

# **USER MANUAL**

# AvL CONTROLLER WEB-BASED GRAPHICAL USER INTERFACE (GUI)



# **VERSION R11.9.1-0**

CONTENTS SUBJECT TO CHANGE REVISED: JUNE 2018



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# **SECTION 1: OVERVIEW**

# 1.1 WEB GUI SUMMARY

Designed for use with Google Chrome (© Google Inc.), AvL Technologies' Controller Web-Based Graphical User Interface (GUI) allows users to connect an assembled and powered antenna system to an orbiting satellite. Any computer and operating system should be able to operate the software in tandem with a terminal controller, so long as a compatible browser is used.

Users can create, edit, and upload profiles to the system. The interface displays myriad settings for reference, including elevation, azimuth and polarization meters. By providing the required profile, connecting to the antenna, and clicking the **ACQUIRE** button, terminal operators can acquire the target satellite within minutes. Manual acquisition and troubleshooting diagnostics are also available for fine-tuning.



FIGURE 1: WEB GUI WITH LAPTOP, ANTENNA AND SATELLITE

![](_page_4_Picture_7.jpeg)

# **SECTION 2: WEB GUI OPERATION**

# 2.1 INSTRUCTION STEPS

Prior to operating the controller software, ensure that the antenna system is properly assembled and ready for operation. Check for any obstructions that may interfere with operation while azimuth, elevation and polarization positions are adjusted. Instruction steps continue across subsections.

### 2.1.1 OPEN BROWSER AND ENTER CREDENTIALS

**1** Open the web browser and enter the IP address of the Web GUI (for example, 10.0.0.101).

![](_page_5_Picture_6.jpeg)

FIGURE 2: ENTER IP ADDRESS

**2.** Ensure that the point-to-point connection or network in use is encrypted and verifiably secure. There is no default HTTPS enabled for this application. If security has been reasonably verified, enter the login credentials. User names and passwords will be provided by the system integrator.

![](_page_5_Picture_9.jpeg)

FIGURE 3: ENTER LOGIN CREDENTIALS

![](_page_5_Picture_11.jpeg)

### 2.1.2 CONFIGURATION PAGE AND PROFILES

**3.** Click on **CONFIGURATION** at the top of the page. Go to **Profiles** on the left side of the **CONFIGURATION** page. Click on **Create**.

C O Not secure   10.0.0	0.103/#/configuration	-			
	Command Button STOP STOW	Antenna S Acquire Course Cours	Tatus: g For Next Command mmand:		
	Profiles	Profiles	Upload	Download	
1	Satellite List Advanced	Create			CLICK
	IP Config	Name Step Track 61.5W H	Edit Duplicate	Delete	
СLІСК		AvL Receiver	Edit Duplicate	Delete	
	Communication Status AAQ Azimuth Comm. Status	Elevation Comm. Status 💿 Polarization Comm	n Status 🌒 Nav Comm Status		

FIGURE 4: CLICK ON CONFIGURATION

**4.** A **Create Profile** dialog box appears. Enter a profile name in the **New Profile Name** input box (for example, **iDirect** or **AvL Receiver**). Click the green **Create** button.

Create Profile		X CLOSE
	Enter new a Profile Name	
	New Profile Name	
	Create	

FIGURE 5: CREATE PROFILE

![](_page_6_Picture_8.jpeg)

#### 2.1.3 TEMPLATE AND TARGET SETTINGS

**5.** The next screen should list the profile name above **Template**, **Target Settings** and other settings. If this page is not present, click **Profiles**, then **Edit** next to the name of the desired profile. Underneath the **Template** title, click the **Please Select a Template** drop-down box. Choose the template that matches the modem name.

AvL Receiver		
AVLReceiver Known Frequency		Ň
Target Settings View		
View Basic		
Basic		
Search for Satellite		
Search for Satellite		
Current Satellite Longitude	? Current Satellite Polarization	?
119.06 W	Horizontal	~
Current Satellite Inclination	? AvL Receiver Frequency	?
0.02	1485.0000	

Profiles	Profiles		Upload	Download
Satellite List	Create			٩
Advanced				
IP Config	Step Track 61.5W H	Edit D	uplicate	Delete
	iDirect	Edit D	uplicate	Delete
	AvL Receiver	Edit D	uplicate	Delete
			CLICK	)

FIGURE 6: SELECT TEMPLATE

![](_page_7_Picture_6.jpeg)

**6.** Adjust the values in the section underneath the **Template** section as needed to reflect the configuration of the system in use. The desired satellite can be chosen under **Search for Satellite**. The satellite's longitude value can be entered in the search box to snap to it.

**a.** By default, the view is set to **View Basic**; click the **Target Settings View** drop-down box and click **View Advanced** or **View All** to see more settings. To see an explanation of each title and setting box, hover the mouse pointer over the question mark.

Profiles	AvL Receiver			
Advanced	AVLReceiver Known Frequency			
IP Config	Target Settings View			
1				
CLICK	All AVL Receiver Frequency	?	AvL Receiver Frequency Scan Mode	?
	1485.0000 AvL Receiver Lock Threshold	?	Known Frequency AvL Receiver Scan Start Frequency	~ ?
	1200		962.000000	
	AvL Receiver Scan Step Frequency 4.000000	?	AvL Receiver Scan Stop Frequency	?
	Circular Polarization Left Hand Position	?	Circular Polarization Position	<b>?</b> ~
	Circular Polarization Right Hand Position	?	Coarse Peak Signal Source 1	~ ?
	Coarse Peak Signal Source 2	?	Coarse Peak Signal Source 3	?
	None		None	~

FIGURE 7: TARGET SETTINGS VIEW AND QUESTION MARKS

**b.** In the **Core Settings** section, enter any additional data, if applicable.

![](_page_8_Picture_6.jpeg)

Core Settings			
Basic iDirect Console Username	?	iDirect Console Password	?
root		iDirect	
iDirect Telnet Username	?	iDirect Telnet Password	?
admin		P@55w0rd!	

- FIGURE 8: CORE SETTINGS
- **C.** Click **Save**. A green bar will show at the top of the page that the profile has been created and/or updated.

7. The profiles that are created and listed in the **Profiles** section of the **CONFIGURATION** page can be edited, duplicated or deleted by pressing their respective buttons. Search for a profile by using the **Search for a Profile** search box. Uploading or downloading of profile templates is made possible by the **Upload** and **Download** buttons on the right side.

Profiles			Upload	Download
Create	Search for a Profile			۹
Name				
Step Track 61.5W H	Edit	Duplicate		Delete
iDirect	Edit	Duplicate		Delete
AvL Receiver	Edit	Duplicate		Delete

**FIGURE 9: PROFILES SECTION** 

![](_page_9_Picture_7.jpeg)

### 2.1.4 DASHBOARD PAGE AND CURRENT PROFILE

**8.** Click on **DASHBOARD** in the toolbar at the top of the page. This page features elevation, azimuth and polarization meters, along with an **Acquisition Progress** bar that will display how close the system is to acquisition. A status panel displays a range of information underneath the meters for reference.

**a.** Click the **Current Profile** drop-down box on the top-left side and click the desired profile. Click **Okay** when the dialog box appears.

![](_page_10_Picture_4.jpeg)

![](_page_10_Picture_5.jpeg)

![](_page_10_Picture_6.jpeg)

# : WEB GUI OPERATION : INSTRUCTION STEPS : DASHBOARD PAGE AND CURRENT PROFILE 8

Current ( GPS H 35.64 N 82.58 W	Current leading 0.000°	Heading Source NoCompass	AvL Receiver Control Current Profile: AvL Receiv Set Reference Level	rer Start Freq Scan	Cancel/	Clear	Feed Type Ku-LP	Signal Source AVLReceiver
GPS Location NAV RIOM GP	s		Connected Status Riom Status Scan Status Current Frequency (MH2) Set Frequency Lock Threahold Frequency Scan Mode Scan Start Frequency (MH2 Scan Stop Frequency (MH2 Scan Stop Frequency (MH2 Scan Stop Frequency (MH2	Connected Ready No Acquire in proce 1485.0000 1200 Known Frequer 962.000000 1438.000000 4.000000 ult Save	ss, waiting	0 0 0 0		
Communicatio	on Status Azimuth (	Comm. Status	Elevation Comm. Status	Polarization Comm. Statu	us 🔵 Nav.	Comm. Status		

#### FIGURE 10: DASHBOARD PAGE

![](_page_11_Picture_3.jpeg)

## 2.1.5 ACQUIRE SATELLITE

**9.** To acquire the satellite, proceed to click the green **ACQUIRE** button. Wait a moment as the system processes the request. In some systems, users must click **OK** in the **Mount Reflector and Select OK to Continue** dialog box (ensure that the reflector is mounted on the unit). Note that clicking **CANCEL** will reset the process.

![](_page_12_Figure_3.jpeg)

**10.** The controller will now make the necessary position adjustments to the elevation, azimuth and polarization settings as it tracks the marked satellite. Note that this process will take at least a few minutes. The **Acquisition Progress** bar will begin to fill as the unit achieves a signal lock.

![](_page_12_Figure_5.jpeg)

#### FIGURE 12: ACQUISITION PROGRESS BAR

**a.** At the top of the page, **Antenna Status** will show what actions the system is currently engaged in, or whether it is idle and waiting for a command. Below it, **Current Command** shows the name of the command in process.

![](_page_12_Picture_8.jpeg)

: WEB GUI OPERATION : INSTRUCTION STEPS : ACQUIRE SATELLITE  ${f 10}$ 

![](_page_13_Figure_1.jpeg)

FIGURE 13: ANTENNA STATUS AND CURRENT COMMAND

- **b.** Movement of the antenna during tracking can be observed by watching the meters adjust.
- **C.** The **GPS Location** drop-down box on the left allows for adjustment of the GPS settings for the system.

Current GPS 35.64 N 82.58 W	Current Heading 0.000 <sup>°</sup>	Heading Source NoCompass	AvL Receiver Control Current Profile: AvL Receiv Set Reference Level	ver Sta
GPS Locatio	n		Connected Status	
NAV RION	M GPS		Riom Status	
			Scan Status	
51			Current Frequency (MHz)	
			Set Frequency	
			Lock Threshold	
СПСК			Frequency Scan Mode	
			Scan Start Frequency (MHz	z)
			Scan Stop Frequency (MHz	:)
			Scan Step Size (MHz)	
			Defa	ult

FIGURE 14: DEGREE VALUES AND GPS SETTINGS

![](_page_13_Picture_7.jpeg)

**11.** Once the system achieves a signal lock, the **Acquisition Progress** bar will be green, and the percentage amount will read 100% on the right side. The **[Name of Modem] Signal** bar will display the signal strength (i.e. 1518), along with a **Locked** indicator on the right.

**a.** The **[Name of Modem] Signal** and **Acquisition Progress** bars can be viewed in the **Home** panel, which features a simplified panel arrangement if no settings need to be viewed or changed. Antenna pos3ition values are provided on the left.

Command Button	STOW	ACQUIRE	Antenna Status: Locked And Acquired Current Command:	
			STOP	
Current Profile AvL Receiver		Acquisition Progress		100%
Antenna Position Target EL 33.558* AZ 231.765* POL 39.670*	<ul> <li>World</li> <li>EL 33.512°</li> <li>AZ 231.765°</li> <li>POL 39.706°</li> </ul>	<ul> <li>Pedestal</li> <li>EL 30.053*</li> <li>Az 55.665*</li> <li>POL 40.114*</li> </ul>	Feed Type Ku-LP AVLReceiver Signal : 1524	Looked
Communication Status AAQ Azimuth	ı Comm. Status 🌘 Elevat	ion Comm. Status 🛛 🔵 Polar	ization Comm. Status 🔵 Nav. Comm. Status	

#### FIGURE 15: HOME PANEL

**b.** Each page also features a **Communication Status** bar at the bottom. This section of the page displays a green (connection established) or red (no connection) circle beside **AAQ**, **Azimuth Comm. Status**, **Elevation Comm. Status**, **Polarization Comm. Status**, and **Nav. Comm. Status**.

	Communication Status <ul> <li>AAQ</li> <li>Azimuth Comm. Status</li> </ul>	🕽 Elevation Comm. Status 🌑 Polarization Comm. Status 🌑 Nav. Comm. Status
--	--	--

FIGURE 16: COMMUNICATION STATUS BAR

![](_page_14_Picture_8.jpeg)

## 2.1.6 MANUAL JOGGING

**12.** If manual jogging and fine adjustment of the antenna position is required, click on **MANUAL JOG**. Like the **DASHBOARD** page, antenna position values for elevation, azimuth and polarization are displayed on meters and readouts.

![](_page_15_Figure_3.jpeg)

![](_page_15_Figure_4.jpeg)

- **a.** Underneath the meter readouts is a directional manual controller interface. Click the green **Disabled** button to activate the interface. It will switch to a red **Enabled** button. To move the antenna, click on the arrow that represents the desired direction of movement.
- **b.** The movement speed of the system can be adjusted between **Fast**, **Slow** and **Step**. The **Step** values can be adjusted manually; click on the step button, enter the desired value, and click **Submit**.

![](_page_15_Picture_7.jpeg)

- **C.** To input values directly, click on **Move to Location** and enter the appropriate values. Click on **Move** to move the system to these values. Note that the system must be homed prior to **Move** commands.
- **d.** To switch between clockwise and counter-clockwise polarization, click the appropriate button underneath **POL Adjust** on the bottom-left side. **POL Flip**, located on the opposite end, allows for **X-Pol / Cross-Pol** adjustment.
- **C.** REPEAK, HOME, and TRACK buttons are provided for further manual adjustments in the center of the panel layout. The **GPS Location** can be adjusted as well on the right side.

![](_page_16_Picture_4.jpeg)

FIGURE 18: MANUAL CONTROLLER INTERFACE

![](_page_16_Picture_6.jpeg)

### 2.1.7 DEBUGGING AND TROUBLESHOOTING

**13.** For debugging and troubleshooting, click on **DIAGNOSTICS** in the toolbar at the top of the page.

HOME DASH	BOARD	MANUAL JOG	CONFIGUI	RATION <b>diagno</b> s	STICS
Debug/Log Options					
System Lon					
Troubleshooting				Additi	onal Sensors
Elevation Variables		Azimuth Variables		Polarization Variables	
Elevation Motor Position	42.879	Azimuth Motor Position	-27.933	Feed Type	Ku-LP
Elevation Motor Raw Position	266970	Azimuth Motor Raw Position	-189280	Polarization Motor Position	-21.732
Elevation Motor Abs Postion	0.000	Azimuth Motor Abs Postion	0.000	Polarization Motor Raw Position	-1651632
Elevation Motor Raw Abs Postion	0	Azimuth Motor Raw Abs Postion	0	Polarization Motor Abs Postion	0.000
Elevation Motor Raw Power	0	Azimuth Motor Raw Power	0	Polarization Motor Raw Power	0
Elevation Inc	43.030	Azimuth Pot	-27.934	Polarization Pot	-21.678
Elevation Down Limit Switch	0	Azimuth Pot Voltage Index	1796.000	Polarization Pot Voltage Index	1627.000
Elevation Up Limit Switch	0	Azunuth Stow	0		
Elevation Stow	0				
Additional Sensors					
					1

#### FIGURE 19: DIAGNOSTICS

**a.** Debugging: Under Debug/Log Options, click System Log. This will bring up a box that allows for monitoring of system activity. To begin said monitoring, click Capture. Click Save to File when done to save the log to a .txt file. Click Clear to clear the log or click Stop to stop the debug logger.

![](_page_17_Picture_6.jpeg)

# : Web GUI OPERATION : INSTRUCTION STEPS : DEBUGGING AND TROUBLESHOOTING 15

System Log				2	CLOSE
Save to File	Capture	Clear	Stop		
1528464585: ALM: Modu	le Message: iDirect Modem: e	error in socket type decide	2		*
1528464585: ALM: Modu	le Message: iDirect Modem: \$	Starting Local Processing			
1528464582: ALM: Modu	le Message: iDirect Modem: e	error in socket type decide	2		
1528464582: ALM: Modu	le Message: iDirect Modem: \$	Starting Local Processing			
2	2 000 Azimuth Dat		56 210	Polarization Bot	-

- FIGURE 20: DEBUGGING
- **D. Troubleshooting:** Data values for elevation, azimuth and polarization variables can be viewed in the tables within the **Troubleshooting** section. Click the **Additional Sensors** on the right to view more values by clicking the desired variable. The new value will appear underneath the **Additional Sensors** title, which is below the **Troubleshooting** section.

Troubleshooting				Additio	onal Sensors
Elevation Variables		Azimuth Variables		Polarization Variables	
Elevation Motor Position	29.939	Azimuth Motor Position	55.785	Feed Type	Ku-LP
Elevation Motor Raw Position	0 000	Azimuth Motor Raw Position	378002	Polarization Motor Position	-21.732
Elevation Motor Raw Abs Postion	0	Azimuth Motor Raw Abs Postion	0	Polarization Motor Abs Postion	0.000
Elevation Motor Raw Power	0	Azimuth Motor Raw Power	0	Polarization Motor Raw Power	0
Elevation Inc	33.800	Azimuth Pot	56.310	Polarization Pot	40.168
Elevation Down Limit Switch	0	Azimuth Pot Voltage Index	2556.000	Polarization Pot Voltage Index	2794.000
Elevation Up Limit Switch	0	Azunuth Stow	0		
Elevation Stow	0				
Additional Sensors					
Controller Time Offset 576510	550.290424	Controller Date	2018-06-08		

FIGURE 21: TROUBLESHOOTING

![](_page_18_Picture_6.jpeg)

**C.** Alarm list: To view any active alarms (errors, warnings, and/or malfunctions in operation), navigate to the bottom-left corner of the page to the Alarm List section.

Alarm List       ALARM NAME     STATUS       iDirect     Image: Contemportation of the status of the stat
ALARM NAME STATUS
iDirect 🥹

FIGURE 22: ALARM LIST

**d.** On the bottom-right side of the page, **AAQ Version Info** provides version information for the software. To update the system, click **Update Software** and load the appropriate .sup file.

![](_page_19_Picture_5.jpeg)

AAQ Version Info			
AAQ.rom	ROM File	R11.9.4	0
AAQ.conf	Config File	14735	
Azimuth RIOM	RIOM		444
Elevation RIOM	RIOM		444
Polarization RIOM	RIOM		432
Navigation RIOM	RIOM		448
Digital IO RIOM	RIOM		433
AvL Receiver RIOM	RIOM		275
RSL1	Modem	R11.9.0	0
WebsocketServer	Utility	R11.9.0	0
iDirect	Modem	R11.9.0	0
AVLReceiver	Modem	R11.9.1	0
Lindata Coftwara			
opuale software			

#### **FIGURE 23: AAQ VERSION INFO**

![](_page_20_Picture_3.jpeg)

## 2.1.8 STOP TRACKING

**14.** To stop tracking, click the red **STOP** button at the top of any page. To bring the unit to the stow position, click the red **STOW** button. To log out of the Web GUI, click **LOGOUT** in the toolbar at the top of any page.

Command Button			<b>Antenna Status</b> : Idle Waiting For Next Comman	nd
STOP	STOW	ACQUIRE	Current Command: STOP	
AVLTECHNOLOGIES	HOME DASHBOARD N	MANUAL JOG CONFIGURATION	DIAGNOSTICS	LOGOUT

### FIGURE 24: STOP, STOW AND LOG OUT OF SYSTEM

![](_page_21_Picture_5.jpeg)

## 2.1.9 TECHNICAL SUPPORT

**15.** For further support, call AvL Technologies at **1-828-250-9950**.

![](_page_22_Picture_3.jpeg)