.Appendix 6: Supported Modems

Service Type	Modem Type
HNS	Hughes HN7000/7700/7740/7740S HX90/100/200/260
HN_KA	Hughes HN 9200 (Ka) HN 9400 (Ka) HN 9600 (Ka) HN 9800 (Ka)
HT (Jupiter)	Hughes HT 1100/1200/1300
iDirect	iDirect X5
SurfBeam2	SurfBeam2 (Ka) Nomadic/Auto-Acquire
Tooway	ViaSat Tooway(Ka) SurfBeam2 Pro
Gilat	SkyEdge Pro SkyEdge Access SkyEdge II-C Capricorn-4
IPStar	iCON-3200 iPX-5100
Newtec	MDM3100/3300
Datum	M7 Series
STM	Satlink2900
NovelSat	NS3000

10.7. Appendix 7: 7710 Error/Message Code Definition

Error Code	Description	Comments
0X8000	Packet CRC Error	
0X8002	DVB Module Error	
0X8003	MCF5282 Interrupt Error	
0X8004	Unknown Modem Command	
0X8005	Re-send Command to Beacon Receiver	
0X8006	Invalid DVB Carrier	
0X8007	Peaking Failed	
0X8008	SNMP Error	
0X8009	DHCP Failed	
0X8011	Command Rejected	
0X8015	Re-send the command to DRC3500	
0X8021	S File Error	
0X8022	Can't find 'S'!	
0X8023	S File too big!	
0X8024	Erasing Failed!	
0X8025	Programming Failed!	
0X8030	No Reply(Remote)!	
0X8040	Downloading S File Failed!	
0X8050	CANBUS Reset(HW)	
0X8051	CANBUS Overrun	
0X8063	CANBUS Reset(SW)	
0X8071	Enter 'Install Mode' Failed!	
0X8072	Exit 'Install Mode' Failed!	
0X8073	EL&AZ(SB2) Invalid!	
0X80A0	Restoring failed (Compass), switching to Full Search	
	ACP INFO	
0X8100	AUTO ACP failed twice	
0X8101	Can't start MANUAL ACP(low isolation)	
0X8102	AUTO ACP failed after MANUAL ACP	
0X8103	ACP fatal error	
0X8105	The first MANUAL ACP failed	
	Motion Detection Errors	
0X8200	Failed to disable TX	
0X8300	Look-up table for Tooway not available	
0X8400	Can't find beam in look-up table for Tooway	
0X8800	NETWORK RESET...	
0X8826	TX polarity is not configured in option file	
0X882B	Satellite longitude is not configured in option file	

0X882C	Frequency and Symbol Rate is not configured in option file	
0X882D	DVB Mode is not configured in option file	
0X882E	RX Polarity is not configured in option file	
	Inclined Satellite Errors	
0X8900	Can't start peaking(INC)	
0X8901	Peaking Failed(INC)	
0X8910	System is running (in use)	
0X8911	Sensor Error	
0X8912	No Compass	
0X8913	Satellite not visible	
0X8914	GPS is not ready	
0X8915	RF is too low	
0X8916	MODEM/Beacon is not ready for RF search	
0X8917	Antenna facing in the opposite direction. Please rotate the antenna 180 degrees	
0X8918	Compass not valid (After Restoring)	
	Errors from 7720 Remote Drive Module	
0X9000	EL Over Current(Hardware)	
0X9001	AZ Over Current(Hardware)	
0X9002	PL Over Current(Hardware)	
0X9003	EL Protection	
0X9004	AZ Protection	
0X9005	PL Protection	
0X9006	EL JAM Error	
0X9007	AZ JAM Error	
0X9008	PL JAM Error	
0X9009	EL Motor&Encoder Error	
0X900A	AZ Motor&Encoder Error	
0X900B	PL Motor&Encoder Error	
0X9010	EL Current/Limit Protection	
0X9011	AZ Current/Limit Protection	
0X9012	PL Current/Limit Protection	
0X9014	EL Protection Limit(UP)	
0X9015	EL Protection Limit(STOW)	
0X9016	EL Protection Limit(DOWN)	
0X9018	AZ Protection ON EL Limit	
0X9019	AZ END LIMIT1(Left) Protection	
0X901A	AZ END LIMIT2(Right) Protection	
0X9020	PL Protection ON EL Limit	
0X9021	PL END LIMIT1(CCW) Protection	
0X9022	PL END LIMIT2(CW) Protection	
0X9030	EL Position Failed(20S)	
0X9031	AZ Position Failed(20S)	
0X9032	PL Position Failed(20S)	
0X9035	EL Position Failed(Stag0~~3)	
0X9036	AZ Position Failed(Stag0~~3)	

0X9037	PL Position Failed(Stag0~~3)	
0X903A	EL Position Failed	
0X903B	AZ Position Failed	
0X903C	PL Position Failed	
0X90FE	Cannot find AZ/PL limit off status	
0X90FF	Cannot find AZ/PL limit on status	
0XA000	Can't find satellite	
0XA001	Skew adjustment failed	
0XA002	Can't do Skew Adj/ACP(Signal low)	
0XA003	Stow Failed(No AZ/PL ST)	
0XA005	Cal/Test Compass Failed	
0XA007	Failed to Disable TX	
0XA009	Failed to go to the specified position	
0XA00A	ACP is not available	
0XA00B	Don't allow ACP to start	
0XA00C	ACP did not start yet	
0XA100	PL disabled	
0XA150	Upload the recorded data failed	
0XA151	Download the satellite parameter failed	
0XA200	Write Internal Flash Failed	
0XA201	Erase Internal Flash Failed	
0XA202	Can't add new satellite (No room)	
0XA210	BEAM ID not in Beam Table	
0XA211	Satellite not in Satellite Table	
0XA300	Can't move motor because of limit protection	
0XA310	Can't enable modem(Signal low)	
0XA311	Can't enable/disable TX	
0XA320	Modem status wrong for force ranging	
0XA321	Can't start force ranging	
System Peaking		
0X4011	Quadratic peaking step 1	
0X4012	Quadratic peaking step 2	
0X4013	Quadratic peaking step 3	
0X4014	Quadratic peaking step 4	
0X4015	Quadratic peaking step 5	
0X4016	Quadratic peaking step 6	
0X4018	Split window Search	
Compass Restore		
0X4060	0/1 compass reading and no movement for compass restoring	
0X4061	Compass reading is ok after compass restore	
0X4062	The first movement for compass restore	
0X4063	Compass reading is ok or compass is a legacy compass where restoring is not valid	
0X4064	Compass reading is ok after moving	
0X4065	The second movement for compass restore	

	Unattended Operation	
0X9100	Can't find satellite automatically (UN)	
0X9101	Didn't find satellite (UN)	
0X9102	Can't stow (UN)	
	iNetVu NAV Compass	
0X600C	Save compass calibration data has finished	
0X600D	Compass Restoring Finished	
0X600E	Compass Calibration Enabled	
0X600F	Compass Calibration Disabled	
0X6020	Auto Calibration Finished	
0X6021	Auto Check Compass Finished	

10.8.Appendix 8: 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**Date **July 15, 2014**

Signature:


Full Name: **Dr.Leslie Klein, P.Eng.**Position: **President & CEO**