Vsat Station 2.4M

Operation manual v3

Option		
2.4M – CPI antenna	E3-201124	November 2024

Table of Contents

Safety Instructions

It is highly recommended that a RISK ASSESMENT is carried out prior to the deployment to ensure the safe working area for everyone, and the risks have been reduced.

Working at Height – a brief guide http://www.hse.gov.uk/pubns/indg401.pdf

Risk Assessment – a brief guide http://www.hse.gov.uk/pubns/indg163.pdf

Manual Handling – website https://www.hse.gov.uk/msd/manual-handling/index.htm

The assemblies are extremely HEAVY ensure the correct number of trained personnel and the correct lifting equipment is used in the installation of this system.

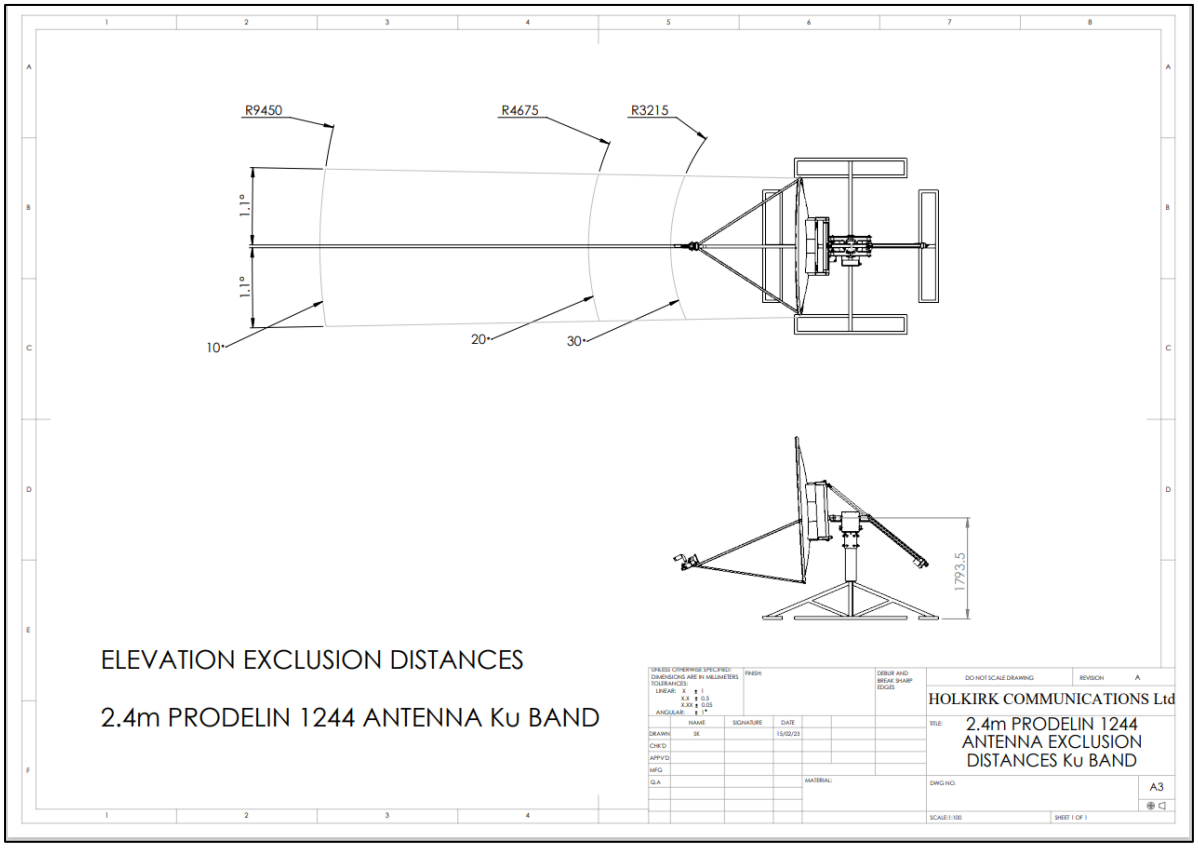
There is mechanical assembly required for this system so please ensure all warnings for FINGER TRAP are adhered too.

There is a potential risk of unstable structure processes so please ensure all warnings for UNSTABLE STRUCTURE are adhered too.

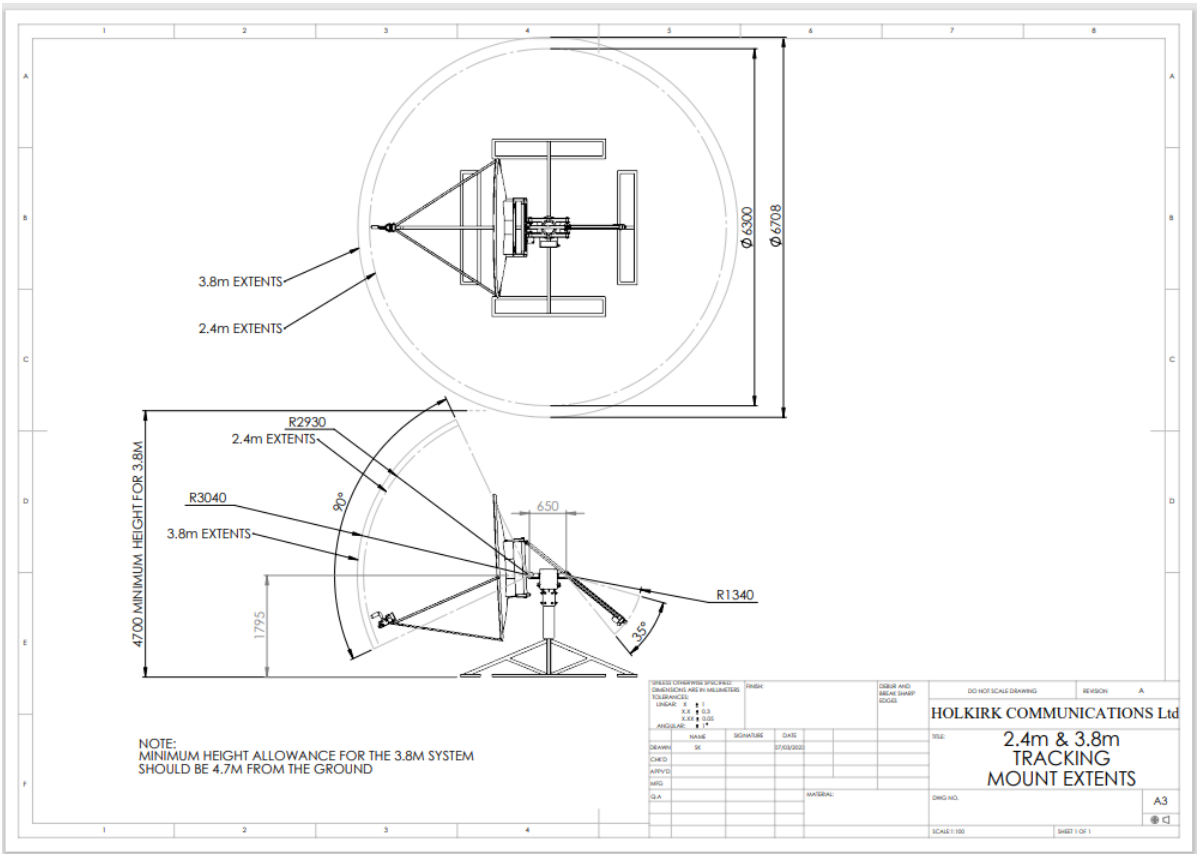
There is a potential risk of toppling so please ensure all warnings for TOPPLING HAZARD are adhered too.

Prior to installation, verify that the installation site roof material and supporting structure have been investigated and found capable of withstanding all loads imposed by the proposed antenna system. Confirm that the anchors, and/or safety cables, if required, have been found to be adequate to resist the reactions from the antenna system and that the installation will be in accordance with all applicable local, state, and federal requirements.

RF Exclusion Zone



Movement extents



Declaration of Conformity

Declaration of Conformity

It is to certify that the below-mentioned product has been thoroughly checked by our organization against the standards set in our updated manuals and catalogs.

The product met the quality standards and the required specifications. This included the raw materials, involved processes, and performance of the product.

Company Name: Holkirk Communication Ltd, Unit 19 Kenneth Way, Wilstead Industrial Park, Kenneth Way, Wilstead, Bedford MK45 3PD

Product : **2.4m VSAT Terminal**

Type : **Motorised Dish Positioner**

STANDARDS:

Machinery Directive 2006/42/EC

EMF exposure DIRECTIVE 2013/35/EU

Conformance to:

RoHS 2011/65/EU

RED 2014/53/EU

Certified by: Stephen Kirkwood

Name Signature

Date: 24/03/2023

This certificate of conformity is valid for five years only, provided there are no major changes in the top management, raw materials, processes or employed production machinery/technology.

Packing List

Number	Quantity	Description	Part Number
1	1 off	AZ/EL head with motors and ACU	2370-0060
2	1off	POL drive assembly	2370-0061

Line Replaceable Units LRU

Number	Description	Part Number
	Az pot assembly	2370-0052
	Az Limit switch assembly	2370-0055
	EL encoder	2370-0132
	EL Motor Assembly	2370-0053
	AZ Motor Assembly	2370-0117
	Inclinometer Assembly	2370-0056
	ACU Assembly	2370-0057

The Dish Positioner tracking mount head is designed to fit the standard king post size:-

2.4M Reflector O/D 6.63" / 168.4mm (SCH40 standard pipe)

Total weight 210kg

Tools for assembly

AZ/ELhead mounting bolts	14mm Allen Key
Motor collar pinch assembly	6mm Alen Key

Other tools:-

- Compass
- 19mm spanner for un-packing from crate

Dish Positioner Mount

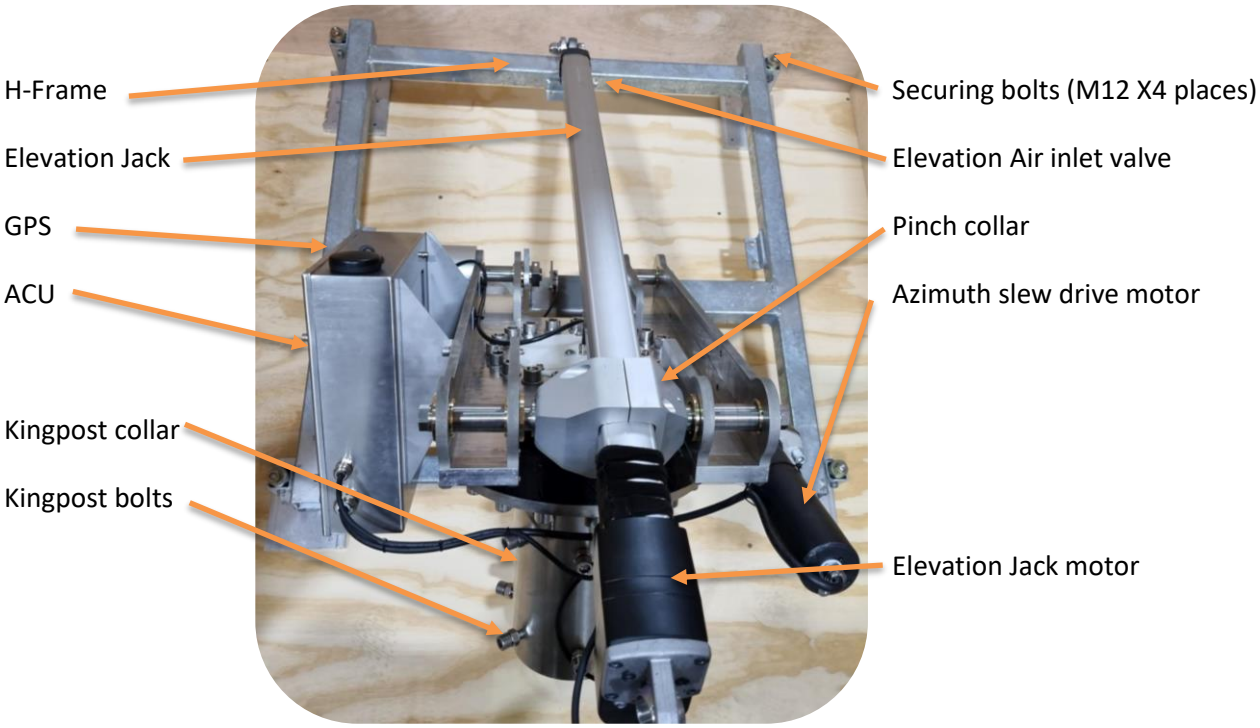
The Holkirk Dish Positioner Mount provides a simple, robust and accurate solution for small antenna positioning and inclined orbit tracking in C, X Ku and Ka-Band.

With a wide powered movement of 10° to 90° elevation and +/-180° azimuth range and 110/240VAC input, the Dish Positioner Mount will provide reliable worldwide operation.

An array of sensors integrated into the ACU will allow the system to determine its geo-location as well as it's perpendicular elevation angle relative to the surface of the earth (not terrain dependant) so installation is very simple with the self-commissioning and auto-acquire process.

Power outage feature – The array of sensors that are incorporated into the Dish Positioner Mount will allow the system to be powered off for any amount of time and still be able to SEARCH, LOCATE and TRACK an inclined orbit satellite without the intervention of experience staff.

Component parts



Unpacking the positioning head

Remove top and side of the packing crate

Remove M12 securing nuts (4 positions)

WARNING : observe all safety instructions with regards to manual handling and forklift operations – qualified FORKLIFT operators only.

Pick up assembly with forklift

NOTE: the weight will be off centre, and over the two rear cross bars of the H-Frame

Place the positioning head on a suitable surface

NOTE: the weight will be off centre, and over the two rear cross bars of the H-Frame

With two persons, lift the positioning head and rest on the base of the king post ready for forklift engagement for final assembly onto kingpost.

NOTE: Place the positioning head on a suitable, flat, stable surface

WARNING: care must be taken as the head positioner is free to topple

Installation of positioning head

Set the fork width to fit Lifting points for the head positioner so the lift can be achieved on the flat unobstructed part of the positioner elevation frame base.

NOTE: Azimuth slew motor to the front

Using the forklift, manoeuvre the positioner head over the king post

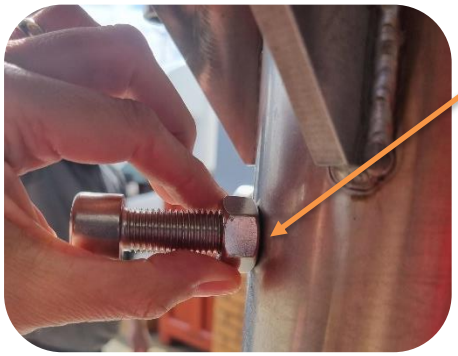
WARNING: FINGER TRAP, UNSTABLE STRUCTURE

Best Practice: ensure all PPE is worn for these operations

Lower the positioning head onto the kingpost until the head is full seated

Centralized the king post sleeve with the 16mm fixing bolts (two rows TOP and BOTTOM)

Tighten the fixing bolts



Use the 16mm LOCK NUT to secure the fixing bolts

The positioning head is now ready for the operation jack set procedure

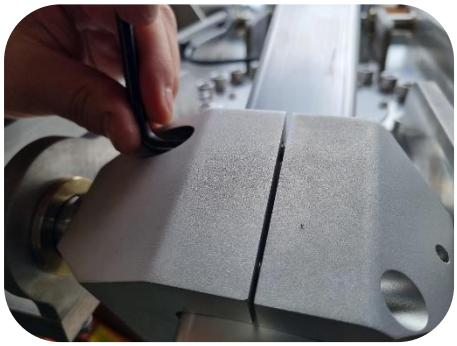
Operational Jack setting

For transportation the elevation jack will be set in ‘TRANSPOT’ position.

Pinch collar

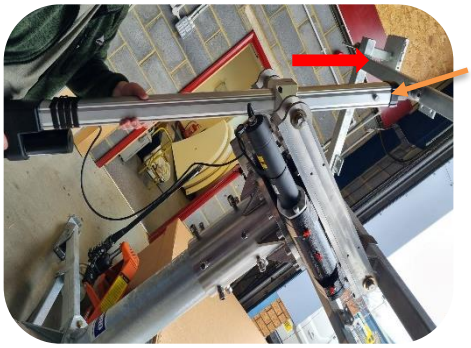
Velcro ties for motor cable

NOTE : motor is at the base of the elevation pinch collar

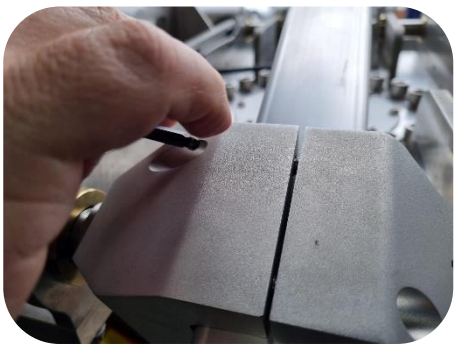


WARNING: the H-Frame is heavy and will cause the jack to free run into the air inlet valve and cause damage – this is a two-person operation

Loosen the pinch collar bolts in 4 places (two per side)



Slide the elevation jack to the air intake valve



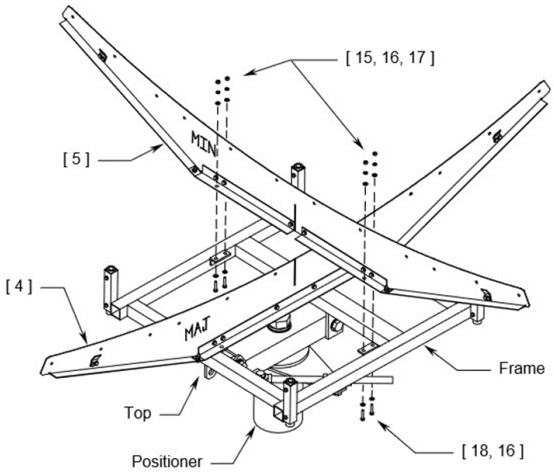
Tighten the pinch collar bolts in 4 places (two per side)

The system is now ready to build the reflector

With the H-frame in zenith (11º)

Reflector Templates

A) Place the major template assembly (item 4) on the back of the frame with the letters "MAJ" pointing towards the top of the frame (top being where the positioner is closest to the elevation tab.
B) Insert the 5/16" bolts (item 18) thru the angles in the frame and into the angles on the template. Secure with 5/16" hardware (items 15, 16, 17). Snug hardware but **do not tighten.**
C) Slip minor template assembly (item 5) over the major template as shown and also secure with 5/16" hardware (items 15, 16, 17, 18) but **do not tighten.**



Reflector Quadrants

The series 1244 reflector quadrants are labelled #1, #2, #3 and #4. These numbers may be found moulded into the back of each quadrant at the inside corner. Note that each quadrant has a longer side (major axis) and a shorter side (minor axis). In the standard upright position, the antenna elevation angle range is between 12 and 90 degrees. When viewed from behind in the standard position (feed support at the bottom), quadrant #1 should be in the upper left; #2 is lower left; #3 is lower right and #4 in the upper right position.

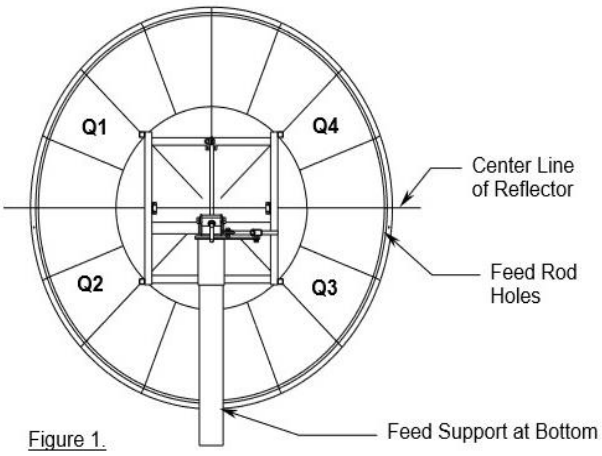
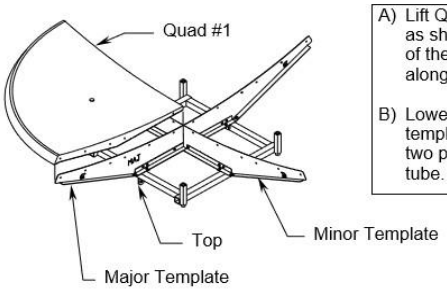


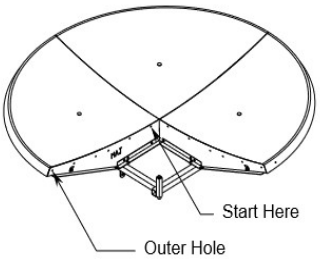
Figure 1.



STEP 4:

A) Lift Quadrant #1 over the templates as shown. Note that the longer side of the quadrant should be aligned along the major axis.

B) Lower the quadrant between the templates and let it rest upon the two petal helpers and the insert tube.



STEP 6:

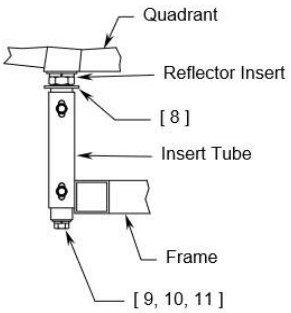
A) Working from the center out, place two 5/16" flatwashers (item 16) under the head of the 5/16" x 1.75" bolt (item 20). Insert bolt thru the holes, place another flatwasher and thread a nylon lock nut (item 21) onto end of bolt and tighten. Leave the outer four holes open.
NOTE: once the nut is tight, the bolt will still be loose. DO NOT add washers or change the bolt length.

B) For the four remaining holes closest to the outer rim, secure with 5/16" x 1.50 bolt and hardware (items 19, 15, 16, 17). Tightening these last bolts will clamp the petals together – desired result.

C) Now return to where the templates are attached to the frame and securely tighten the eight pieces of hardware.

D) Next tighten the four 1/2" bolts going thru the insert tubes and into the reflector inserts.

E) Now tighten the 7/8" hardware on the reflector inserts that run thru each quadrant. **Do not tighten all at once**. Alternate between the inserts, tightening a little at a time. Follow this pattern until the lockwashers are flat. Be careful not to over tighten as this will damage the boss on the quadrant.

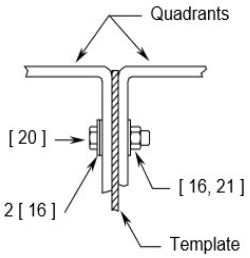


STEP 5:

A) Slip a green washer (item 8) between the insert tube on the frame and the reflector insert on the quadrant.

B) Insert the 1/2" x 9" bolt and hardware (items 9, 10, 11) into the bottom of the insert tube, thru the green washer and into the reflector insert. Snug the bolt but do not tighten.

C) Repeat steps 4 and 5 with the three remaining quadrants.



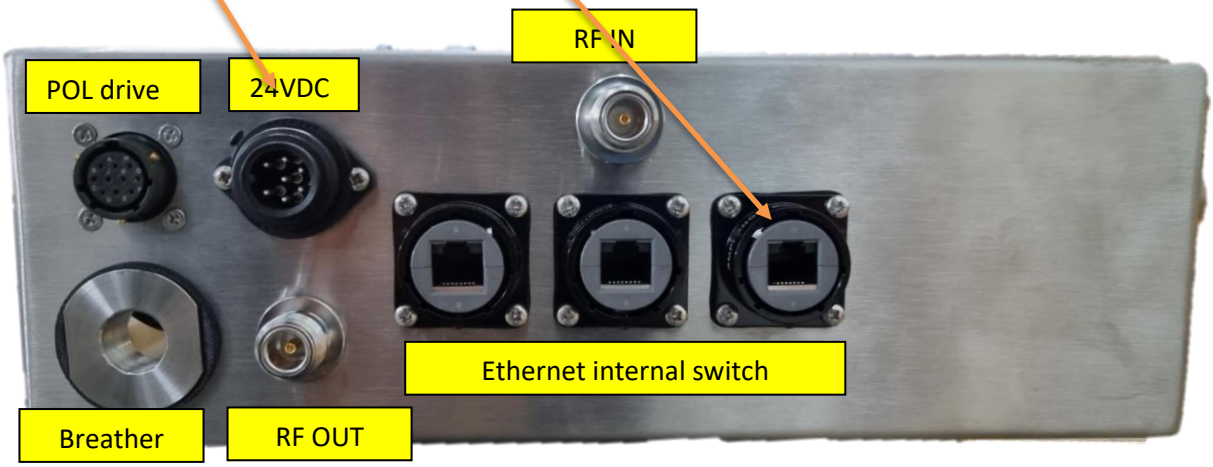
The antenna is now ready to unstow into operational position.

Connection to AIM-STAION ACU

The connections for the AIM-STATION ACU are house in the positioner control box

Connect 24VDC

Connect Ethernet to control PC



AIM-STATION IP address communication

AIM DEFAULT IP ADDRESS (settable) : 192.168.1.72

Static IP ADDRESS for AIM board and controller port

The AIM board will have a static fixed IP ADDRESS : 10.10.10.22

Move reflector to OPERATION position

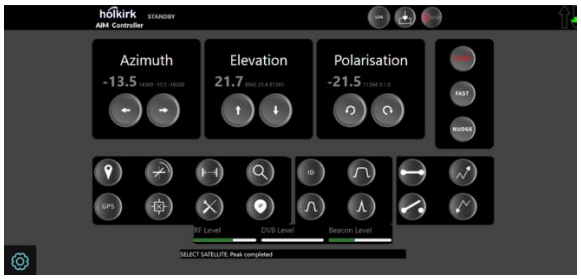
READ AIM-STATION OPERATION MANUAL IN CONJUCTION WITH THIS QUICK START GUIDE

To move the reflector to fit the remaining antenna assemblies and accessories you will need to manually drive the antenna to an operational position.

Access the AIM-STATION HOME screen

Press MENU button (bottom left)

Select COMMISION



Select FAST 

Click Elevation down 

NOTE : the arrow will go RED and will continue to drive until you press the button again.

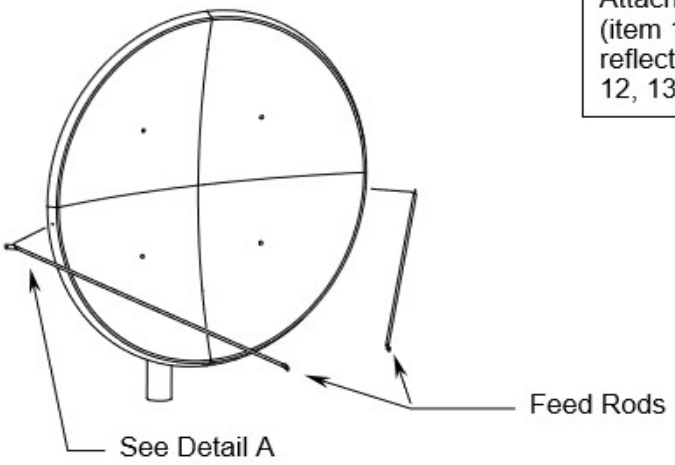
NOTE : Elevation down limits are set to 11^{o}

The reflector will now be accessible for the feed arm assembly

Feed-arm assembly

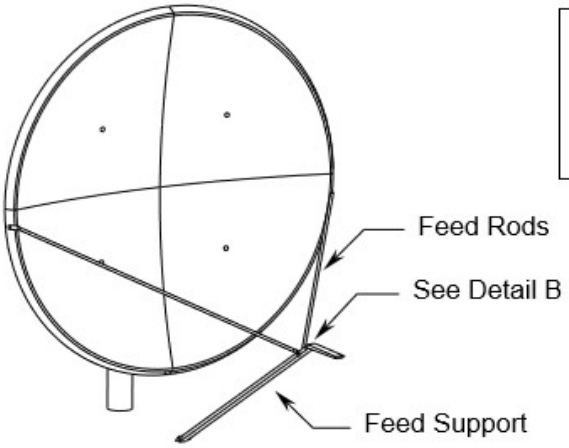
STEP 2:

Attach the long end of each feed rod (item 1) loosely to the sides of the reflector with 5/16" hardware (items 8, 12, 13, 14). See detail A



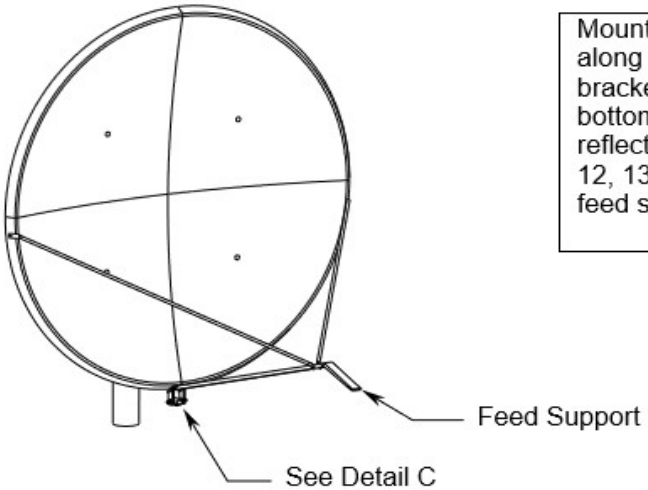
STEP 3:

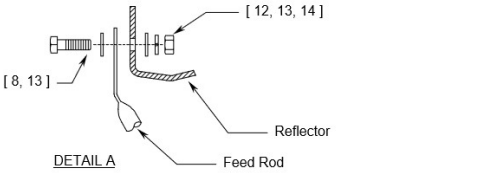
Position the feed support (item 2) in front of the reflector as shown and attach to the to ends of the feed rods with 5/16" hardware (items11, 12, 13, 14). See Detail B.



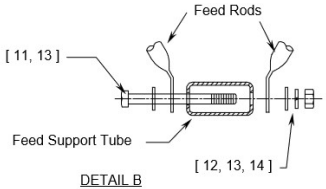
STEP 4:

Mount the other end of the feed support along with the feed stabilization brackets and pivot assembly to the bottom of the
reflector with 5/16" hardware (items 9, 12, 13, 14). See detail C. Tighten all feed support hardware at this time.

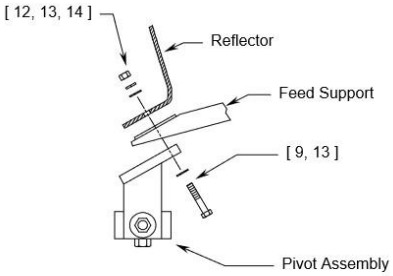




DETAIL A



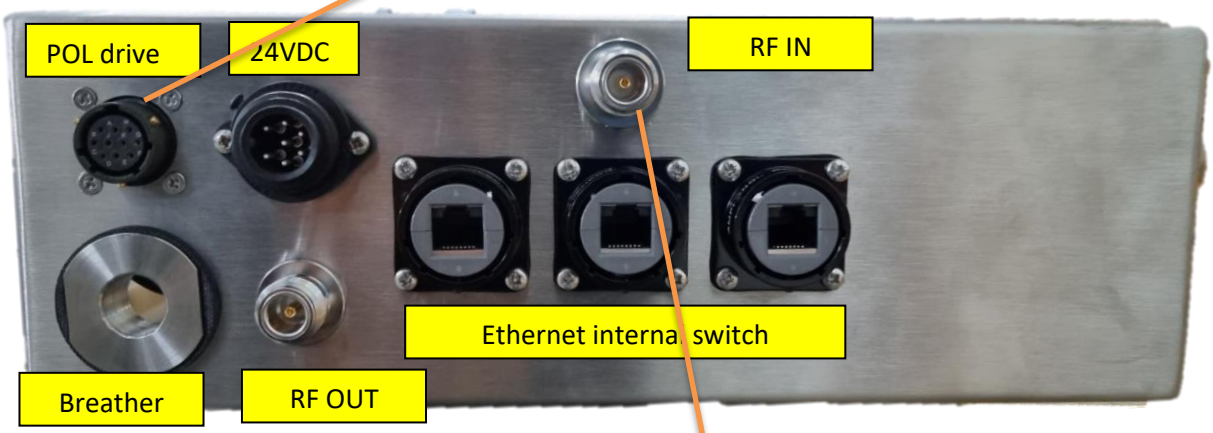
DETAIL B



DETAIL C

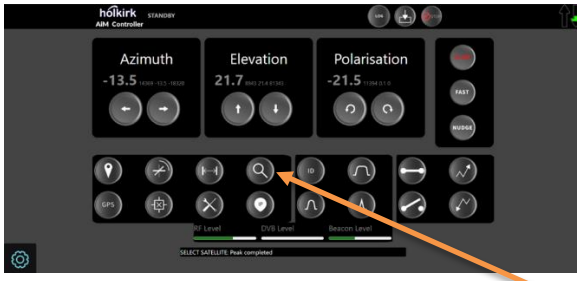
Feed arm connections

Connect the POL drive



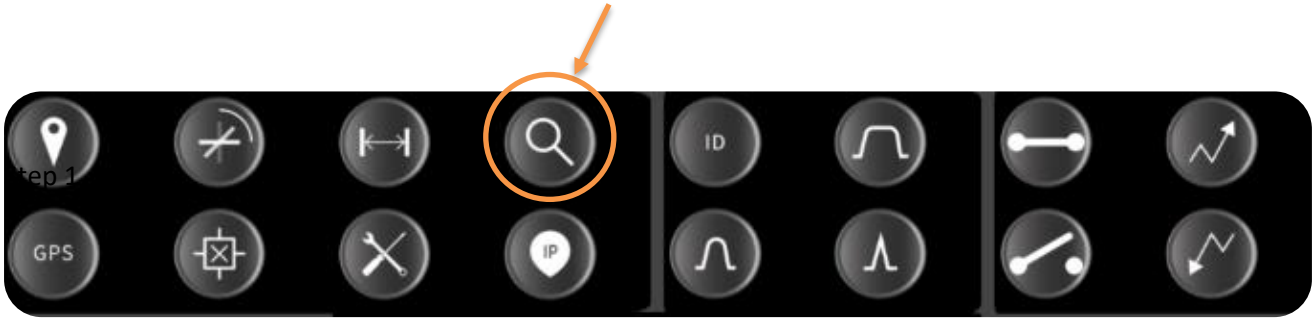
INITIAL ACQUIRE

For the system to calibrate the sensors the AIM-STATION needs to accurately identify a known satellite from the SATELLITE database.



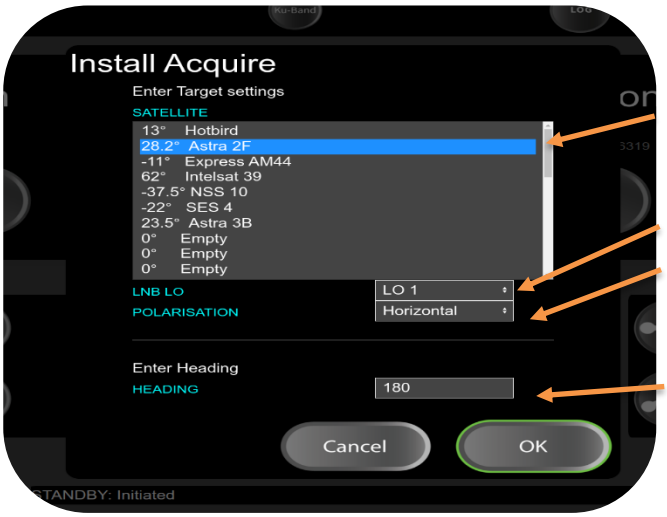
If the antenna is moving, the STOW button will change to a STOP button that will halt any automatic movement of the antenna and return the AIM controller to a STANDBY mode

From the commission screen select Initial acquire



Enter an orbital slot / LO and POL – these must be in the database with a relevant active beacon frequency

Enter the heading of the antenna



Set the required satellite from drop down menu

Required LO

Required POL

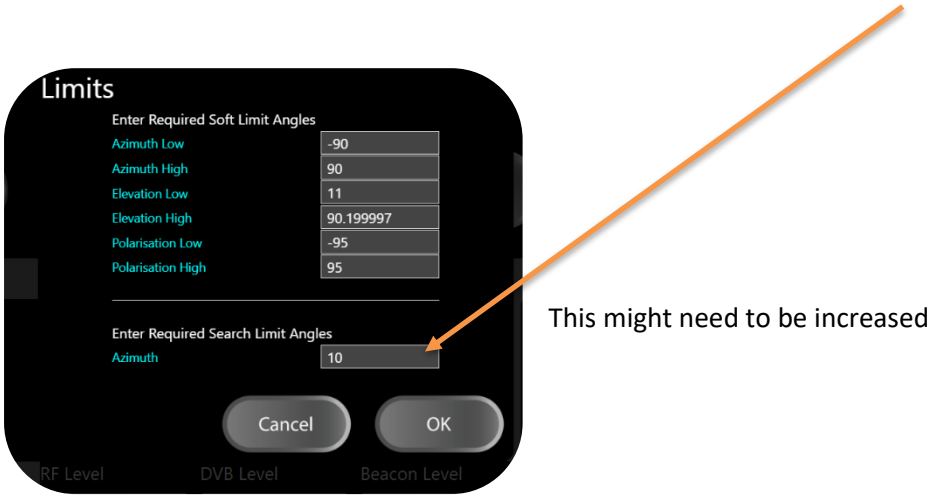
Set the antenna heading use **a compass for heading**

PRESS **OK**

Stage 1 - The antenna will drive to a safe position

Elevation 25°
Azimuth 0°
POL 0°

Stage 2 - Sets POL and starts to SEARCH (search window set in LIMITS - INITIAL ACQUIRE)



This might need to be increased

Stage 3 - Acquires the desired satellite

Select Satellite

Pressing the Select Satellite button will open a separate drop-down menu for the entered satellite data base

Select the desired satellite from the drop-down list

Select the FINAL POL required

Select FINAL LNB Volts

Select FINAL LO

press **OK**

NOTE: the AIM-STATION will search, acquire and peak using the information in the satellite data base. The FINAL position will be set after AIM-STATION has identified the satellite

WARNING : this will initiate the antenna to move

If the antenna is moving, the STOP button that will halt any automatic movement of the antenna and return the AIM controller to a STANDBY mode

NOTE: POSITIVE (+) is EAST and NEGATIVE (-) is WEST

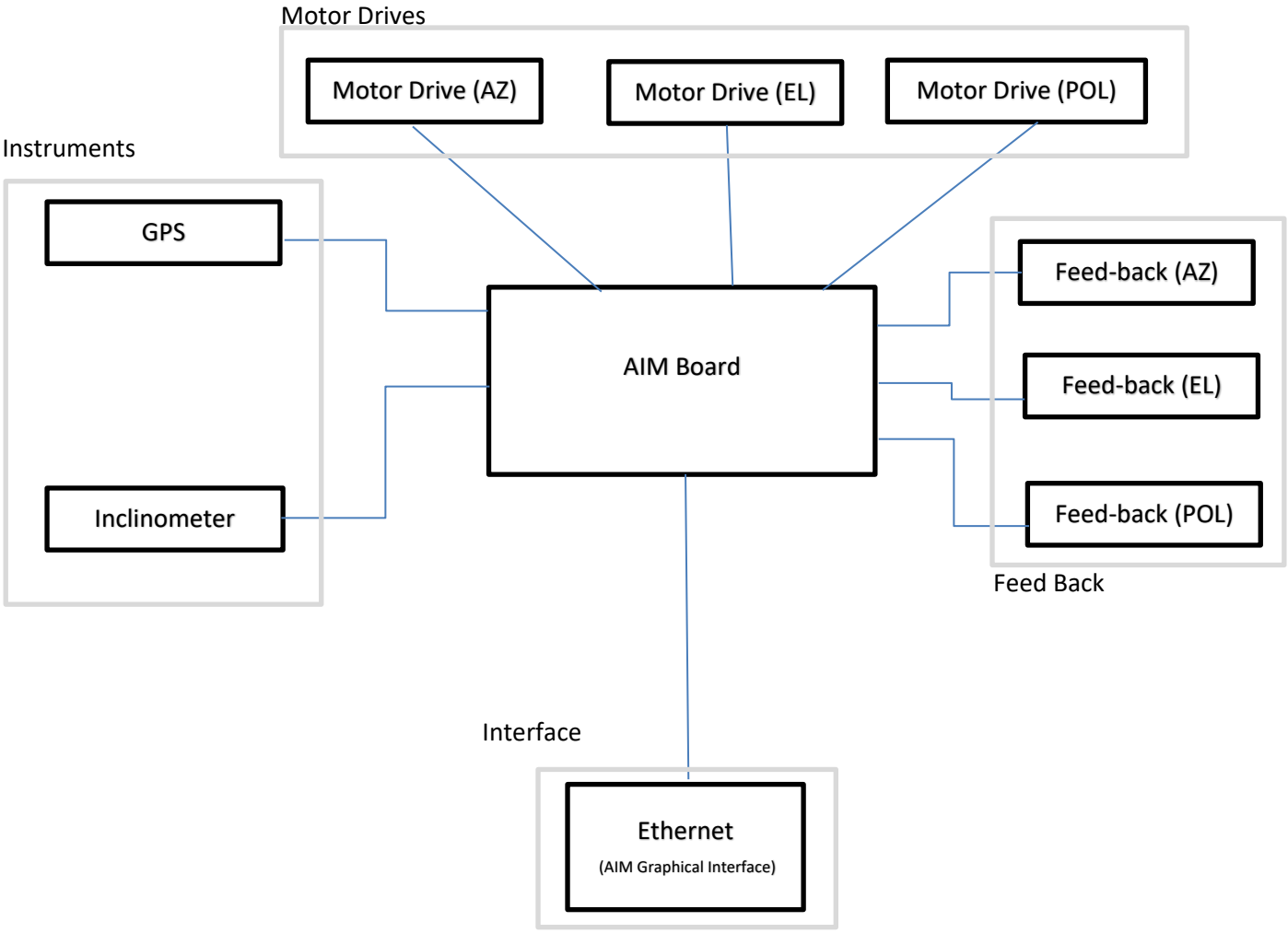
NOTE: The satellite selected need to be in the satellite data base AND the data including LNB information needs to be correct in the INSTALLATION menu

Antenna Interface Module (AIM-STATION)

The Antenna Interface Module (AIM- STATION) is a fully featured 3 axis control system for mobile antenna systems. The AIM uses feedback from an array of sensors and positional indicators to allow the system to accurately auto-point at a predetermined satellite. The antenna positional data of the geo-location data is attained from the instrument set of the GPS, Inclinometer and Magnetometer.

The AIM mobile can drive three axes with a max current of 4.5A per axis and has both digital and analogue inputs for rotational position on all three axes.

Block diagram for the AIM eco-system



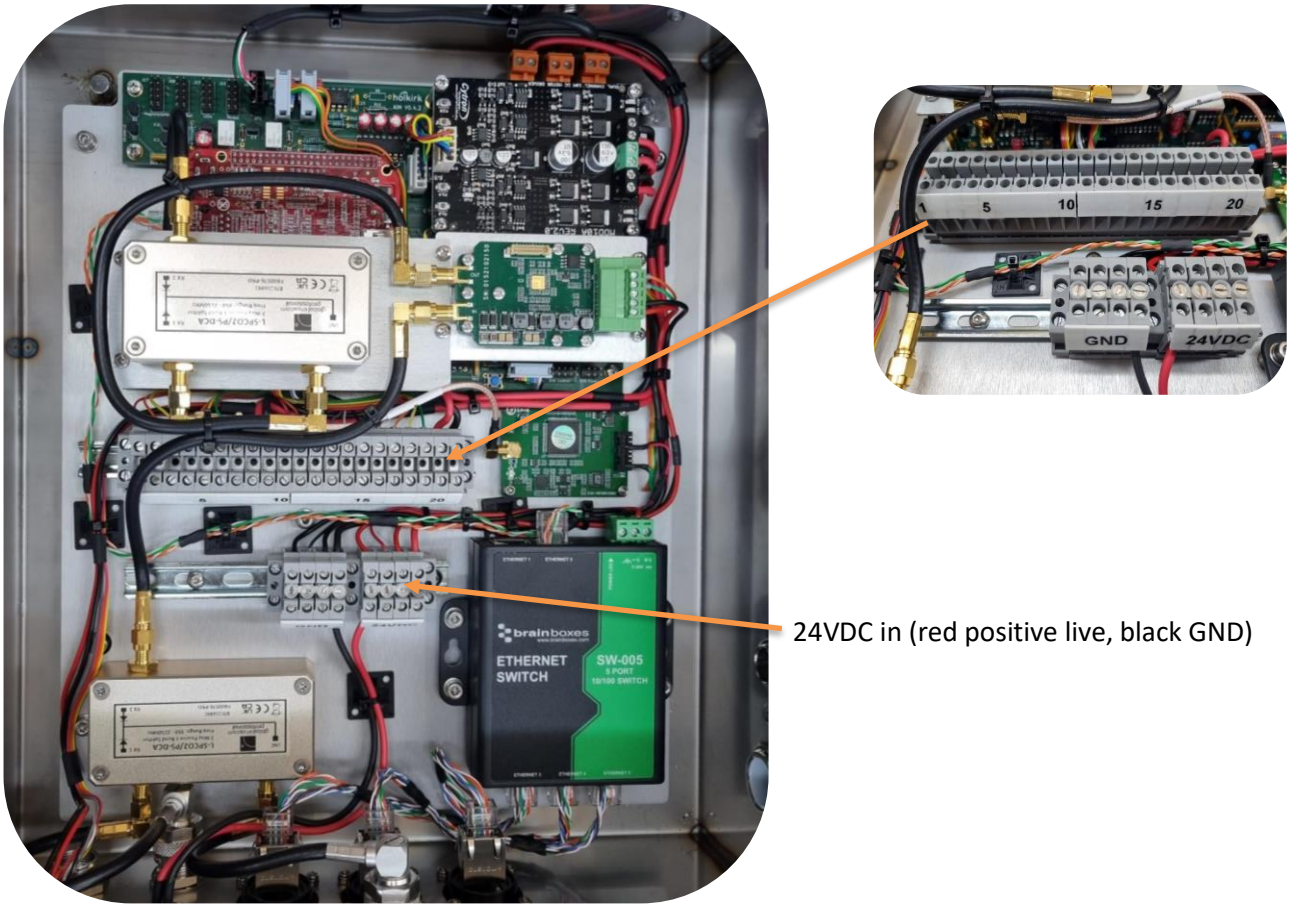
GPS – Factory fitted and connected directly into AIM board. This will give AIM the geo-location of the antenna relative to the earth surface (including altitude)

Pitch and Roll - Factory fitted and connected directly into AIM board. This instrument gives the AIM information on the terrain level in two axis, this is used to calculate accurate satellite position and polarisation skew.

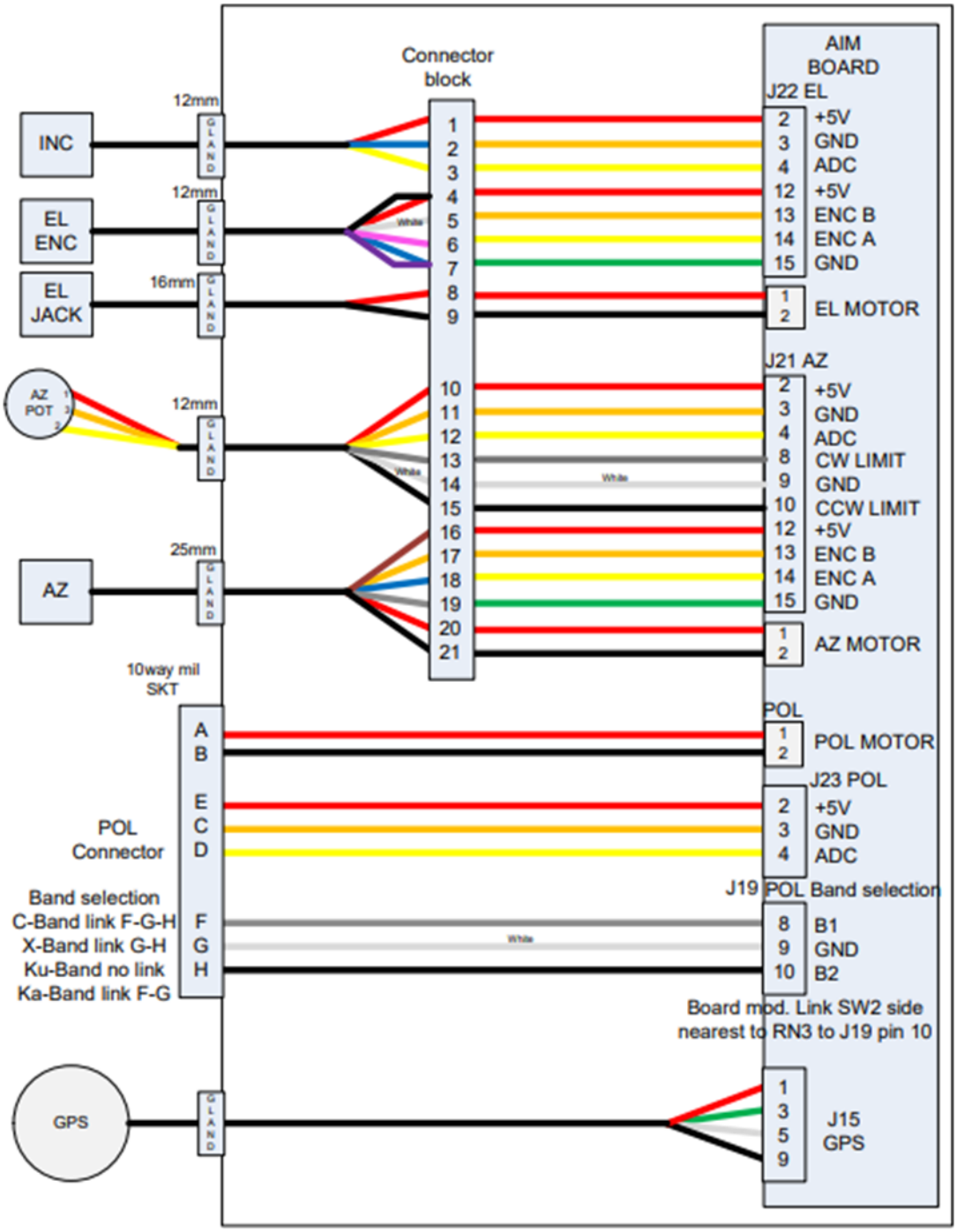
Inclinometer - Factory fitted and connected directly into AIM board. This solid state device give accurate feed back on the angle of the feed arm and is used to point the antenna to the satellite

Wiring Connections

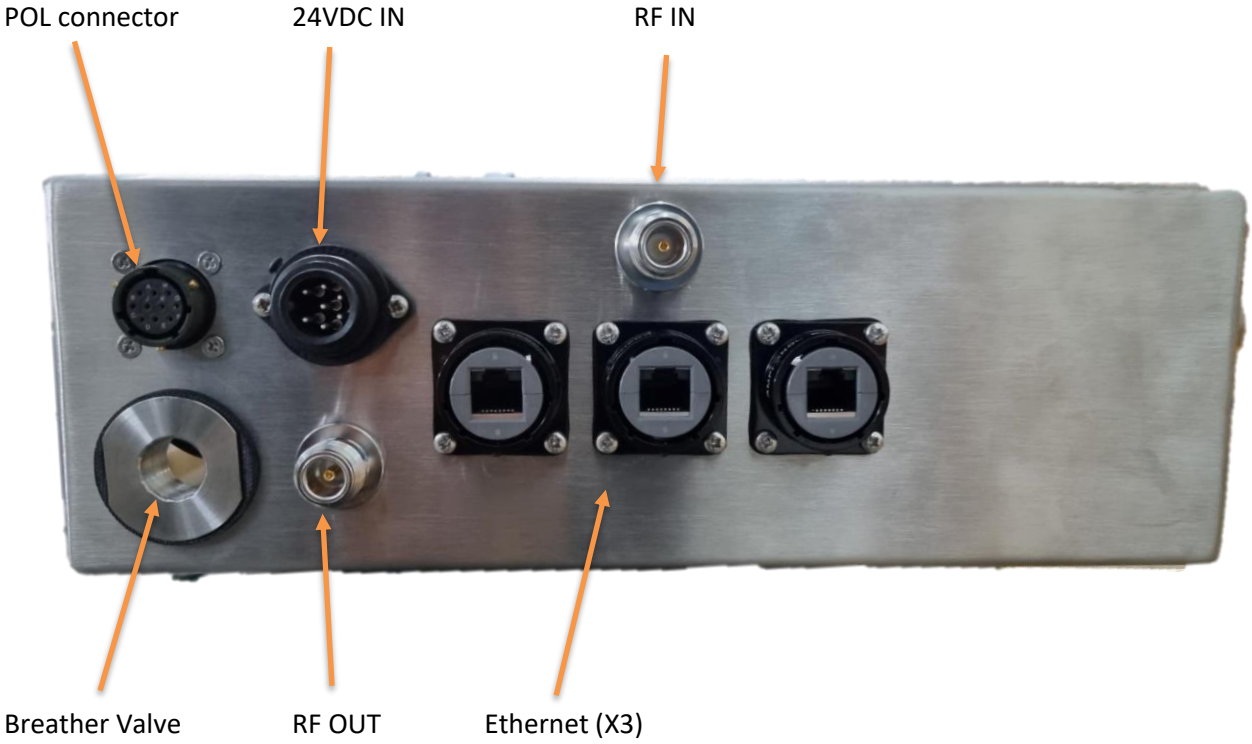
The feed back and motor drives and connected to from the Dish positioner to the AIM STATION control box through IP65 rated glands and are connected to the connection interface pins 1 to 21.



AIM Station feedback wiring
ISS A

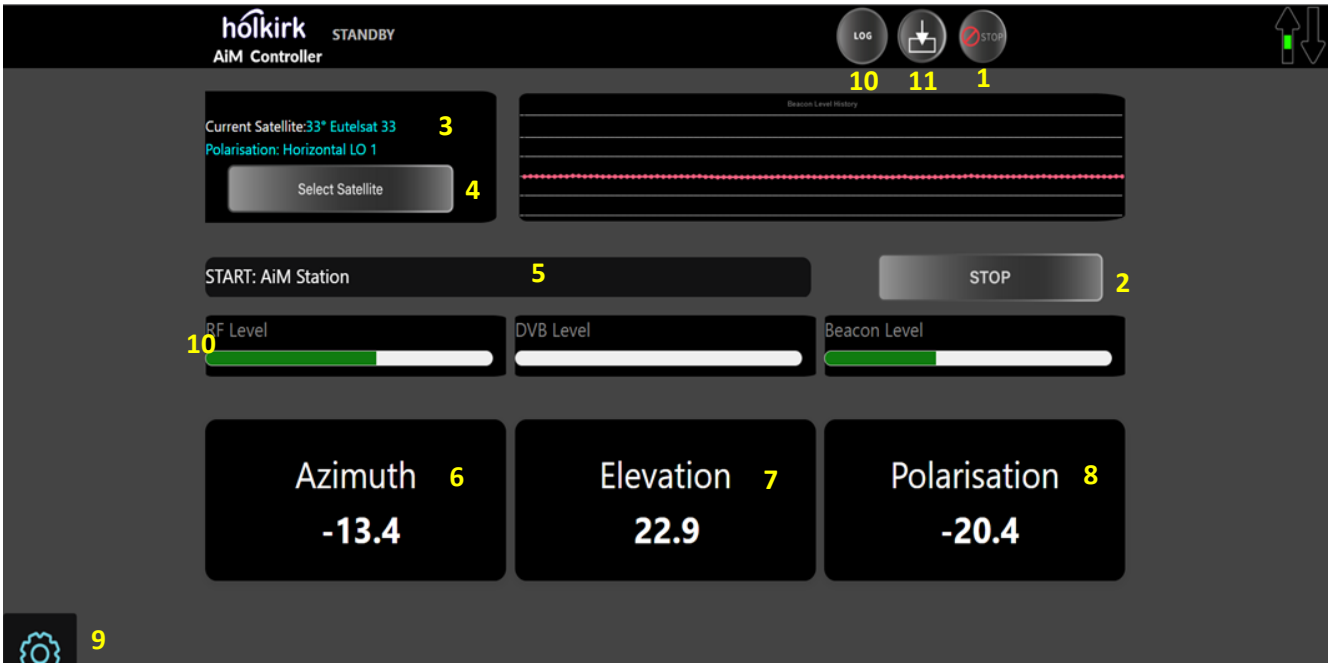


User Connections



AIM Graphical Interface (AGI)

HOME SCREEN



STOP (ref 1) (ref 2)
STOP is an emergency stop function. It will abort any operation that was in progress and return the system to the Standby condition.

Standby mode is a “no movement” mode, the antenna is not driven (the brakes where fitted will be applied) but the pointing angles and signal level are monitored and displayed.

Standby mode is entered in one of two ways :-

- selected by the operator (STOP)
- on the successful completion of another mode.

Current Satellite (ref 3)

This will display the current satellite the AIM-STATION is set to. You can select a different satellite from the Select Satellite drop down menu (ref 4)

Satellite Name and orbital slot

Actual POL and LO information for the system

Note: this is a read only field to select a new satellite (ref 4)

Select Satellite (ref 4)

Select Satellite

Pressing the Select Satellite button will open a separate drop-down menu for the entered satellite data base

Select the desired satellite from the drop-down list

Select the FINAL POL required

Select FINAL LNB Volts

Select FINAL LO

press **OK**

NOTE: the AIM-STATION will search, acquire and peak using the information in the satellite data base. The FINAL position will be set after AIM-STATION has identified the satellite

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NOTE: POSITIVE (+) is EAST and NEGATIVE (-) is WEST

NOTE: The satellite selected need to be in the satellite data base AND the data including LNB information needs to be correct in the INSTALLATION menu

WARNING : this will initiate the antenna to move

AIM PROGRESS LOG (ref 5)

Log lozenge displays the status and progress log of the AIM-STATION as the acquisition process executes, it will also display any fault codes. The AIM incorporates a number of continuous integrity checks and system monitoring functions. If any of these fail at any time an alarm will be raised.

Azimuth Readout (ref 6)
This is the real time read out of the Azimuth angle with respect to the forward-facing position of the antenna NOT actual heading reading.

Elevation Readout (ref 7)
This is the real time read out of the Elevation angle of the feed arm

Polarisation Readout (ref 8)
This is the real time read out of the polarisation (Linear only)

MENU (ref 9)
The menu button allows access to more features of the AIM controller 

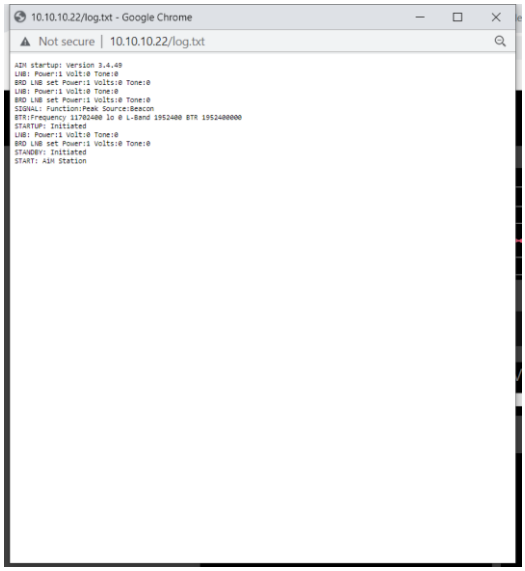
Receive power indicators (ref 10)

The RF level will give the broadband RF level and the DVB Level will give the C/N level of the first channel programmed into the database (with correct POL and LNB) during the search and the last DVB channel AIM checks once acquired.

If a beacon receiver is fitted the AGC output will also be displayed

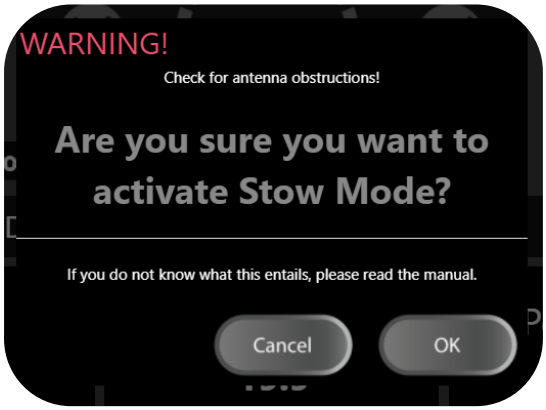
LOG function (ref 10)

This will generate a new window LOG file



STOW (ref 11)

STOW commands the antenna to move to a safe position AZ = 0º POL = 0º EL = 90º. Stow is the mode indicated while the antenna is being stowed following a Stow command.



NOTE : to mitigate the risk of an accidental press of the STOW button the AIM will prompt the user with an 'ARE YOU SURE' screen

If you wish to continue press OK

If you wish to abort press Cancel

MENU (ref 9)

Pressing this ICON will bring up a list of sub-screens

HOME (ref 9.1)

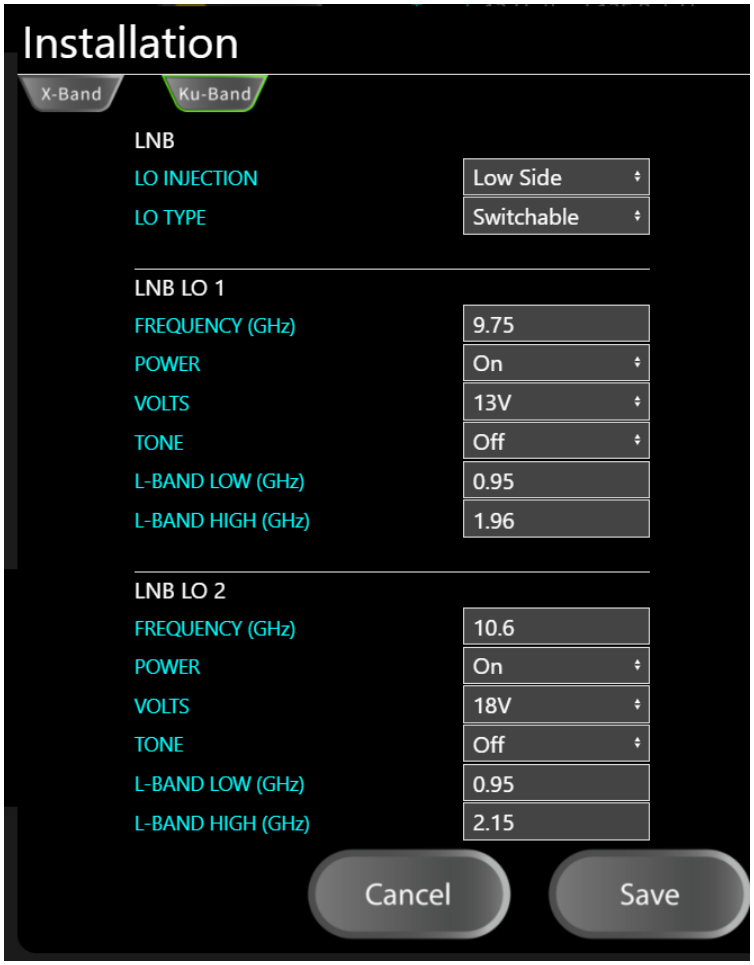
This will remove the menu structure and return the screen to the HOME view

INSTALLATION (ref 9.2)

The Installation screen is used to set up the LNB parameters. The AIM provides support for multiple LNB choices with both voltage and tone switching. AIM has the ability to set High or Low sided LO frequency.

AIM allows you to configure two separate LNB set ups – LO1 and LO2, these are called up in the Targeting menu for Reference, Target and Final satellites positions.

NOTE: With the multi-band option, the parameters of the feed frequency can be specified using the tabs at the top of the screen



High or Low side LNB (Ku/C-Band)

Select Switchable or FIXED

LNB LO
Power ON/OFF
Voltage 13V or 18V
22kHz ON or OFF
Start L-Band frequency
Stop L-Band frequency

LNB LO
Power ON/OFF
Voltage 13V or 18V
22kHz ON or OFF
Start L-Band frequency
Stop L-Band frequency

NOTE: press SAVE to confirm and save

NOTE: if you select LO TYPE FIXED then LO1 is used for all TARGET calculations

SATELLITES (ref 9.3)

The AIM has a 30-satellite data base that can be programmed with DVB carriers or beacon frequencies.

The main screen explained.

Satellite Data (ref 9.3.1)
The satellite data information is held in AIM as an index number. The index number can be advanced and scrolled via the index movement arrows (**ref 9.3.2**)

As the index number is advanced you will see the information changing corresponding to the satellite data that has been entered for that index number:-

INDEX NUMBER	1-30
Longitude	Satellite position
Name	Satellite Name
Pol Offset	Any pol skew off set as defined by the satellite operator (Linear only)

This is for reference only and to EDIT or ADD satellites to the database you must press the EDIT Icon (ref 9.3.4)

Satellite Search parameters (ref 9.3.3)
This set of parameters gives the user the indication of satellite search criteria and Beacon Receiver settings.

Sweep Source	The input source used for the initial search
Peak Source	Input method used to peak the antenna
ID Source	Input source used to verify the signal lock
Beacon Frequency (H)	Horizontal Beacon Frequency (RHCP)
Beacon Frequency (V)	Vertical Beacon Frequency (LHCP)
Beacon Attenuation	Beacon Attenuation level (dB)

Each source can be programmed to identify with any of the three input parameters (BEAC, RF, DVB)

This is for reference only and to EDIT or ADD satellites to the database you must press the EDIT Icon (ref 11.4.4)

Satellite Data (ref 9.3.4)

Satellite data entry screen

Orbital slot of satellite
Satellite NAME
POL off set (Linear only)

Sweep Source	The input source used for the initial search
Peak Source	Input method used to peak the antenna
ID Source	Input source used to verify the signal lock
Beacon Frequency (H)	Horizontal Beacon Frequency (RHCP)
Beacon Frequency (V)	Vertical Beacon Frequency (LHCP)
Beacon Attenuation	Beacon Attenuation level (dB)

NOTE: press SAVE to confirm and save

The AIM has the ability to acquire the satellite signal using three different input sources: -

BEAC – Input source from a AGC level e.g. Beacon Receiver

RF - Input source is derived from a broadband noise detector

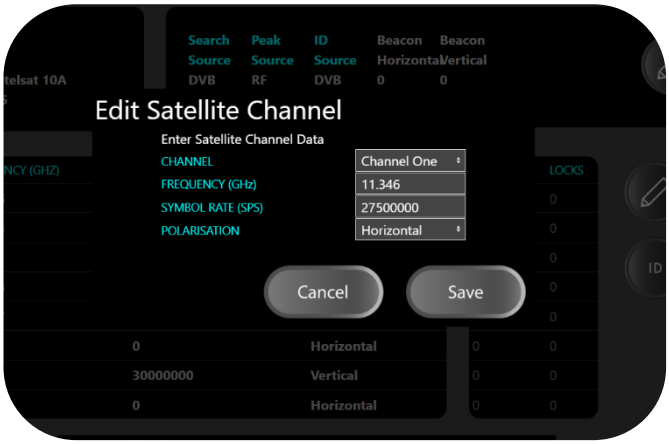
DVB - Input derived from the demodulated signal from the DVB channel set into the satellite database (NOT USED)

Satellite Channel Data (ref 9.3.5)

This is the display for the satellite data base. To add or edit the satellite data press the icon **(ref 9.3.6)**

Edit Satellite Data (ref 9.3.6)

The satellite data is displayed in this table. There are 8 slots to add details for DVB data (DVB-S2 and DVB-S)



CHANNEL	this is a single data point for transponder information
FREQUENCY SHF	Rx frequency **(in GHz)**
SYMBOL RATE	Symbol rate in symbols
POLARISATION	Horizontal or Vertical (RHCP or LHCP)

NOTE: press SAVE to confirm and save

Satellite ID (ref 9.3.7)

This table will show the ATTEMPTs and LOCKs for the satellite once the ID Icon (**ref 9.3.8**) is pressed.

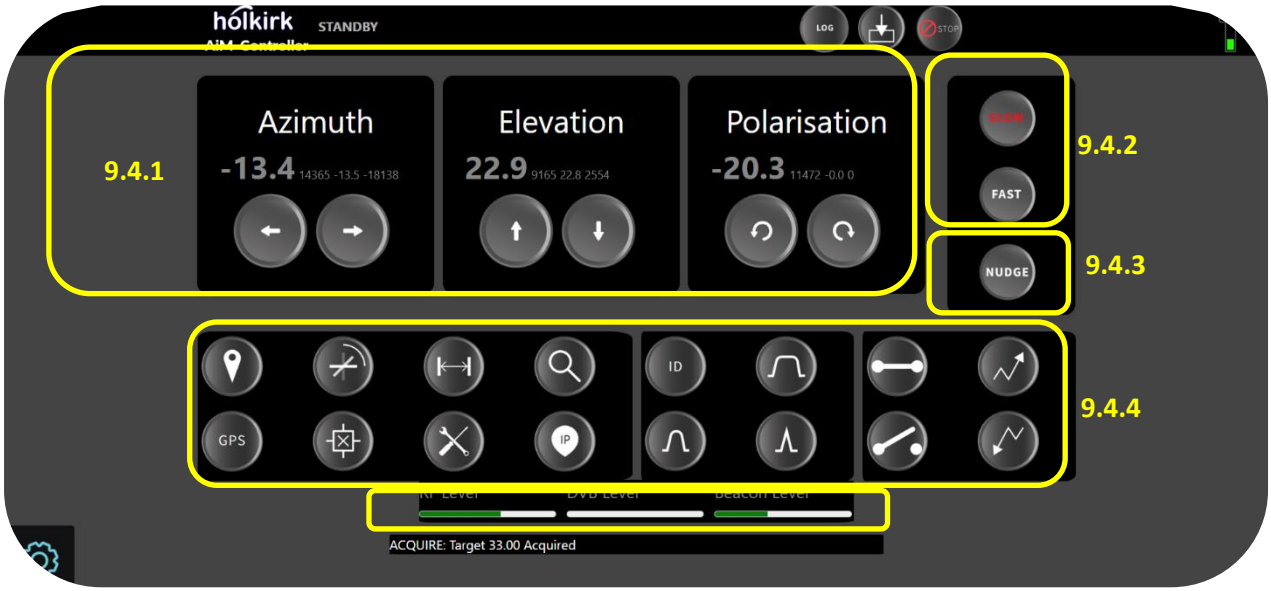
Once AIM has performed an ACQUIRE and successfully found the ID button will check the satellite database and show the matched DVB-S/S2 channels you have programmed into the AIM database.

This feature also works after a successful GOTOSAT command

ATTEMPTS	Once the AIM has deployed to a satellite the number of times an attempt has been made will be recorded
LOCKS	Once the AIM has deployed to a satellite the number of times a successful LOCK has been made will be recorded

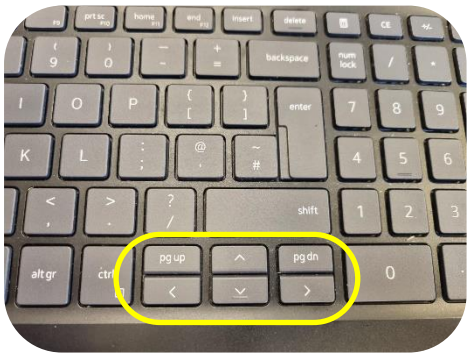
COMMISSIONING (ref 9.4)

The commissioning screen is used to set up the AIM and is featured with the JOG.



JOG FUNCTION (ref 9.4.1)

The AIM has a JOG function to move the antenna in all axes. Either use the mouse or touch screen to action a movement in AZIMUTH, ELEVATION or POLARISATION.



Also if a keyboard is attached to the USB port of the AIM controller then the UP, DOWN, LEFT, RIGHT keys can be used to control the antenna.

SPEED JOG FUNCTION (ref 9.4.2)

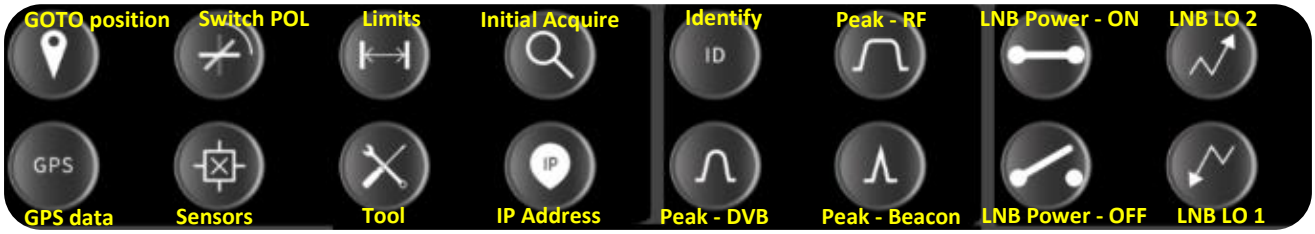
There is a FAST / SLOW function to increase / decrease motion speed. Click the speed indication button (FAST/SLOW) the speed function will be identified in RED

NUDGE JOG FUNCTION (ref 9.4.3)

When the NUDGE feature is selected the activation of the JOG buttons will command a timed movement that will equate to approx. 0.1º of angular movement.

Commissioning Features (ref 9.4.4)

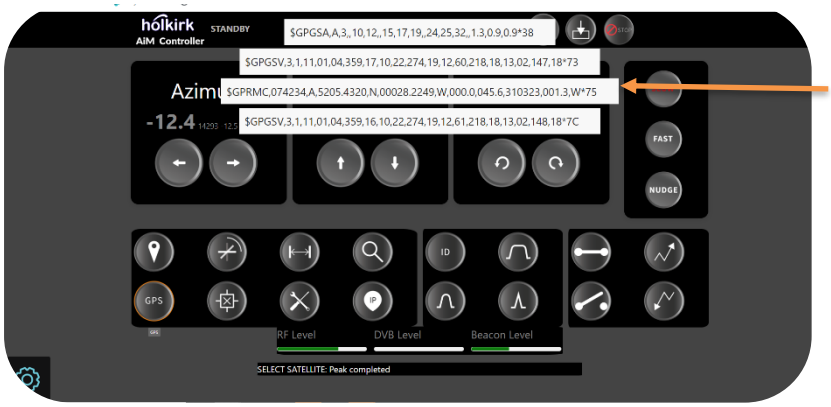
NOTE: there are some system performance changing commands in the commissioning menu so care must be taken.



GOTO POSITION Allows the user to enter an azimuth, elevation and POL position

GPS

Will report current RAW GPS data



GPS data

IP Address

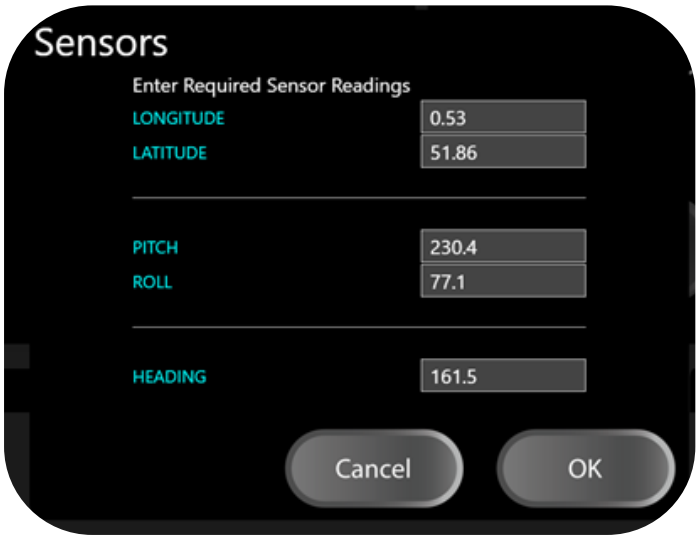
This will allow you to change the IP address of the AIM unit

Default IP ADDRESS

192.168.1.72

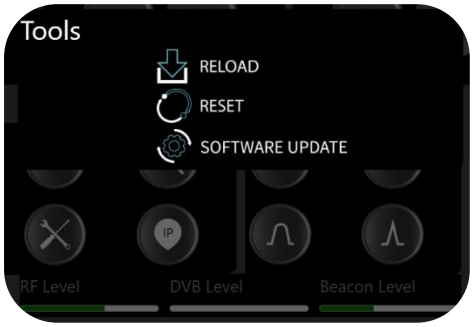
SENSOR DATA

Allows the user to enter the instrument data directly



TOOLS

Reloads the current data into AIM

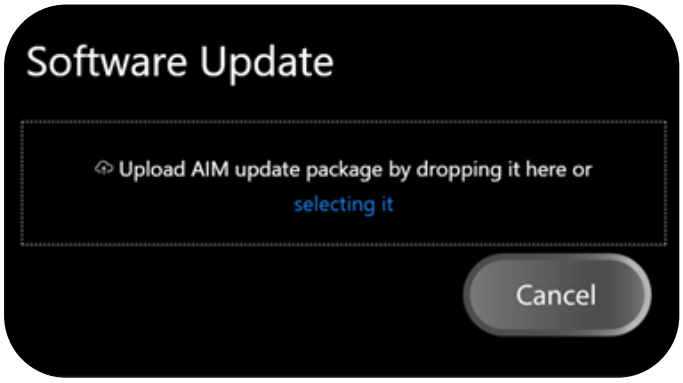


Loading change parameters from FTP

RESET – soft reset

Software upgrade

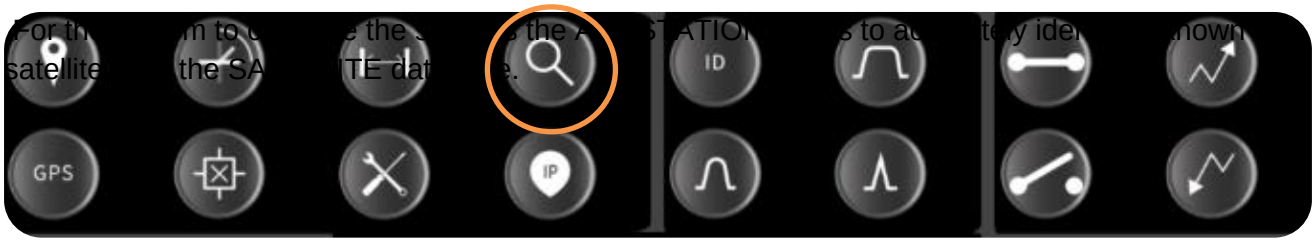
SOFTWARE UPDATE For updating the software installed on the AIM board

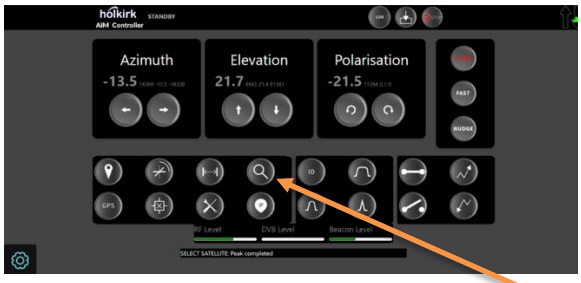


Either drag and drop the file into the box or browse to the file location. file will be .tgz e.g. AIM V3.4.22.tgz
After the file is selected the system will upload & reboot, this could take up to 1 minute

PEAK – DVB	Performs a peak using the DVB signal DO NOT USE
PEAK – RF	Performs a peak using the wide band RF noise detector
PEAK – BEACON	Performs a peak using the AGC from the beacon receiver
LNB POWER ON	Turns on the voltage to the LNB
LNB POWER OFF	Turns off the voltage to the LNB
LNB LO1	Selects the LO frequency set in the LNB set up - LO 1
LNB LO2	Selects the LO frequency set in the LNB set up - LO 2

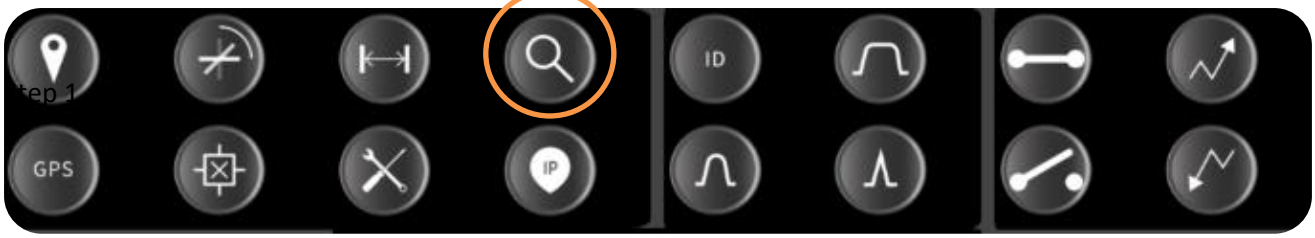
INITIAL ACQUIRE





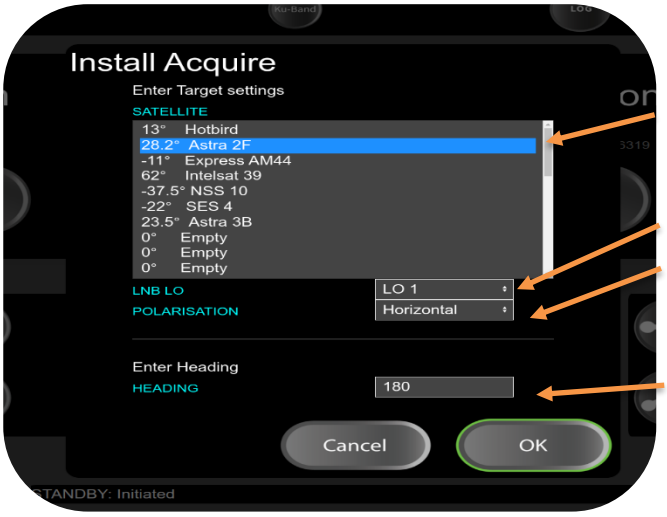
If the antenna is moving, the STOW button will change to a STOP button that will halt any automatic movement of the antenna and return the AIM controller to a STANDBY mode

From the commission screen select Initial acquire



Enter satellite LO and

Enter the heading of the antenna



Set the required satellite from drop down menu

Required LO

Required POL

Set the antenna heading use **a compass for heading**

PRESS **OK**

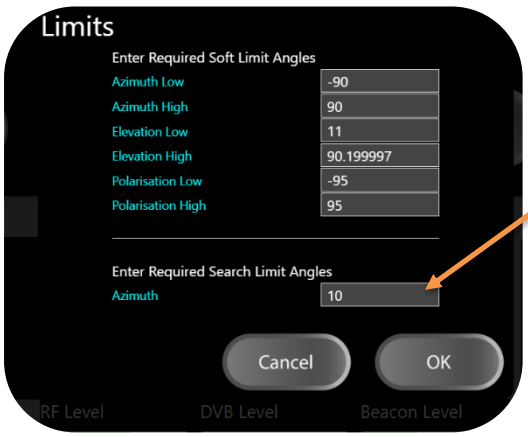
Stage 1 - The antenna will drive to a safe position

Elevation 25^{o}

Azimuth 0^{o}

POL 0^{o}

Stage 2 - Sets POL and starts to SEARCH (search window set in LIMITS - INITIAL ACQUIRE)



This might need to be increased

Stage 3 - Acquires the desired satellite

Appendix A – Alarm List

Alarm List

SOFT_LIMIT_AZ_RIGHT, SOFT_LIMIT_AZ_LEFT, SOFT_LIMIT_EL_UP, SOFT_LIMIT_EL_DOWN, SOFT_LIMIT_POL_CW, SOFT_LIMIT_POL_CCW

Antenna has been driven into the specified soft limit.

User should be able to Jog out of the limit.

Instruct a Standby command to clear the alarm. No auto-movements can be performed until the alarm is explicitly cleared.

HARD_LIMIT_AZ_RIGHT, HARD_LIMIT_AZ_LEFT, HARD_LIMIT_EL_UP, HARD_LIMIT_EL_DOWN, HARD_LIMIT_POL_CW, HARD_LIMIT_POL_CCW

Antenna has been driven into the specified hard limit. User should be able to Jog out of the limit.

Instruct a Standby command to clear the alarm. No auto-movements can be performed until the alarm is explicitly cleared.

NOT_DEPLOYED

Antenna has not successfully been deployed before attempting an auto movement. Alarm can be cleared with an explicit Standby. Unit will need to be successfully Deployed before any auto-movement can take place.

NO_LOCATION

No location information. Most likely because the GPS has not provided a valid position fix. Cleared with Standby.

NO_TILT

No tilt information. Most likely because the Pitch & Roll sensor has failed to provide valid data.

Cleared with an Explicit Standby.

NO_HEADING

No heading information. Most likely because the Magnetometer has failed to provide a valid heading.

Cleared with an Explicit Standby.

NO_REFERENCE_DATA

No visible satellite data for the specified Reference. Cleared with an explicit Standby.

NO_REFERENCE_ID

Failed to identify the Reference satellite. Cleared with an explicit Standby.

NO_TARGET_ID

Failed to identify the Target satellite. Cleared with an explicit Standby.

NOT_TARGET

The satellite the unit has landed on has been identified but is not the required Target. Cleared with an explicit Standby.

NO_POL_ROLL_READING

No pol roll data. Most likely because the Pol Roll device has failed to provide valid data. Cleared with an explicit Standby.