



Antenna Line Device (ALD) Control Software

V2.0

User Guide

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1 Introduction

The Antenna Line Device Control (ALDC) system is a portable primary controller used for configuration & control of AISG v1.1 and/or AISG v2.0 devices at a cell site. The system consists of a Portable Control Unit (PCU), data cables, a 24v power supply and ALDC software which is installed on a user's laptop computer. This system is an upgrade to Jaybeam's previous PCU-2 system which was only able to control AISGv1.1 devices.

Hardware	Software	Serial Interface	AISG Version
PCU-2 (previous version)	ALDC v1.x	RS232 serial port	AISG v1.1 (only)
PCU-4	ALDC v2.x	USB 1.1 or 2.0	AISG v1.1 and v2.0

1.1 Product Functions

The major functions provided in the ALDC system include:

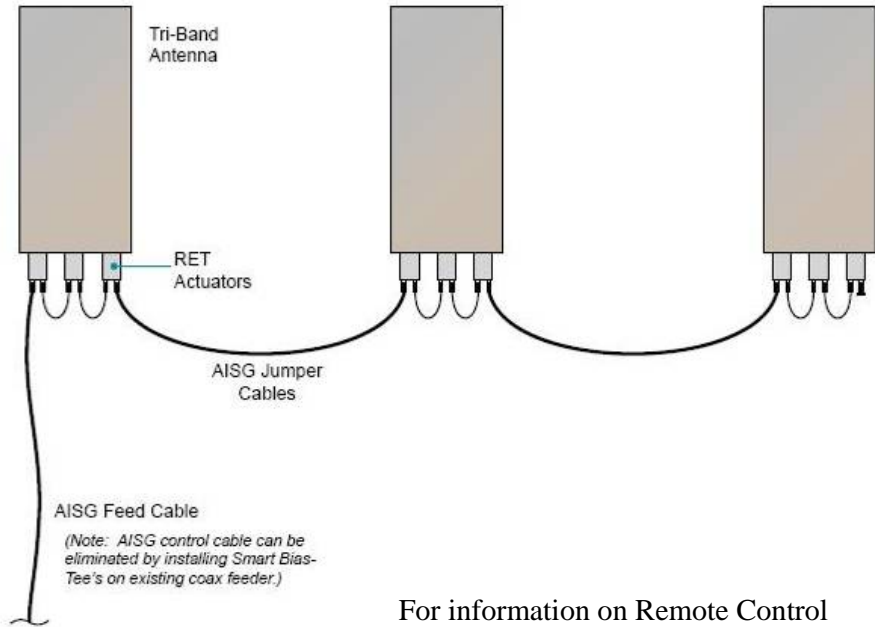
- Antenna remote electrical tilt / remote azimuth steering adjustment:
 - a.) Antenna electrical tilt setting
 - b.) Antenna azimuth steering setting
 - c.) Antenna Self Test and Reset
 - d.) Maintenance of the antenna installation data

- AISG TMA adjustment:
 - a.) TMA gain setting
 - b.) TMA mode setting
 - c.) TMA Self Test and Reset
 - d.) Maintenance of the TMA installation data

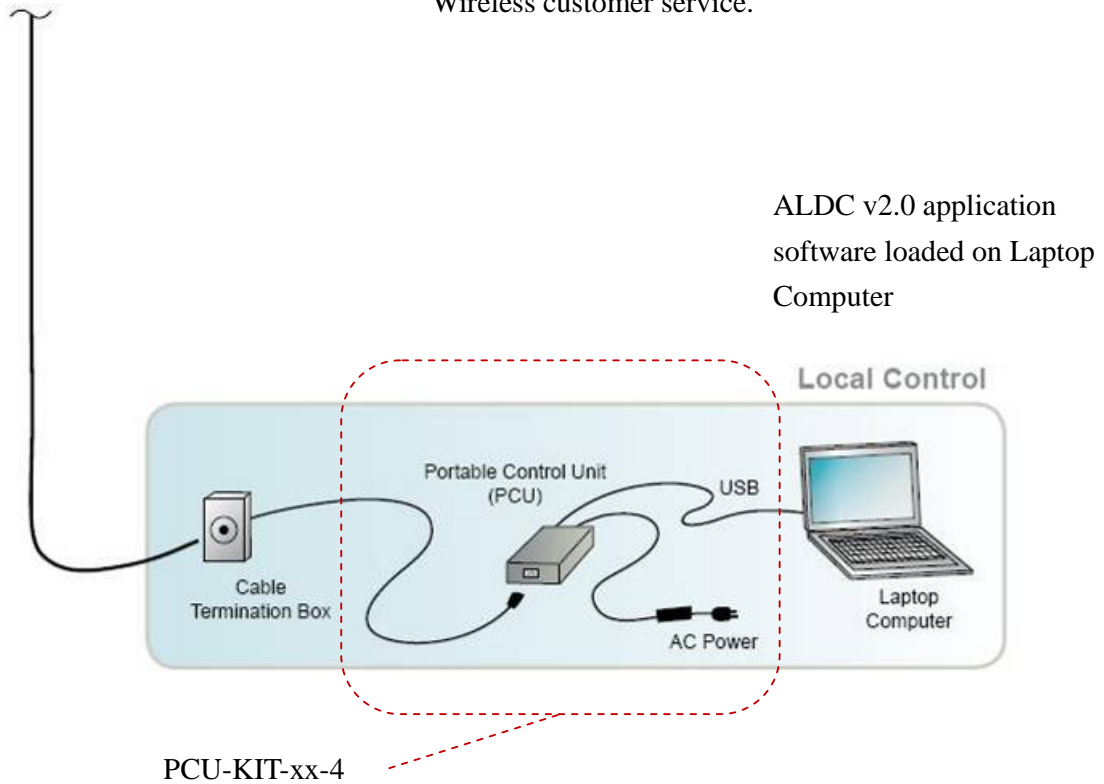
- Device calibration

- Device configuration

1.2 Product Components:



For information on Remote Control systems please contact Jaybeam Wireless customer service.



2 Installation

2.1 Hardware Configuration

The PCU-4 (USB to RS485 protocol adapter) has an AISG female connector, four LED indicators, a USB port and a power port. The AISG female port is used to connect the PCU-4 to AISG device(s) via a control cable. The USB port is used to connect the PCU-4 to a laptop computer for data communication. The LED indicators show the condition of the PCU-4 adapter.



<u>LED:</u>	<u>Purpose:</u>
12V Indicator:	Will light up when 12V DC supply is turn on.
Power Indicator:	Will light up when the power is connected.
TX and RX Indicator:	Will blink when there is AISG data communication.

2.2 Hardware Setup

1. Connect the USB port on the PCU-4 to the laptop computer.
2. Connect the 24V DC power supply to the power port on the PCU-4.
3. Connect AISG female port on the PCU-4 to the AISG control cable at the site.

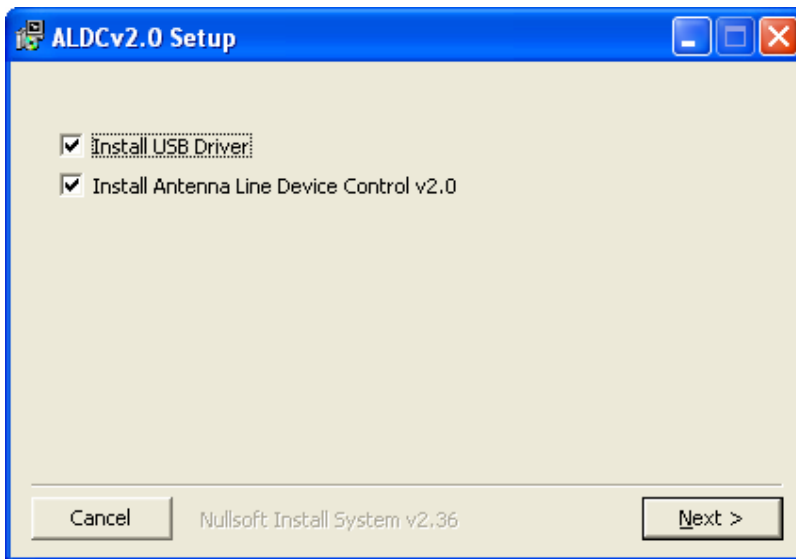
2.3 System Requirements

1. Windows XP/Vista
2. CD ROM drive
3. USB port (USB 1.1 or USB 2.0)
4. Minimum screen resolution of 800 x 480. Screen resolution of 1024 x 768 is recommended.

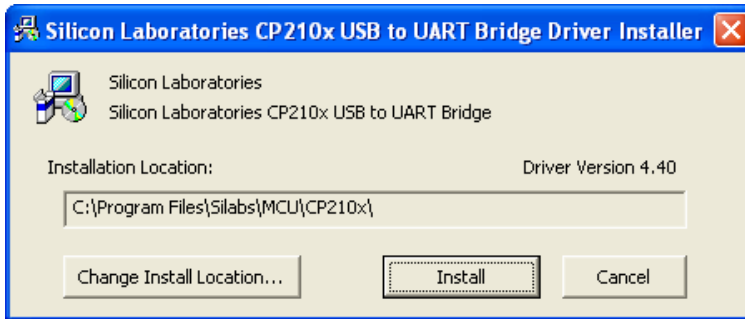
2.4 Software Installation

The ALDC v2.0 application software and USB driver are included on the CD that is supplied with the PCU kit. The CD should automatically open an HTML page to guide you through software installation. If the Software does not automatically run, explore the CD and double click on the file named *autorun.exe*.

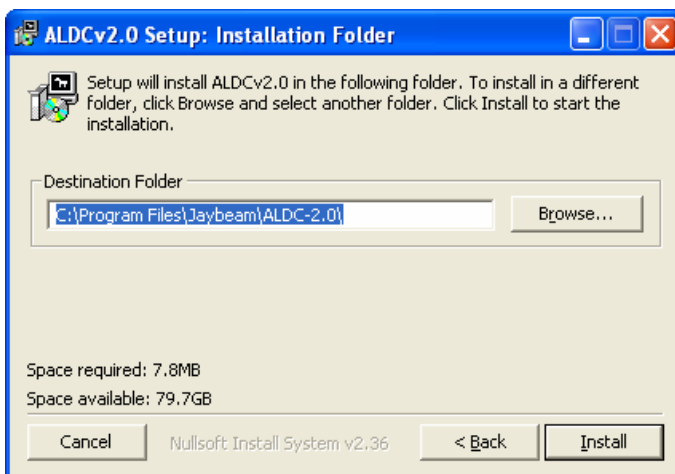
Select the [INSTALL] button and follow the on-screen prompts to install both the application software and the USB driver software.



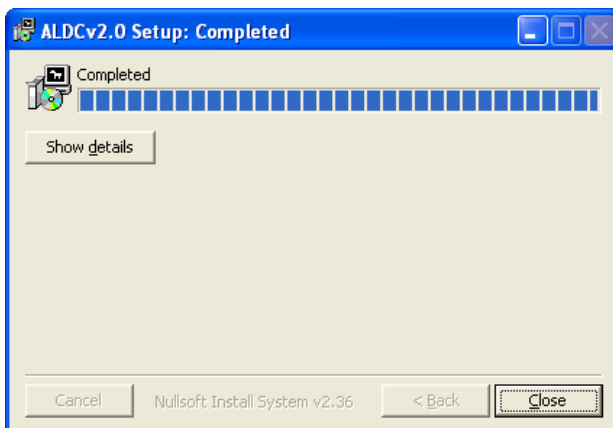
Select [Next] to install both the USB Driver and the ALDC software.



Accept the suggested USB Driver installation location or select a different location. Click [Install] to complete installation of the USB Driver software.



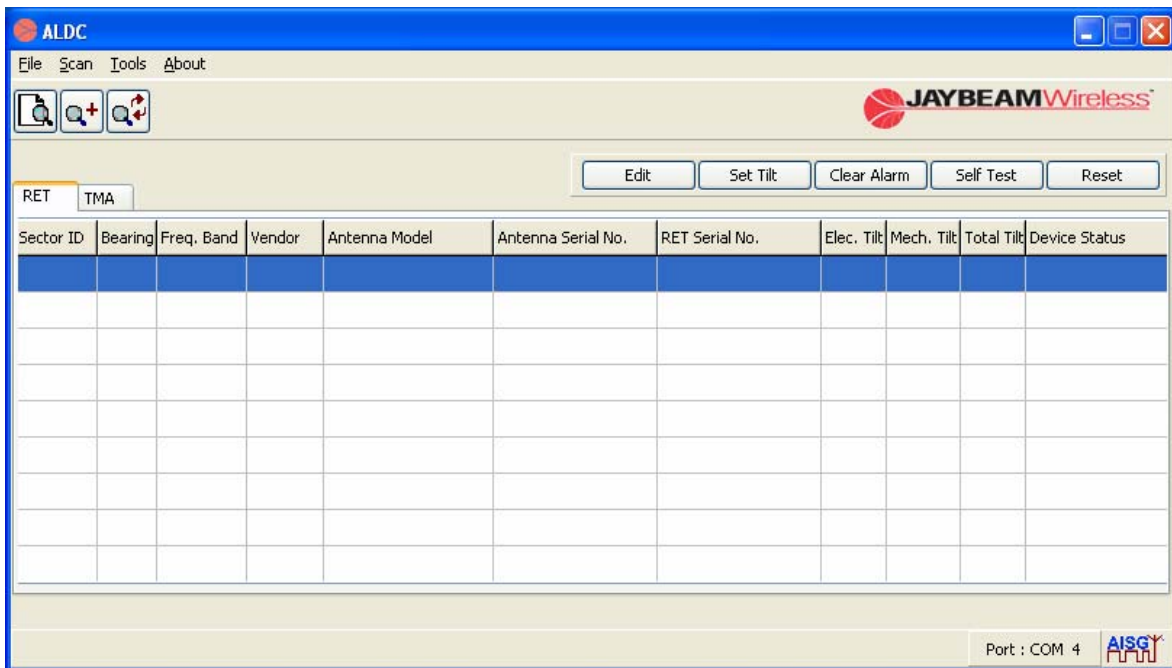
Accept the suggested application software installation location or select a different location. Click [Install] to complete installation of the ALDC software.



Select [Close] to complete the process.

3 Launching the ALDC System

If you have installed the “Start Menu Shortcuts” option, you can go to “Start > Programs > ALDC > ALDC v2.0” to launch the application software. You can also go to the installed program directory to run *ALDC-2.0.exe* to start the application. The following application window will appear.



Each time the ALDC software is launched the window will initially display no connected AISG devices. On the bottom-right side, you’ll see the COM port number the system is using. If the number is 0, the system is not properly connected. Either the USB cable is not connected with the adapter or the USB connection is not detected by windows system. In the latter case, please reconnect the cable and launch the system again.

Click the [About] menu to determine the software version that was loaded with your installation CD.



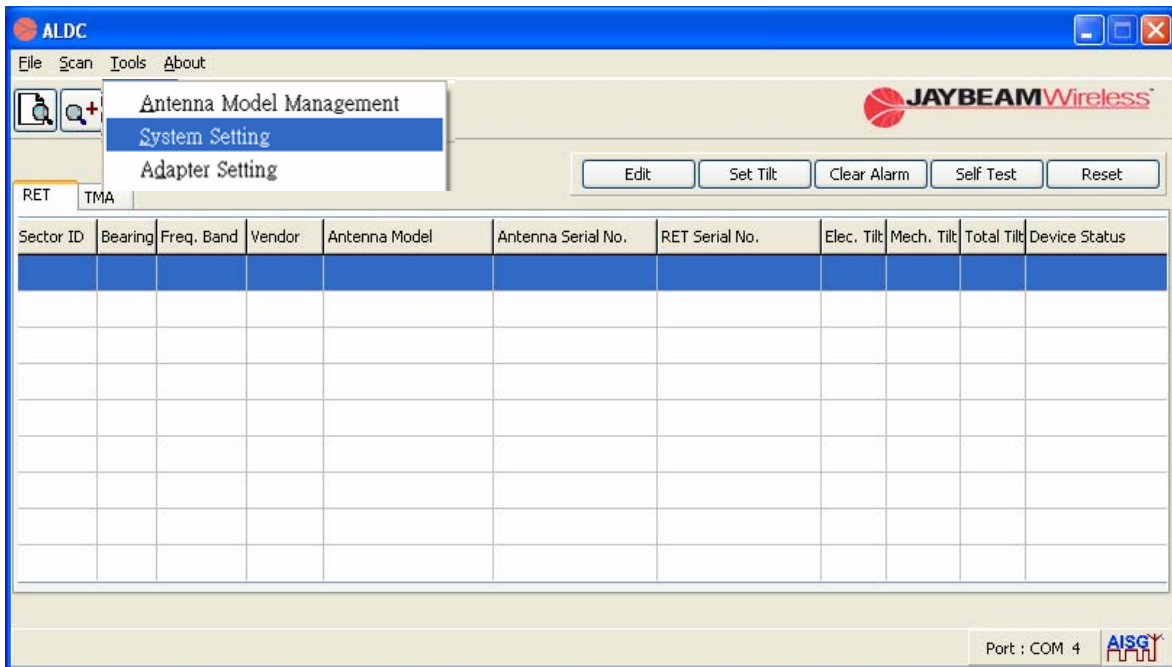
4 System Configuration

In this section, we will describe scan settings, power supply settings and the default values.

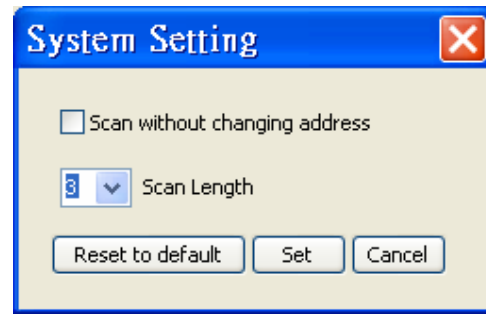
4.1 System Settings

The system settings determine how many bit-mask bytes will be used to scan the device and whether or not the scanning process will automatically assign bus addresses to devices found during a scan operation. The default settings are [scan length] = 3 and that the scanning process will automatically assign bus addresses to the connected AISG devices. It is rare that a user should have to change these default settings.

To change these settings, click [Tools] on the menu bar, then click [System Setting].



[Scan without changing address] is used to preserve the bus address of an AISG 1.1 device for trouble shooting. This setting is not applicable to AISG 2.0 devices. The default setting is “not-checked” meaning that the system automatically assigns bus addresses to devices found during a scan operation.

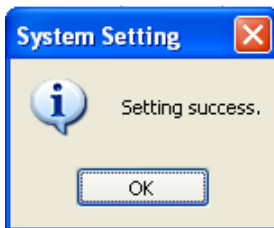


The [Scan Length] value is used to set the number of digits in the device serial number (from the far right) that the scan routine looks at during a scan operation. In order to reduce scan time, the default setting is 3 digits. If multiple devices have serial numbers with the same last 3 digits, the Scan Length value will need to be increased.

Note: Increasing the [Scan Length] value will increase the time required to complete a scan.

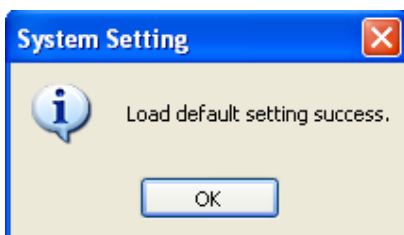
Click the [Set] button to apply the changes made to the system.

The following message will notify you that changes have been applied successfully. Click the [OK] button to close the message window.



Click the [Reset to default] button to reset these two settings back to the default value.

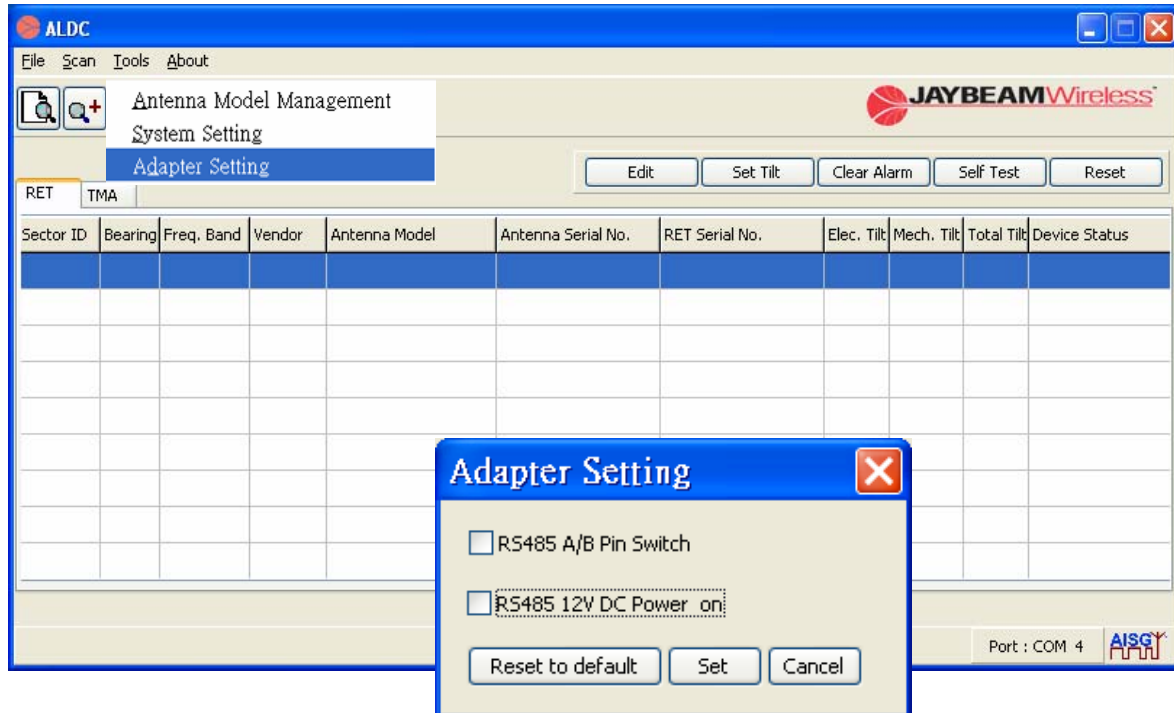
The following message will notify you that the default settings have been loaded successfully. Click the [OK] button to close the message window and return back to the [System Setting] window.



4.2 Adapter Settings

The adapter settings determine whether or not 12V DC is applied to pin 1 on of the AISG connector and determine the RS485 A/B pin settings for the adapter. Once again, it is rare that a user should ever have to adjust these values.

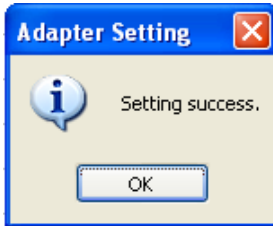
To change the adapter settings, click [Tools] on the menu bar, then click [Adapter Setting].



Column Name	Constraint / Limit
RS485 A/B Pin Switch	Check the checkbox to switch the RS485 A/B pin of the adapter. Note: The RS485 A/B pin polarity specification was not uniformly interpreted by vendors producing AISG compliant hardware. To solve this problem these vendors offered a short section of AISG cable to mechanically change the RS485 A/B pin polarity. The Jaybeam PCU-4 provides the ability to electronically switch the pin polarity when required.
RS485 12V Power on	12V DC is turned on if the checkbox is checked Note: The PCU-4 <u>always</u> applies 24V DC to pin 6. If his box is checked, 12V DC will also be applied to pin 1.

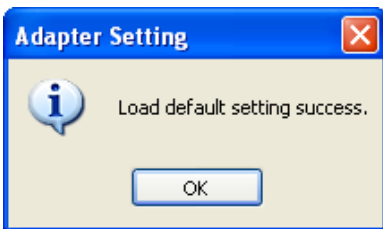
Click the [Set] button to apply changes made into the system.

The following message will notify you that changes have been applied successfully. Click the [OK] button to close the message window.



Click [Reset to default] to reset these two values back to the default value.


The following message will notify you that the default settings have loaded successfully. Click the [OK] button to close the message window and return back to the [Adapter Setting] window.

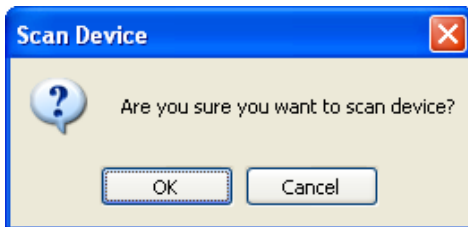


5 Using the ALDC System

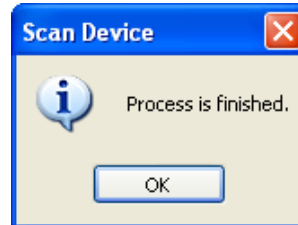
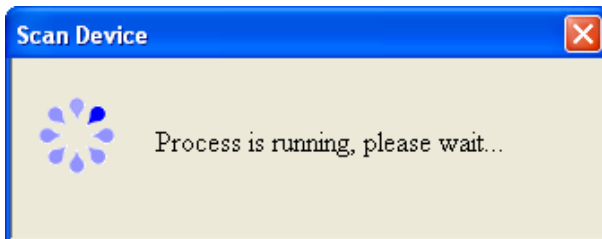
5.1 Device Scan

The scan function will interrogate the AISG bus and display all AISG devices found. RET device types will display on the RET panel and TMA device types will display on the TMA panel.

To initiate the scan function, click the scan device icon  on the tool bar or click [Scan Device] from in the [Scan] menu bar. The following verification screen will appear.

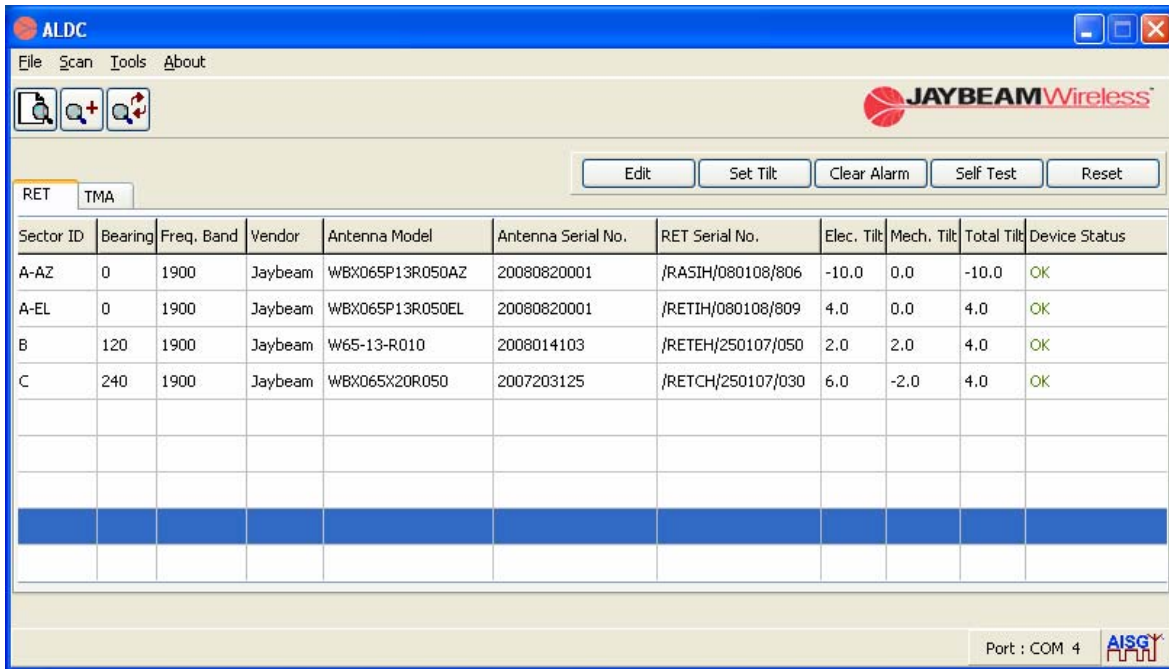


Click the [OK] button to initiate the process.



During the scan process the TX and RX LED's should flash on and off to indicate data transmission in both directions. If the TX LED does not illuminate, check all power and cable connections between the PCU-4 and the laptop computer. If the RX LED does not illuminate, check the cable connections between the PCU-4 and the AISG devices. Also check to make sure that the RS485 A/B switch is set correctly. (See section 4.2)

5.1.1 Scan results – RET



Sector ID	Bearing	Freq. Band	Vendor	Antenna Model	Antenna Serial No.	RET Serial No.	Elec. Tilt	Mech. Tilt	Total Tilt	Device Status
A-AZ	0	1900	Jaybeam	WBX065P13R050AZ	20080820001	/RASIH/080108/806	-10.0	0.0	-10.0	OK
A-EL	0	1900	Jaybeam	WBX065P13R050EL	20080820001	/RETIH/080108/809	4.0	0.0	4.0	OK
B	120	1900	Jaybeam	W65-13-R010	2008014103	/RETEH/250107/050	2.0	2.0	4.0	OK
C	240	1900	Jaybeam	WBX065X20R050	2007203125	/RETEH/250107/030	6.0	-2.0	4.0	OK

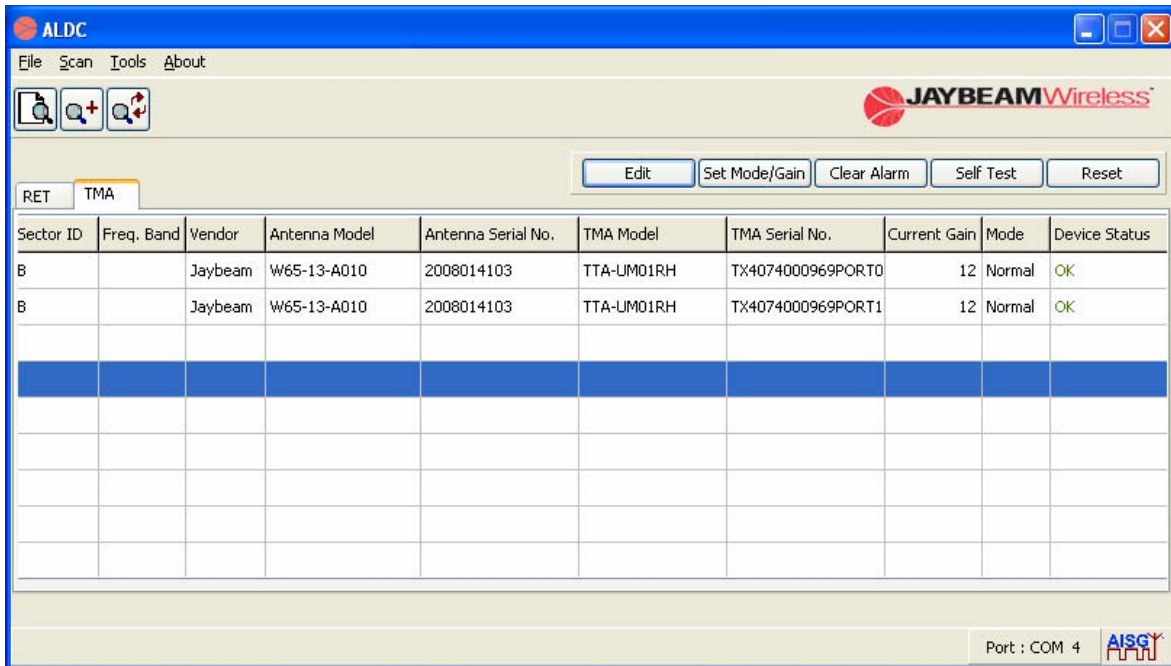
The following information is displayed for all RET devices found. The RET devices will automatically sort by Sector ID.

RET Device

Column Name	Description / Constraint
Sector ID	Sector ID
Bearing	Antenna bearing in the range of 0-359 degree
Freq. Band	Current applied frequency band(s)
Vender	Vender name
Antenna Model	Antenna model name.
Antenna Serial No.	Antenna serial number
RET Serial No.	AISG RET device serial number
Elec. Tilt	Current electrical tilt value
Mech. Tilt	Current mechanical tilt value
Total Tilt	Sum of mechanical tilt and electrical tilt
Device Status	It can be "OK" or device alarm messages

5.1.2 Scan results - TMA

Click on the TMA tab to view the TMA devices found during the scan operation.




The following information is displayed for all TMA devices found. The TMA devices will automatically sort by Sector ID.

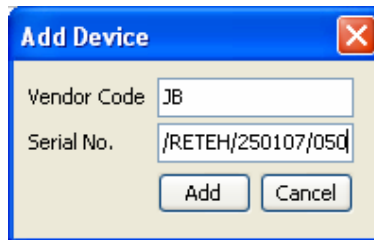
TMA Device

Column Name	Description / Constraint
Sector ID	Sector ID
Freq. Band	Current applied frequency band(s)
Vender	Vender name
Antenna Model	Antenna model name.
Antenna Serial No.	Antenna serial number
TMA Model	TMA model name
TMA Serial No.	TMA serial number
Current Gain	Current gain value
Mode	TMA gain mode can be "Bypass" or "Normal".
Device Status	It can be "OK" or device alarm messages.

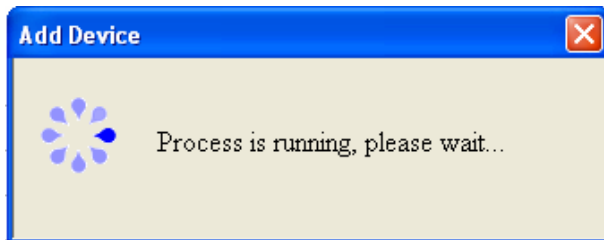
5.2 Add a Device

The Add a Device function is used to add a specific AISG device to the ALDC display list if that device cannot be found through the normal scan process.

To initiate the add device function click the add device icon  on the tool bar or click [Add Device] from the [Scan] menu bar.



Enter the [Serial No.] of the device you would like to add. The [Vendor Code] is optional. Click the [Add] button to initiate the process.



The above message will notify you when the process is finished. The device list will update to display the newly added device. Click the [OK] button to close the message window.

Note:

- The serial number field is case sensitive!
- According to the AISG standard each device must be assigned a “Unique ID Number.” The “Unique ID” is defined as the Vendor Code followed by a device Serial Number. Jaybeam Wireless displays this “Unique ID” on each RET product shipped. In the example shown to the right:

Unique ID = JB/RETEH/080508/114


Vendor Code = JB

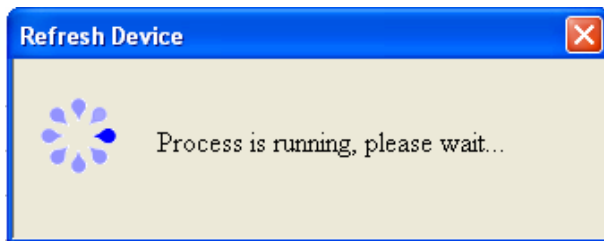
Serial No. = /RETEH/080508/114



5.3 Refresh

The Refresh function is used to retrieve the latest device information for the devices displayed on the device list.

To initiate the Refresh process, click the refresh device icon  on the tool bar or click [Refresh Device] from the [Scan] menu bar.

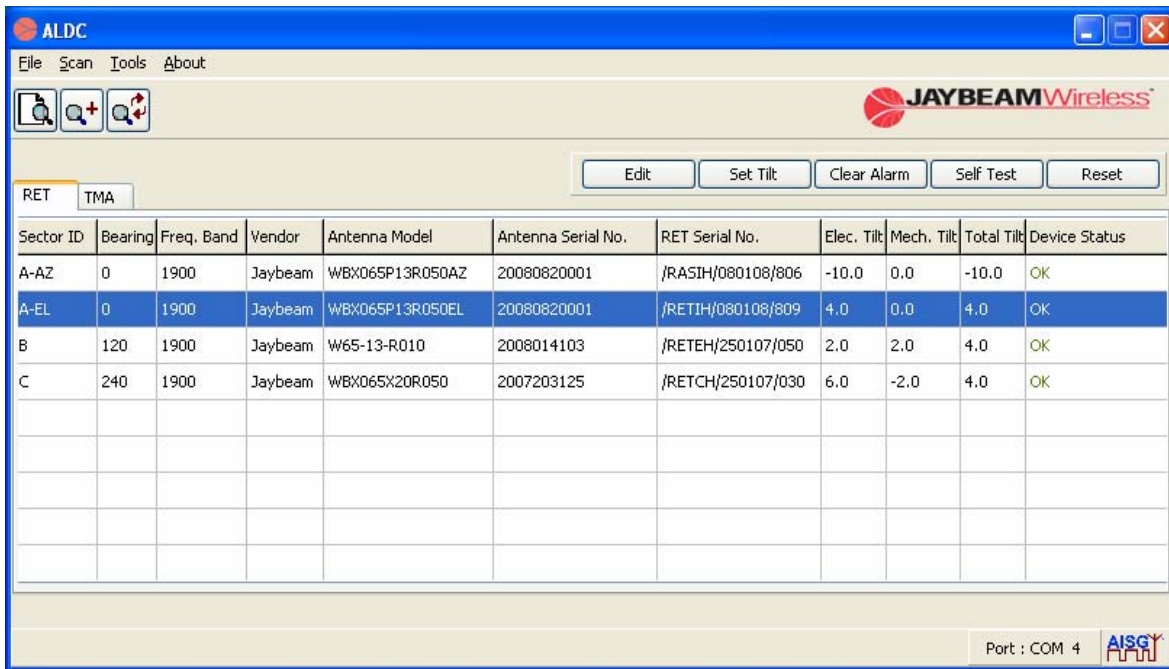


The following message will display to notify you that the process is finished and that the list on the panel has been updated. Click the [OK] button to close the message window.



5.4 Tool Bar Commands

Commonly used commands for each device type are displayed at the top of each panel. Select the device that you would like to control (the device will become hi-lited) and select the desired command from the tool bar menu.



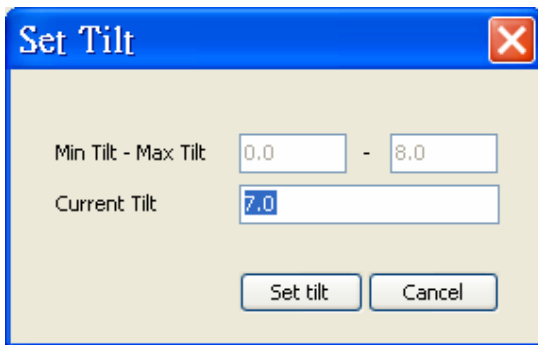
The screenshot shows the ALDC software window with a menu bar (File, Scan, Tools, About) and a toolbar with icons for search, zoom, and refresh. Below the toolbar is a tabbed interface with 'RET' and 'TMA' tabs. A toolbar contains buttons for 'Edit', 'Set Tilt', 'Clear Alarm', 'Self Test', and 'Reset'. The main area displays a table with the following data:

Sector ID	Bearing	Freq. Band	Vendor	Antenna Model	Antenna Serial No.	RET Serial No.	Elec. Tilt	Mech. Tilt	Total Tilt	Device Status
A-AZ	0	1900	Jaybeam	WBX065P13R050AZ	20080820001	/RASIH/080108/806	-10.0	0.0	-10.0	OK
A-EL	0	1900	Jaybeam	WBX065P13R050EL	20080820001	/RETIH/080108/809	4.0	0.0	4.0	OK
B	120	1900	Jaybeam	W65-13-R010	2008014103	/RETEH/250107/050	2.0	2.0	4.0	OK
C	240	1900	Jaybeam	WBX065X20R050	2007203125	/RETEH/250107/030	6.0	-2.0	4.0	OK

At the bottom right, it shows 'Port : COM 4' and the AISG logo.

5.4.1 Set Tilt – (RET devices)

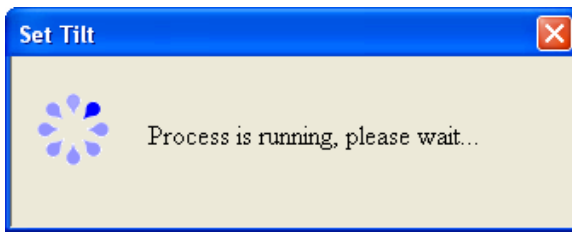
The following input window will be displayed after clicking the [Set Tilt] button on the tool bar.



The 'Set Tilt' dialog box contains the following fields and buttons:

- Min Tilt - Max Tilt: 0.0 - 8.0
- Current Tilt: 7.0
- Buttons: Set tilt, Cancel

Change the [Current Tilt] value to the desired value and click the [Set tilt] button to initiate the process.

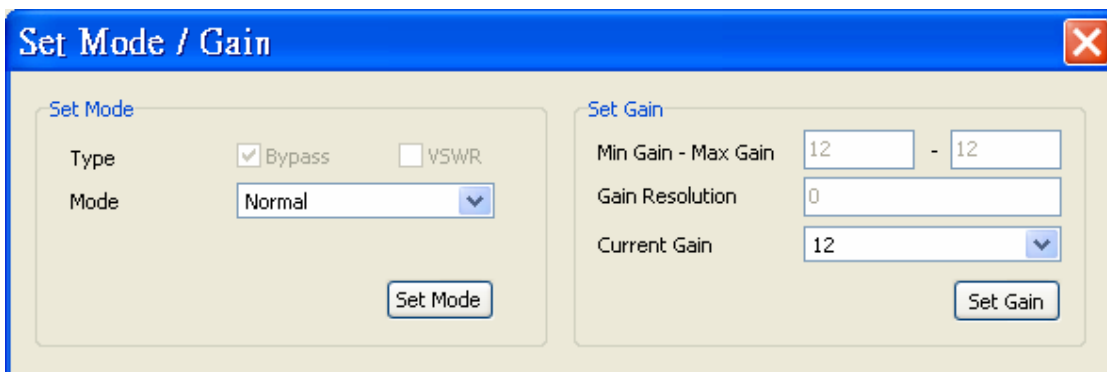


The following message will display to notify you that the new electrical tilt value has been applied successfully. Click the [OK] button to close the message window.

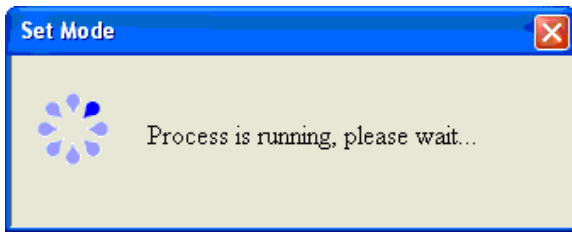


5.4.2 Set Mode/Gain- (TMA devices)

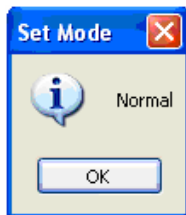
The following input window will appear after clicking the [Set Mode/Gain] button on the tool bar.



Click the [Set Mode] button or the [Set Gain] button to apply the new mode or gain displayed in the [Mode] or [Current Gain] window.



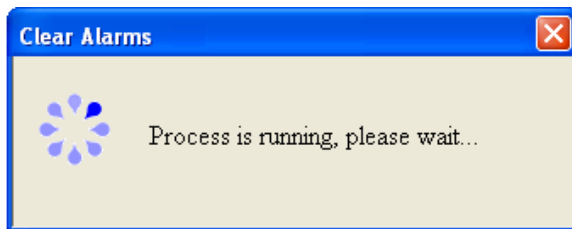
A message will notify you that the process was successful and will indicate the current mode or gain setting. Click the [OK] button to close the message window.



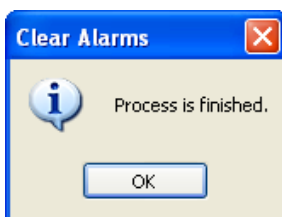
5.4.3 Clear Alarm

This function is to clear any AISG alarms for the selected device.

Click the [Clear Alarm] button on the tool bar to initiate the process.



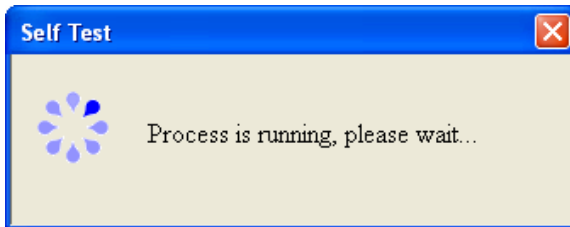
The following message will notify you that the process is finished. Click the [OK] button to close the message window.



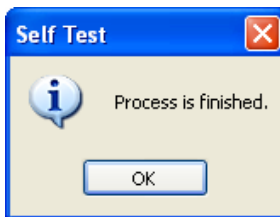
5.4.4 Self Test

This function will perform a self test operation on the selected device and report the outcome of that test.

Click the [Self Test] button on the tool bar to initiate the process.



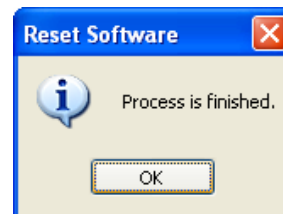
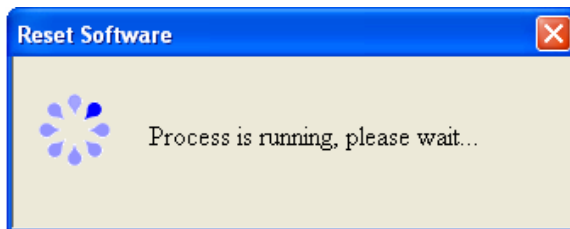
When the process is finished the following message will display to notify you that the process is finished. Click the [OK] button to close the message window.



5.4.5 Reset

This function will reset the software of the selected device.

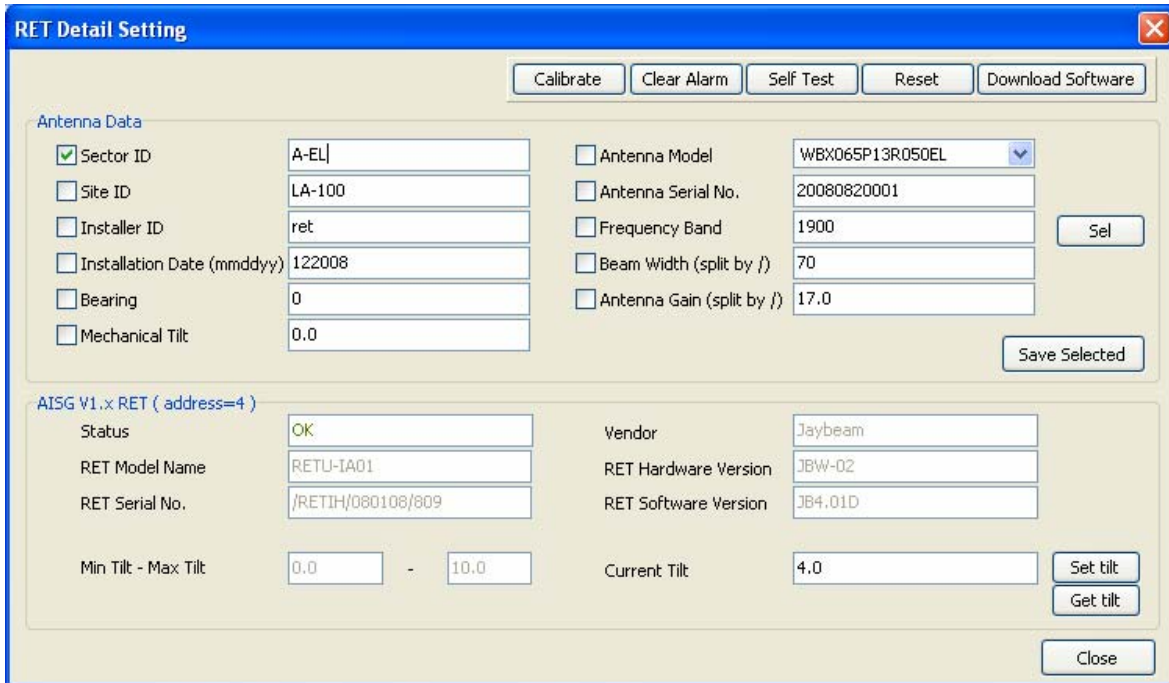
Click the [Reset] button on the tool bar to initiate the process.



The above message will notify you that the process is finished. Click the [OK] button to close the message window.

5.5 RET Detail Settings

Click the [Edit] button on the tool bar menu to display the detailed data for the selected device or double-click on the selected device.



RET Detail Setting

Calibrate Clear Alarm Self Test Reset Download Software

Antenna Data

Sector ID A-EL

Site ID LA-100

Installer ID ret

Installation Date (mmddyy) 122008

Bearing 0

Mechanical Tilt 0.0

Antenna Model WBX065P13R050EL

Antenna Serial No. 20080820001

Frequency Band 1900 Sel

Beam Width (split by /) 70

Antenna Gain (split by /) 17.0

Save Selected

AISG V1.x RET (address=4)

Status OK

RET Model Name RETU-IA01

RET Serial No. /RETIH/080108/809

Vendor Jaybeam

RET Hardware Version JBW-02

RET Software Version JB4.01D

Min Tilt - Max Tilt 0.0 - 10.0

Current Tilt 4.0 Set tilt Get tilt

Close

5.5.1 Antenna Installation Data

Column Name	Description / Constraint
Sector ID	Sector ID
Site ID	Base station site ID
Installer's ID	Installer's ID
Installation Date	mmddyy format
Bearing	Antenna bearing in the range of 0-359 degree
Mechanical tilt	Installed mechanical tilt in degrees
Antenna Serial No.	Antenna serial number (May already be factory programmed.)

To change the antenna installation information, type the new data in the appropriate field(s) and check the box(s) beside the field(s) that you would like to update. Click the [Save Selected] button to upload the revised information to the RET. Only fields with a check in the check-box will be uploaded to the RET. (This is intended to prevent accidental changes.)

5.5.2 Antenna Model Data

Column Name	Description / Constraint
Antenna Model	<p>If you cannot find a proper antenna model for the RET, please refer to “Add an Antenna Model” for how to add your antenna model.</p> <p>WARNING: Changing the antenna model will upload a new configuration file to the RET device. Do not change the factory programmed antenna model name unless you are certain you know what you are doing! If uncertain, please contact Jaybeam Wireless technical support before changing to this field.</p>
Frequency Band	Frequency band(s) used by the antenna
Beam Width	Beamwidth for each band in frequency order. Split by / Displayed in order according to [Frequency Band]
Antenna Gain	Gain for each band in frequency order. Spilt by / Displayed in order according to [Frequency Band]

● Changing Antenna Model:

It is only appropriate to upload a new antenna model to the RET device in the following circumstances:

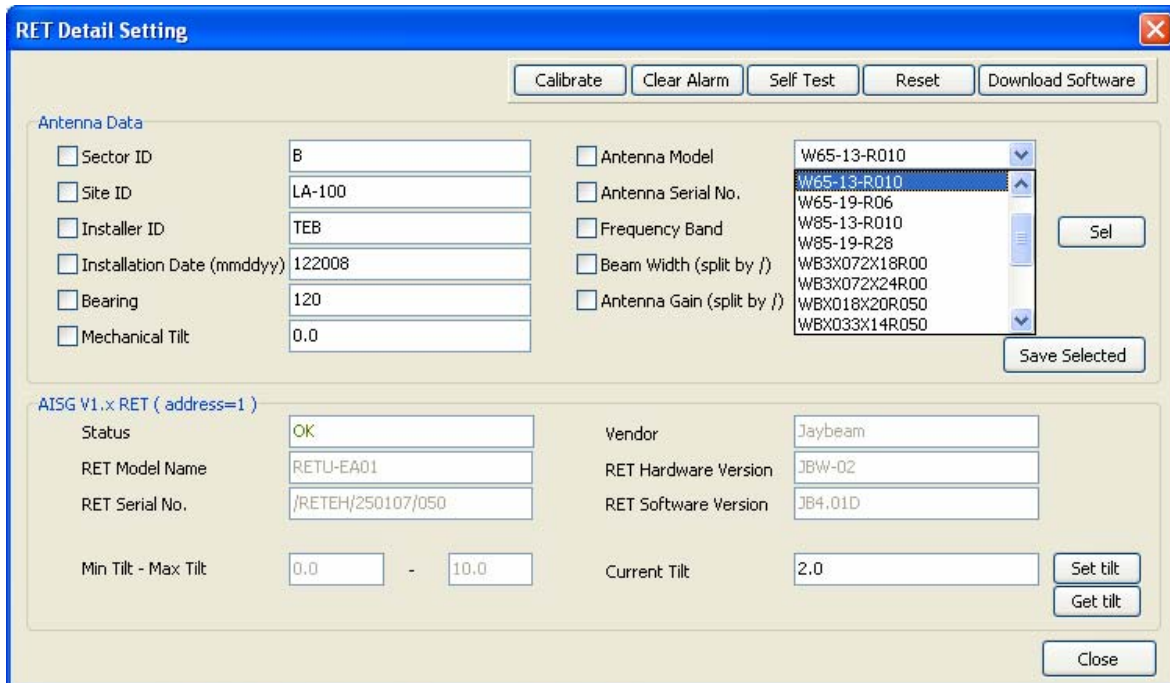
1. When transferring a RET unit from one antenna model to a different antenna model.

Note: For external Jaybeam Wireless RET units make sure that the RET electrical tilt and the antenna electrical tilt (as indicated by the dip stick) are set to the same setting before mechanically attaching the RET to the antenna!

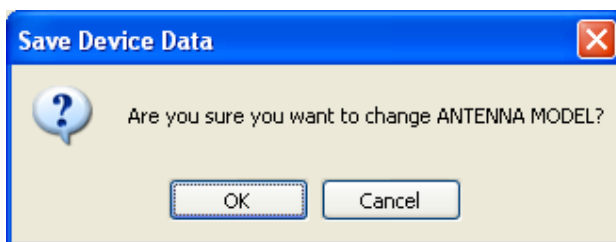
2. When upgrading the configuration file in the RET to a new release.

Note: It is rare that a new configuration file is required for a Jaybeam Wireless RET device. Only upload a new configuration file when instructed to do so by Jaybeam Wireless technical support.

If you have determined that you do need to upload a new configuration file to a RET, search for the appropriate antenna model file using the drop down menu under the antenna model field. If the desired antenna model is not found refer to the “Antenna Model Management” (Section 5.8) to learn how to upload the appropriate configuration data.

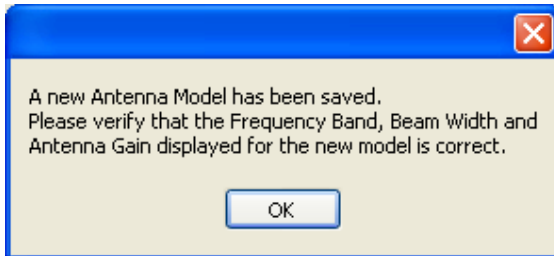


After the correct [Antenna Model] has been selected, check the box next to Antenna Model and click [Save Selected.] The following message will appear asking you to confirm that you want to proceed.



Click the [OK] button to initiate the process to upload a new configuration file to the RET device.

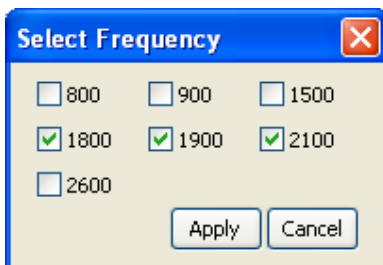
After the process has finished, another message will appear to remind you to verify the displayed Antenna Beamwidth and Antenna Gain data. Click the [OK] button to close this window.



Note: Beamwidth and Gain do not automatically update when a new configuration file is uploaded to a Jaybeam Wireless RET device. Refer to the antenna datasheet and manually update these fields if they are no longer correct. Beamwidth and Gain are “information only” data fields and do not have any impact on the actual performance of the antenna.

● Changing Frequency Band

After clicking the [Sel] button, a window will appear that displays the frequency bands supported by the device. Un-check any bands that do not apply to the current installation.



Note: This display will look different for AISG v2.0 devices due to enhancements to the AISG specification related to available frequency band codes.

After clicking the [Apply] button, the selected frequency band(s) will be refreshed back into [Frequency Band]. For each selected frequency band, if there are built-in values for beam width and antenna gain in the system, these built-in values will be shown in [Beam Width] and [Antenna Gain]; otherwise 0.0 will be displayed.

5.5.3 RET Model Data

The following table describes the RET model information displayed in the detail window.

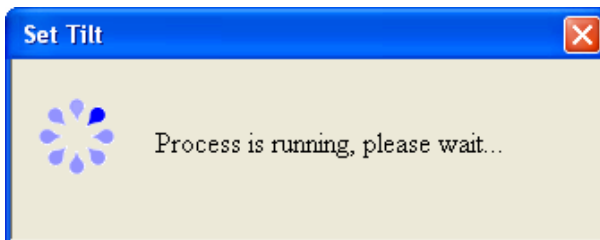
AISG V1.x RET (or AISG V2.x RET)

Column Name	Description / Constraint
Status	It can be "OK" or device alarm messages
Vendor	Vendor name
RET Model Name	RET model name
RET Serial No.	RET serial number
RET Hardware Version	RET hardware version
RET Software Version	RET software version
Min Tilt - Max Tilt	Allowed electrical tilt range of the selected antenna model
Current Tilt	Tilt setting should be in the range of [Min Tilt - Max Tilt].

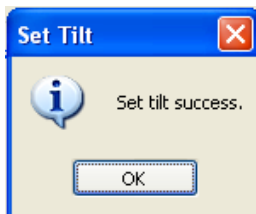
5.5.4 Set Tilt

This function provides a second location within the software to change the electrical tilt of an antenna.

Click the [Set tilt] button to change the electrical tilt to the value entered in the [Current Tilt] field.



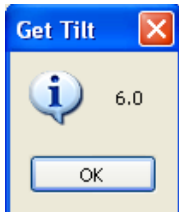
The following message will notify you that the process was successful. Click the [OK] button to close the message window.



5.5.5 Get Tilt

This function will interrogate the RET and return the current electrical tilt setting of an antenna.

Click the [Get tilt] button. The following window will appear to display the electrical tilt.

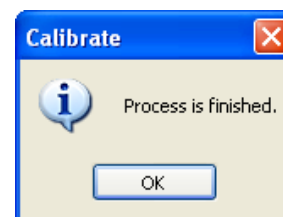
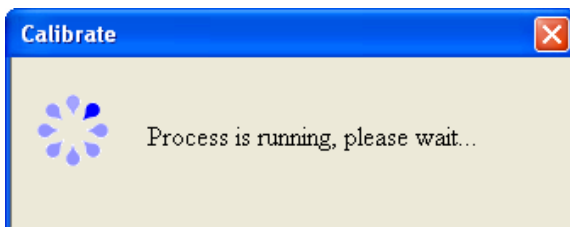
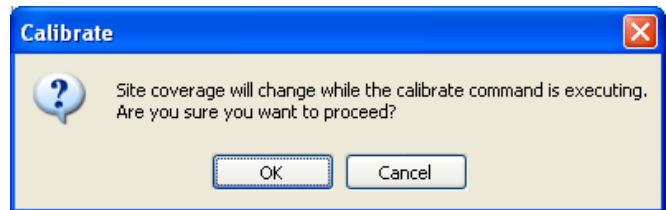


5.5.6 Calibration

The [Calibrate] function initiates a calibration command to the selected device. The calibration command is required by some manufacturers to automatically “calibrate” the RET actuator to the antenna.

Note: For Jaybeam Wireless devices, electronic calibration is not required. When a “calibrate” command is sent, a Jaybeam RET device, it will change the tilt to Max tilt, then to Min tilt and then return to the current tilt setting.

Click [Calibrate] button on the tool bar to initiate the process. The following warning will appear to make the user aware that site coverage will change during calibration. To proceed click [OK.]

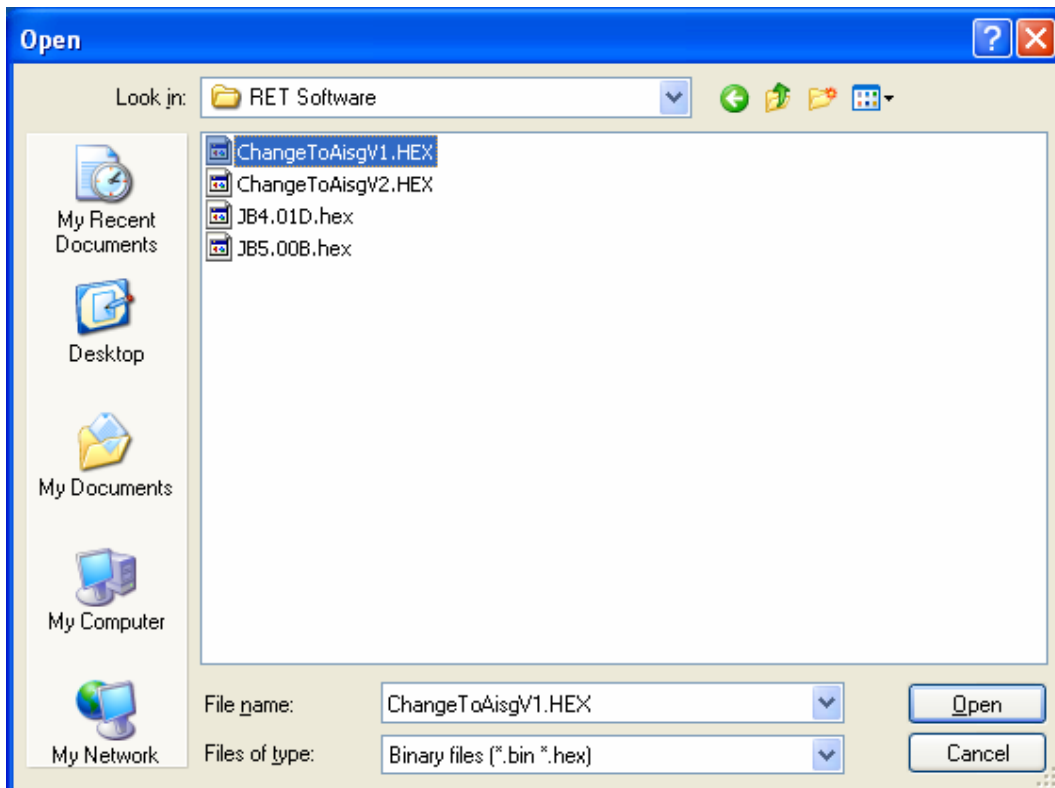


The above message will notify you that the process was successful. Click the [OK] button to close the message window.

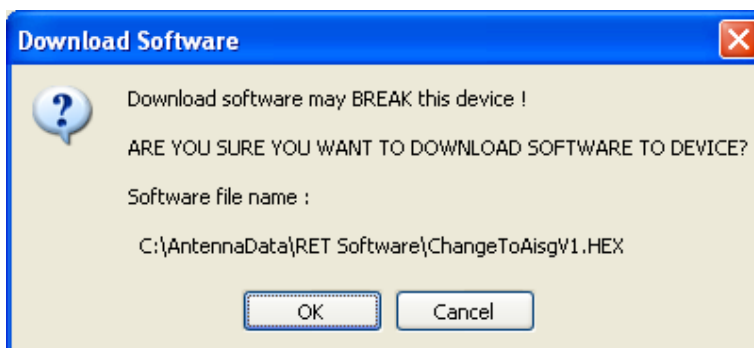
5.5.7 Download Software (RET and TMA)

This function provides the ability to upload new firmware to the selected AISG device. This feature can also be used to upload a small .hex file to selected Jaybeam Wireless RET devices to change the operating mode from AISGv1.1 to AISG v2.0 and vice versa.

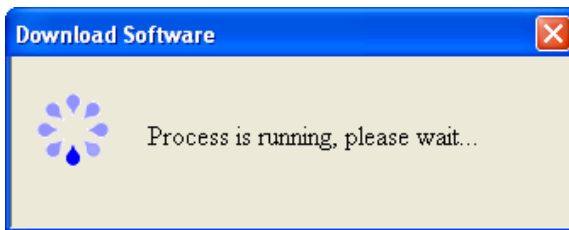
Click [Download Software] button to launch the window to select the file to upload to the device. The software program provided by the device vendor must have either .bin or .hex extension.



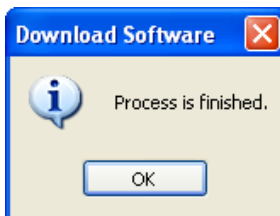
Click [Open] button after selecting the software file. A confirmation window will appear to make sure you want to download the software.



Click [OK] button to initiate the download process. Software Download can take up to 20 minutes (depending on the file size) so be patient!



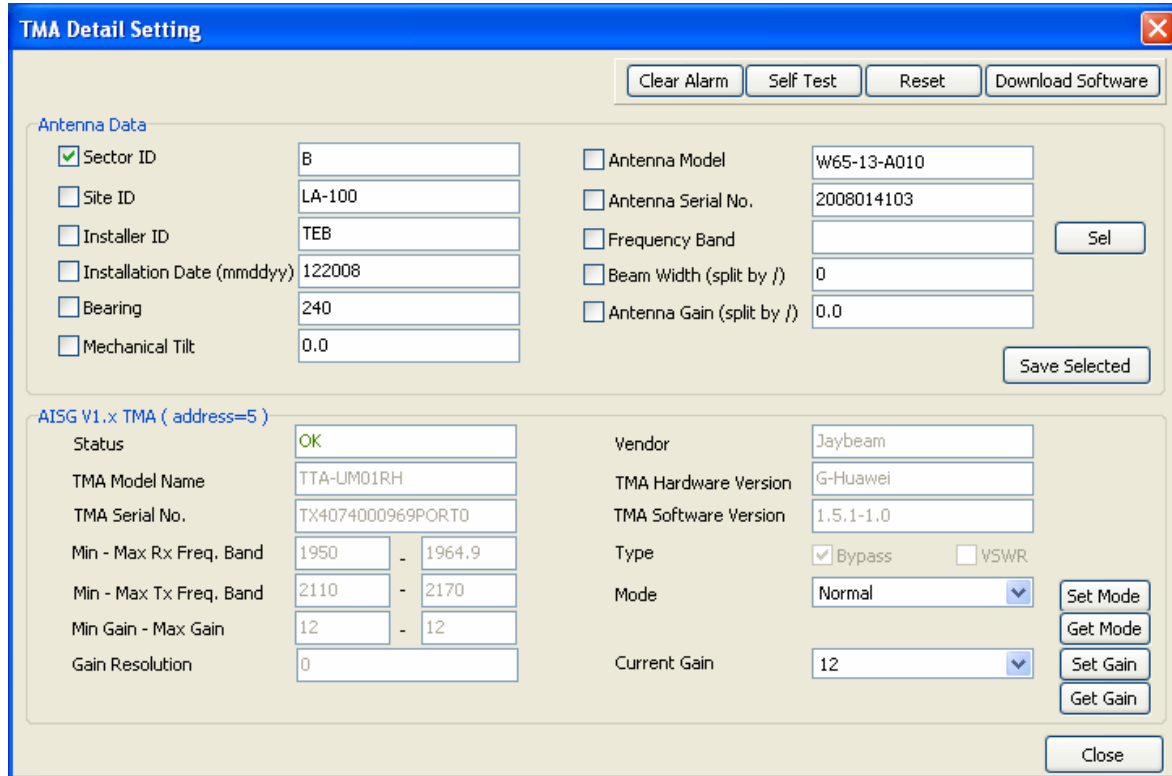
The message below will notify you that the process was successful. Click the [OK] button to close the message window.



Note: When switching the AISG operating mode of a Jaybeam Wireless RET, it may be necessary to re-scan the bus in order for the software to establish proper communication with the device and to display the updated AISG version.

5.6 TMA Detail Settings

Click the [Edit] button on the tool bar menu to display the detailed data for the selected device or double-click on the selected device.



TMA Detail Setting

Clear Alarm Self Test Reset Download Software

Antenna Data

Sector ID B

Site ID LA-100

Installer ID TEB

Installation Date (mmddyy) 122008

Bearing 240

Mechanical Tilt 0.0

Antenna Model W65-13-A010

Antenna Serial No. 2008014103

Frequency Band Sel

Beam Width (split by /) 0

Antenna Gain (split by /) 0.0

Save Selected

AISG V1.x TMA (address=5)

Status OK

TMA Model Name TTA-UM01RH

TMA Serial No. TX4074000969PORT0

Min - Max Rx Freq. Band 1950 - 1964.9

Min - Max Tx Freq. Band 2110 - 2170

Min Gain - Max Gain 12 - 12

Gain Resolution 0

Vendor Jaybeam

TMA Hardware Version G-Huawei

TMA Software Version 1.5.1-1.0

Type Bypass VSWR

Mode Normal Set Mode

Current Gain 12 Get Mode

Set Gain

Get Gain

Close

5.6.1 Antenna Installation Data (see section 5.5.1)

The antenna installation data fields for the TMA are identical to the fields previously described for the RET device.

5.6.2 Antenna Model Data (See section 5.5.2)

The only difference between RET antenna model data and TMA antenna model data is that the [Antenna Model] field does not upload an antenna configuration file to the device. This field is a text field only that is updated during installation to identify which serial number antenna the TMA is amplifying.

5.6.3 TMA Model Data

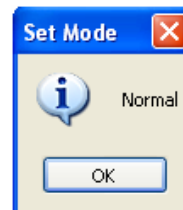
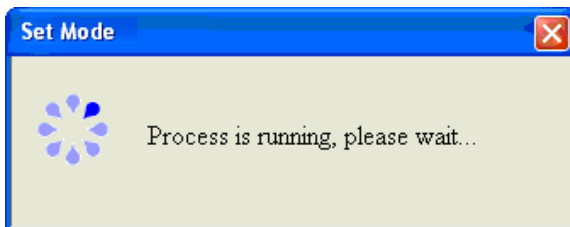
AISG V1.x TMA (or AISG V2.x TMA)

Column Name	Description / Constraint
Status	It can be “OK” or device alarm messages
Vendor	Vendor name
TMA Model Name	TMA model name
TMA Serial No.	TMA serial number
TMA Hardware Version	TMA hardware version
TMA Software Version	TMA software version
Min - Max Rx Freq. Band	Allowed receive frequency band range
Min - Max Tx Freq. Band	Allowed transmit frequency band range
Min Gain - Max Gain	Allowed gain range of the TMA model
Gain Resolution	An gain increment from min gain to max gain For fixed gain or non-linear gain TMA, this value is always zero
Type	It’s TMA type that can be “Bypass” and/or “VSWR”
Mode	TMA mode can be “Bypass” or “Normal”
Current Gain	The value should be in the range of [Min Gain - Max Gain].

5.6.4 Set Mode

This function is to set the TMA mode which can be either Bypass or Normal.

Click the [Set Mode] button to apply the mode selected in the [Mode] field.



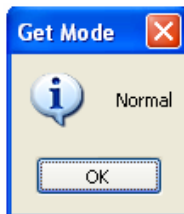
The message will notify you that the process was successful and show the current mode.

Click the [OK] button to close the message window.

5.6.5 Get Mode

This function will interrogate the TMA device to determine the current TMA mode.

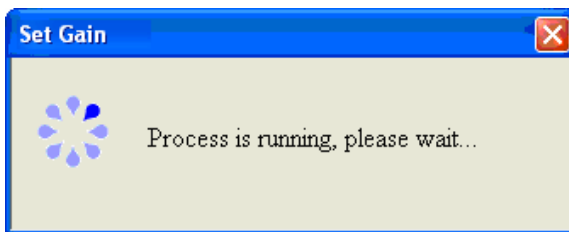
After clicking the [Get Mode] button, the current TMA mode setting shows in a popup window.



5.6.6 Set Gain

This function will set the TMA gain. TMA gain must fall between the min gain and max gain values.

Click the [Set Gain] button to apply the gain value selected in the [Current Gain] field.

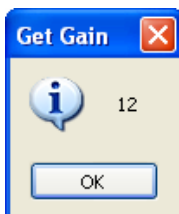


If this functionality is not supported by the device, “Unsupported Proc” or “Read Only” message may be displayed to indicate the function is not supported. Otherwise, a successful message is shown to notify you that the gain value has been applied successfully.

5.6.7 Get Gain

This function will interrogate the TMA device to determine the current TMA gain value.

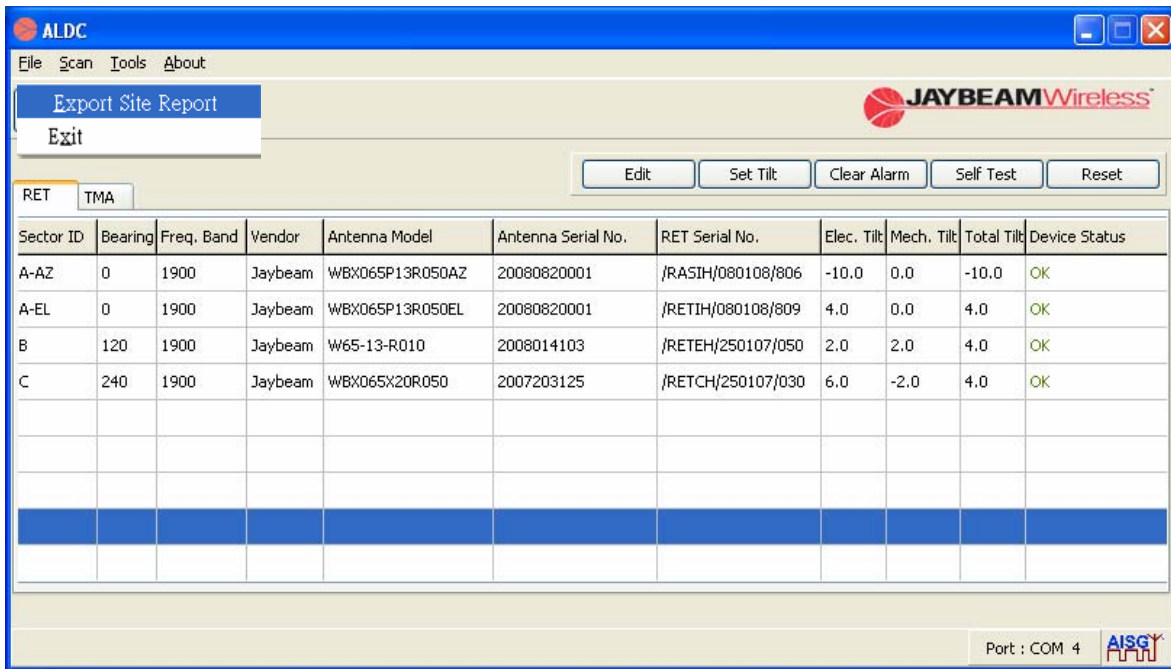
After clicking [Get Gain] button, the current TMA gain value shows in a popup window.



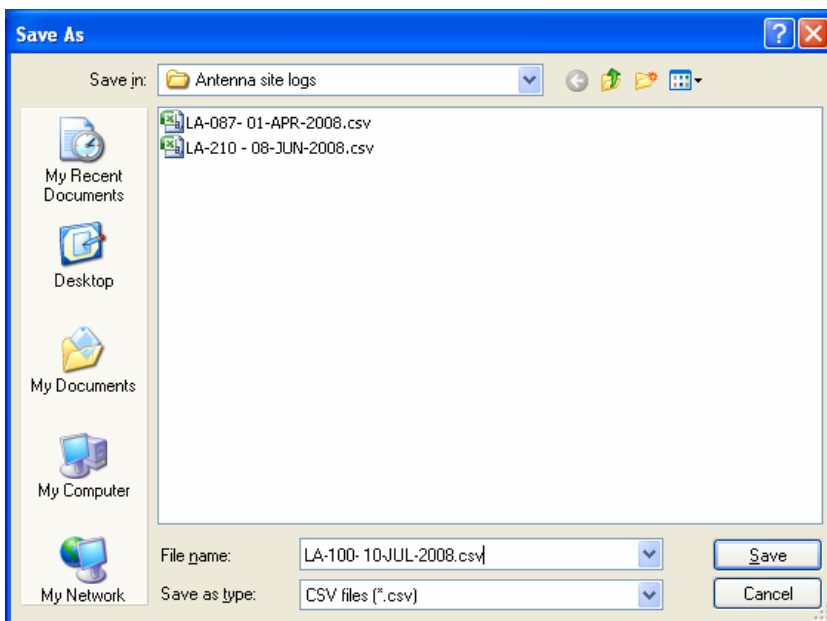
5.7 Site Report

The site report provides the ability to save a record of all device information at a site into a CSV format file. The default file name is Report.csv. This file is a comma delimited ASCII file that can be imported into EXCEL to allow easy sorting and formatting of the recorded site information.

Click [File] on the menu bar, then click [Export Site Report]



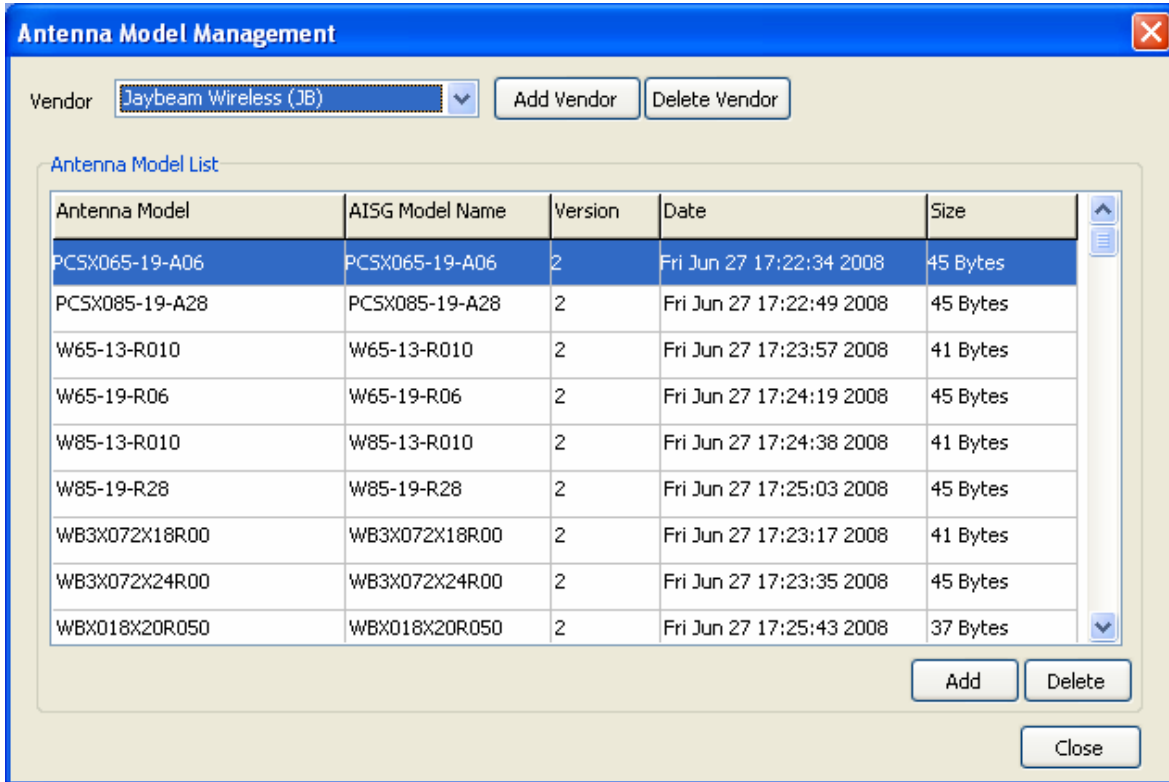
It is recommended that the user create a folder for saving site logs and adopt a log naming convention to identify the site name and date that the log was created.



The CSV format log file can be easily imported into MS EXCEL or into MS WORD tables. All data fields associated with each device type are deposited in the log file. This file creates a record of the site configuration at the time that the log file was created.

RET Report														
Sector ID	Address	Device Type	Site ID	Installer ID	Installation Date	Bearing	Mech. Tilt	Antenna Model	Antenna Serial No.	Freq. Band	Beam Width	Antenna Gain	AISG Version	Device Stat
A-AZ	1	01	LA-100	TEB	122008	0	0.0	WBX065P13R050AZ	20080820001	1900	70	17.0	1.x	OK
A-EL	4	01	LA-100	TEB	122008	0	0.0	WBX065P13R050EL	20080820001	1900	70	17.0	1.x	OK
B	3	01	LA-100	TEB	122008	120	0.0	W65-13-R010	2008014103	1900	67	17.5	1.x	OK
C	2	01	LA-100	TEB	122008	240	-2.0	WBX065X20R050	2007203125	1900	65	18.5	1.x	OK

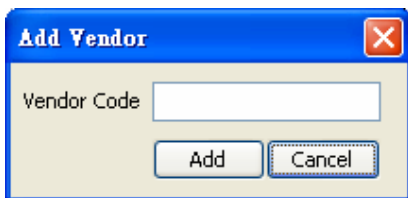
Device Status																	
Device Status	Vendor	RET Model	RET Serial No.	Hardware Version	Software Version	Min Tilt-Max Tilt	Elec. Tilt	Vendor	TMA Model	TMA Serial No.	Hardware Version	Software Version	TMA Type	Mode	Min-MAX TMA rxFreqBand	Min-MAX TMA txFreqBand	Min Gain-Max Gain
OK	Jaybeam	RASU-IA01	/RASIH/080108/806	JBW-02	JB4.01D	-30.0-30.0	-10.0										
OK	Jaybeam	RETU-IA01	/RETIH/080108/809	JBW-02	JB4.01D	0.0-10.0	4.0										
OK	Jaybeam	RETU-EA01	/RETEH/250107/050	JBW-02	JB4.01D	0.0-10.0	2.0										
OK	Jaybeam	RETU-CA01	/RETEH/250107/030	29216/09	JB4.01D	2.0-8.0	6.0										
OK	Jaybeam	TTA-UM01RH	TX4074000969PORT0	G-Huawei	1.5.1-1.0	Bypass	Normal	1950.0-1964.9	2110.0-2170.0	12-12							
OK	Jaybeam	TTA-UM01RH	TX4074000969PORT1	G-Huawei	1.5.1-1.0	Bypass	Normal	1950.0-1964.9	2110.0-2170.0	12-12							



The content of the [Antenna Model List] depends on what files you have previously loaded. Initially, no files are loaded. When uploading configuration files, contact the antenna manufacturer to make sure you have the latest file version.

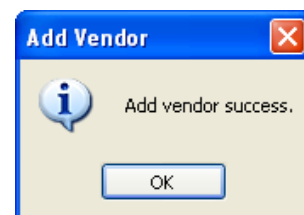
5.8.1 Add a Vendor

The vendor must exist in the [Vendor] list before you can upload configuration files for that vendor. To add a new vendor, click the [Add Vendor] button.



Enter the two letter AISG Vendor code for the vendor you would like to add and click the [Add] button to initiate the process. Reference www.AISG.org.uk for the latest vendor list. A copy of this list is included on the following page for reference.

A message will notify you that the vendor has been added successfully. Click the [OK] button to close the message window.



AISG Vendor Codes:

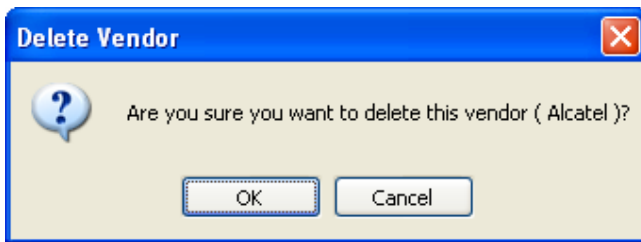
Vendor code	Company name	Vendor code	Company name
AA	Alcatel	KL	K & L Microwave Inc
AC	ADC, Inc	KM	KMW Ltd
AD	Alan Dick & Co Ltd	LA	Powerwave Technologies Inc
AE	ACE Technology Corporation	LG	Powerwave Technologies Inc
AF	Aerial Facilities Ltd	LO	Lorch Microwave Inc.
AL	Powerwave Technologies Inc	LU	Lucent Technologies
AI	Amphenol Antel Inc	MA	Jaybeam Wireless
AM	ARIALCOM SA	MI	Mitec Inc
AN	Andrew Corporation	ML	Microlab/FXR
AR	Argus Technologies (Australia) Pty Ltd	MO	Motorola
AV	Avitec AB	MT	Mobile Antenna Technologies (Shenzhen) Co., Ltd
AW	Antone Wireless Corp	MY	Sistemas Radiantes, F. Moyano, S.A.
BT	Bravo Tech Inc.	ND	Nihon Dengyo Kosaku Co Ltd
BW	Böke & Walterfang Ltd	NK	Nokia
CB	Comba Telecom	NN	Nortel Networks
CC	CSS Antenna Inc	PO	Polyphaser Corp.
CE	C3EM SA	PW	PowerWave Technologies Inc
CI	Communication Components Inc	QU	Quintel Ltd
CM	Combilent A/S	RA	Racal Antennas Ltd
CO	Comba Telecom	RC	Radio Components Sweden AB
CS	Jaybeam Wireless	RD	Radio Design Ltd
CT	Celletra, Inc	RE	Powerwave Technologies Inc
CX	Cellmax Technologies	RF	RFS Inc
DA	DAPA Systèmes SA	RK	R&K Company Ltd
DB	Andrew Corporation	RY	RYMSA SA
DK	Denki Kogyo Co Ltd	SE	Selecom SA
EB	Elektrobit Ltd	SH	University of Sheffield (UK)
EM	EMS Technologies, Inc	SM	Siemens AG
ET	ETSA	SI	Sigma Wireless Technology Ltd
ER	Ericsson	SP	Spinner GmbH
EY	Eyecom Technologies	ST	Stella Doradus Waterford Ltd
FG	Wuhan Fingu Electroinc Co Ltd	SU	Sunwave Communications Co Ltd
FI	Filtronic Ltd	SW	SunwaveTec
FÖ	Andrew Corporation	TH	Racal Antennas Ltd
FR	Fractus SA	TR	Triasx Pty. Ltd.
GN	Gamma Nu Inc	TY	Tongyu Communications Equipment Co
GR	Grintek Antennas	TX	TenXc Wireless Inc.
GT	Gemintek Corporation	UW	Unity Wireless Corporation
HI	Hitachi Cable Co Ltd	VX	Voxaura Technologies Inc
HH	HCS-HES Cabling Systems	XH	Xi'an Haitian Antenna Technologies Co Ltd
HS	Huber + Suhner		
JB	Jaybeam Wireless		
HW	Huawei Technology Ltd		
KA	Kathrein KG		

Note: The existence of an assigned Vendor Code does not indicate that the company to which it was assigned is still manufacturing or trading under the name shown, nor that is a member of AISG.

5.8.2 Delete a Vendor

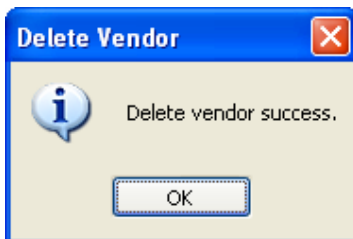
Before deleting a vendor, you have to make sure there is no any model exists under this vendor.

Select the vendor that you would like to delete from the [Vendor] list, then click the [Delete Vendor] button next to the [Vendor] list. The following confirmation window displays.

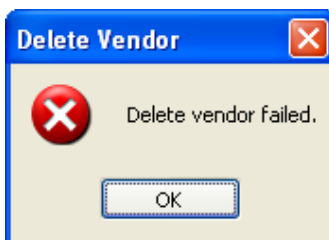


Click the [OK] button to delete the selected vendor from the system and refresh the [Vendor] list.

The following message will display to notify you that the vendor has been deleted successfully. Click the [OK] button to close the message window.



If there is a model stored under the selected vendor, the following warning message appears and the vendor will not be deleted.



5.8.3 Add an Antenna Model

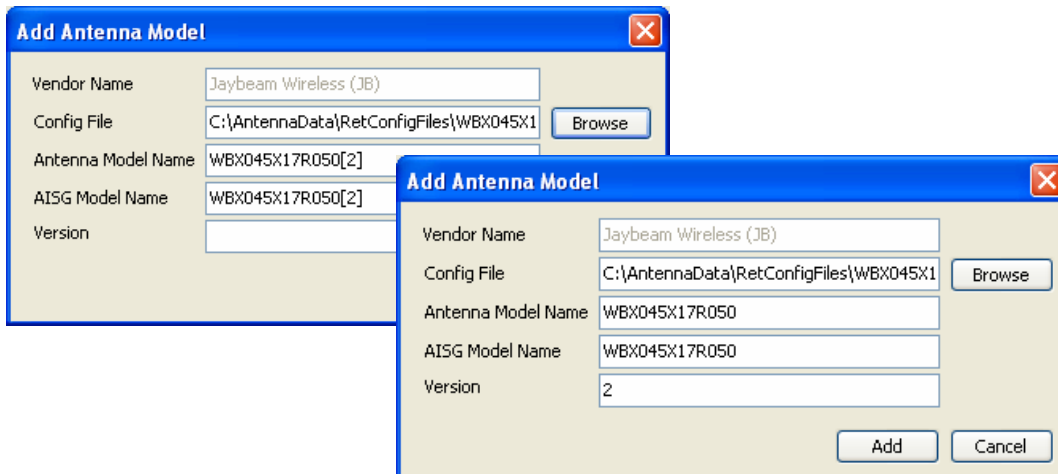
The vendor must exist in the [Vendor] list before antenna models can be uploaded. This function will upload a configuration file from the selected vendor to the specific location in the PC.

Select a vendor from the [Vendor] list and click the [Add] button below the Antenna Model list to upload a configuration file from that vendor.

Refer the following table for detailed information of each input field.

Column Name	Description / Constraint
Vendor Name	Vendor name
Config File	Filename with its full path should be provided. Only a file less than 0.5 KB with extension of .bin, .RETbin or .acf is allowed.
Antenna Model Name	Antenna model name. The configuration filename will be used as the default model name that is allowed to be changed.
AISG Model Name	The model name will be stored in RET device. The max. length of AISG model name is 15 characters.
Version	The antenna model configuration file version (Optional)

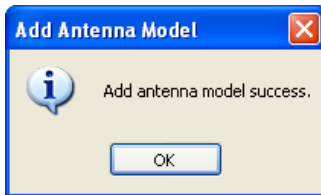
Browse your computer to find the configuration file provided by your antenna vendor.



The image shows two overlapping screenshots of the 'Add Antenna Model' dialog box. The background screenshot shows the dialog with the following fields: Vendor Name (Jaybeam Wireless (JB)), Config File (C:\AntennaData\RetConfigFiles\WBX045X1), Antenna Model Name (WBX045X17R050[2]), AISG Model Name (WBX045X17R050[2]), and Version (empty). A 'Browse' button is next to the Config File field. The foreground screenshot shows the same dialog but with the Antenna Model Name (WBX045X17R050) and AISG Model Name (WBX045X17R050) fields updated, and the Version field set to '2'. The 'Add' and 'Cancel' buttons are visible at the bottom right.

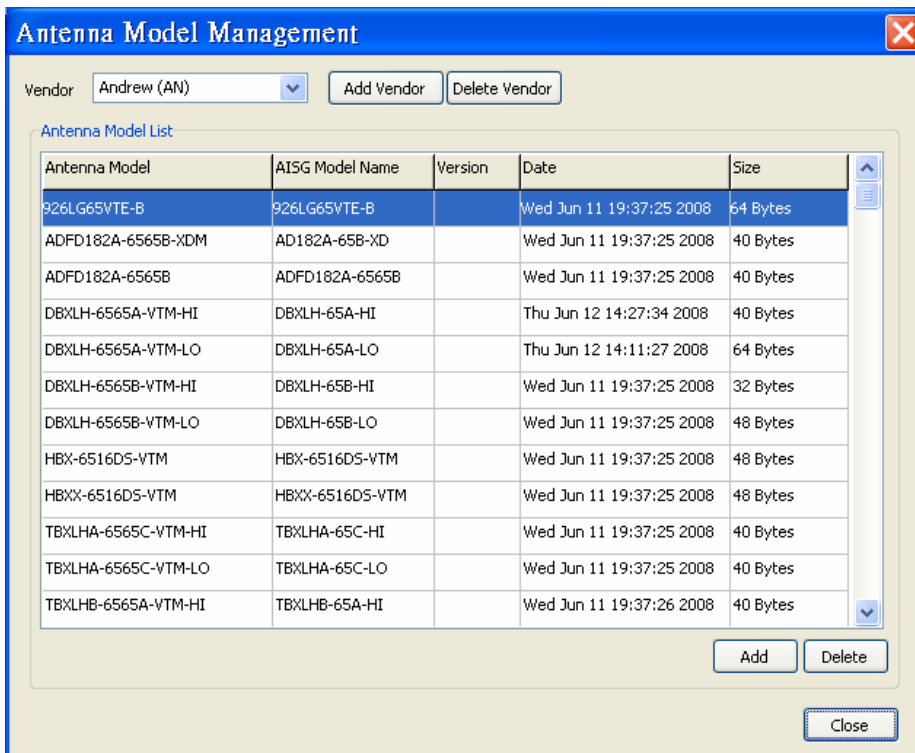
Note: Jaybeam Wireless .RETbin files may contain the Config. File version code as part of the file name. In this case, edit the Antenna Model Name and Version fields before selecting [Add] to document the version code to the appropriate location.

The following message will notify you that the model has been added successfully. Click the [OK] button to close the message window.

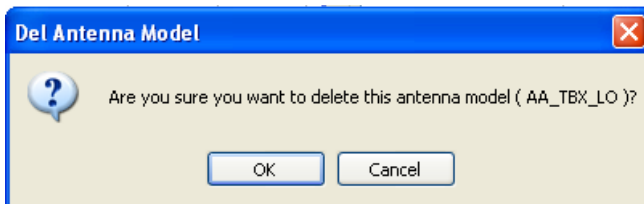


5.8.4 Delete an Antenna Model

This function will delete a selected antenna model from the system.



The confirmation window shown will appear after clicking the [Delete] button. Click the [OK] button to delete the selected antenna model.



Appendix A: Changing AISG Communications Mode

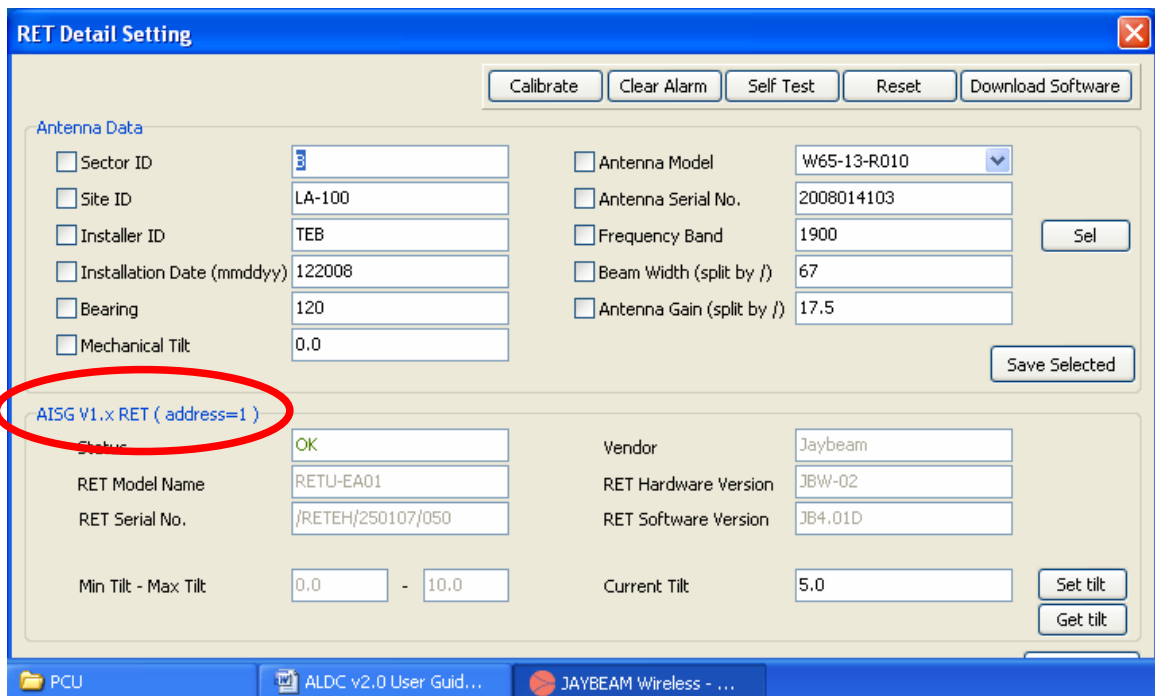
Jaybeam Wireless RET units are designed to operate in either AISGv1.1 or AISGv2.0/3GPP communications mode. To switch between communication modes a very small file must be sent to the RET using the “Download Software” feature of the primary controller. This procedure describes how to change communication modes using the ALDC v2.0 primary control software.

1) Locate files:

Locate the folder “**AISG Mode**” containing the files “**ChangeToAisgV1.HEX**” and “**ChangeToAisgV2.HEX.**” These files were provided with your software installation CD. It is recommended that these files be stored in the same directory where the ALDC software is stored.

2) Verify the current AISG mode:

The current AISG operating mode for a RET device can be found by double clicking on the device in the main menu or by selecting the [Edit] tab. The AISG mode is displayed in the location indicated.



RET Detail Setting

Calibrate Clear Alarm Self Test Reset Download Software

Antenna Data

Sector ID: []
 Site ID: LA-100
 Installer ID: TEB
 Installation Date (mmddyy): 122008
 Bearing: 120
 Mechanical Tilt: 0.0

Antenna Model: W65-13-R010
 Antenna Serial No.: 2008014103
 Frequency Band: 1900 [Sel]
 Beam Width (split by /): 67
 Antenna Gain (split by /): 17.5 [Save Selected]

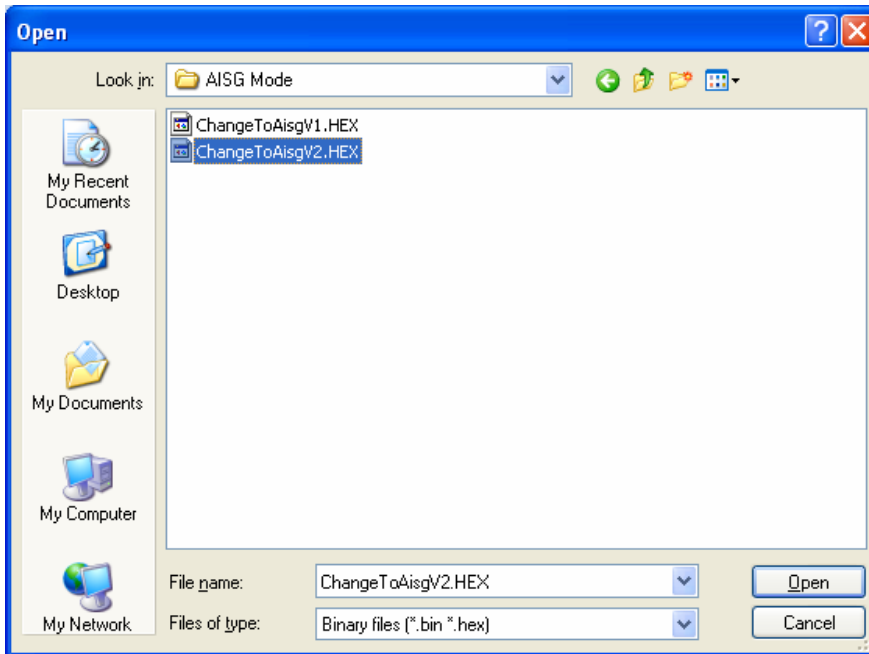
AISG V1.x RET (address=1)

Status: OK Vendor: Jaybeam
 RET Model Name: RETU-EA01 RET Hardware Version: JBW-02
 RET Serial No.: /RETEH/250107/050 RET Software Version: JB4.01D
 Min Tilt - Max Tilt: 0.0 - 10.0 Current Tilt: 5.0 [Set tilt] [Get tilt]

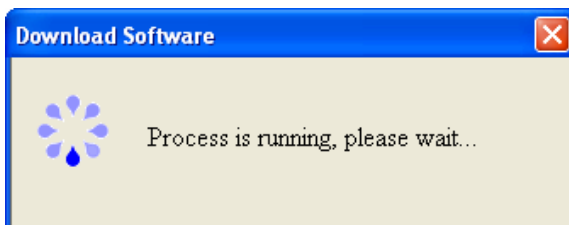
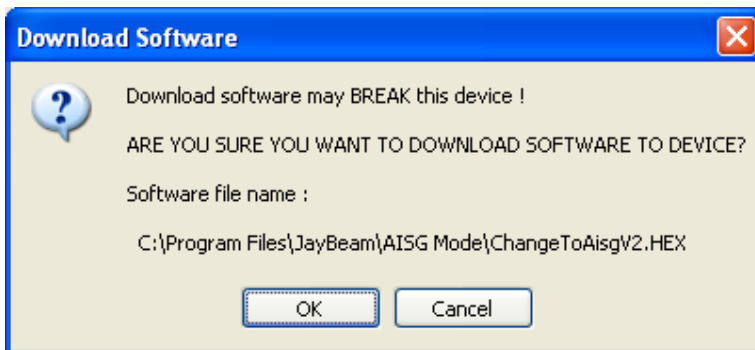
PCU ALDC v2.0 User Guid... JAYBEAM Wireless - ...

3) Change the communications mode:

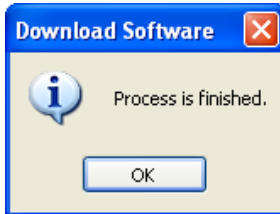
Click the [Download Software] button to launch the window to select the file to upload to the device. Select the file whose name matches the operation you would like to perform.



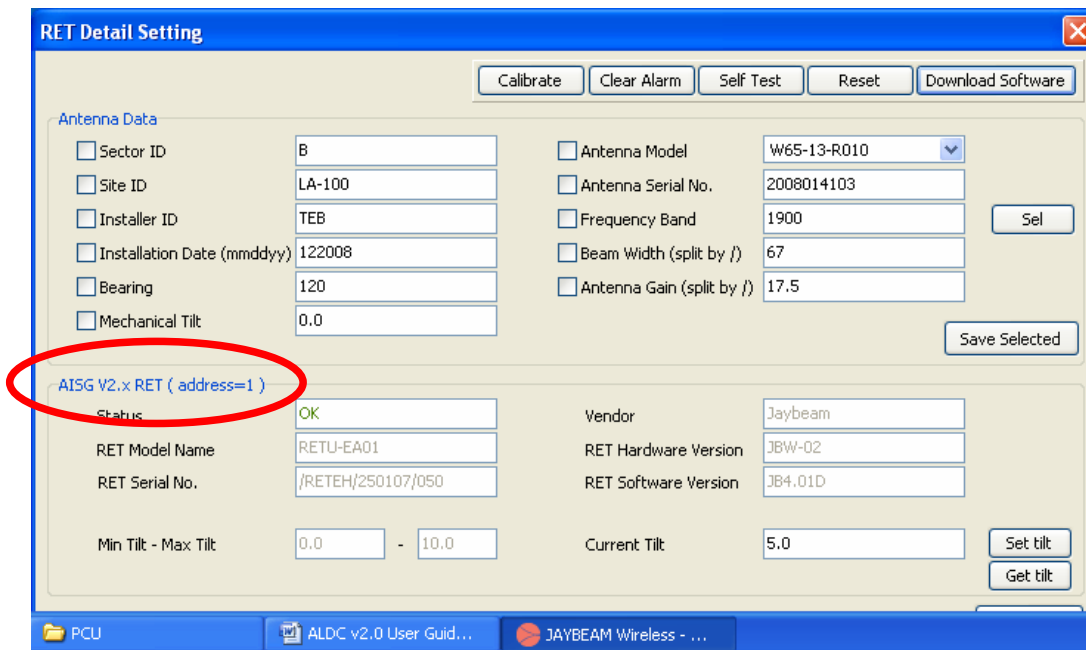
Click the [Open] button after selecting the file. The following confirmation window will appear. Click the [OK] button to initiate the download process.



The message below will notify you that the process was successful. Click the [OK] button to close the message window.



To verify that the communications mode was changed correctly, double click on the device in the main menu or select the [Edit] button. Verify that the new AISG mode is displayed.



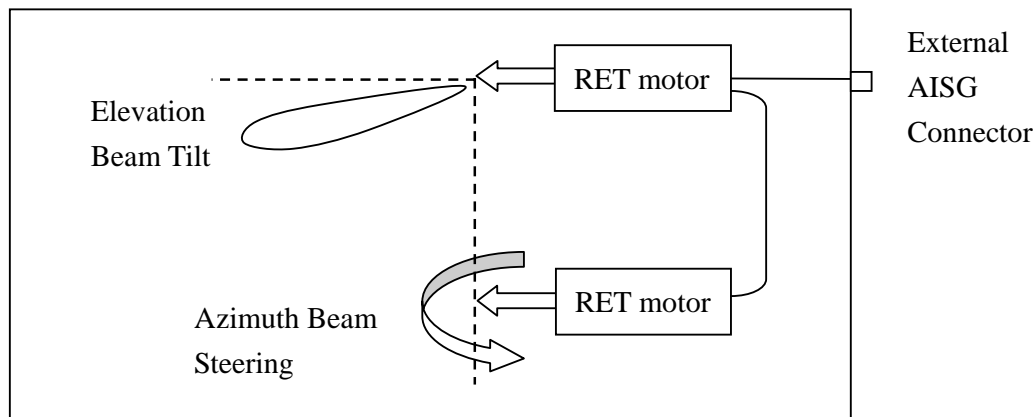
Appendix B: Remote Azimuth Steering (RAS)

Overview:

Standard AISG-ES-RAS v2.1.0 was released by the Antenna Interface Standards Group (AISG) in December 2007 as an optional extension to AISGv2.0 to define procedures for controlling Remote Azimuth Steering (RAS) devices. Unfortunately, this specification has the following practical limitations:

- RAS device types are not yet supported by many OEM primary controllers.
- RAS device types are not recognized by legacy AISGv1.1 controllers.

In order to overcome these limitations Jaybeam Wireless has developed 2-way adjustable (RET / RAS) antennas using the following internal device configuration:




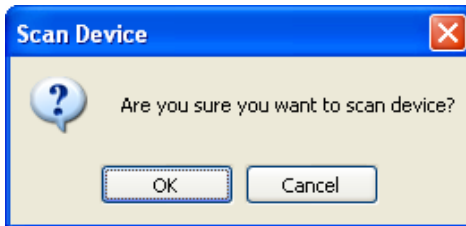
In this configuration two separate actuators are installed inside the antenna. One actuator is used to control elevation beam tilt while the second actuator is used to control azimuth beam steering. Both actuators are programmed as a “RET” device type according to the AISG standard. This enables the antenna to be controlled using legacy AISGv1.1 controllers as well as newer AISGv2.0 systems. The only drawback to this approach is that care must be given during site set-up to clearly identify the function of each “RET” device found.

Procedure:

Note: To avoid confusion it is highly recommended that installers configure 2-way adjustable antennas on the ground before installing the antennas at the top of the tower.

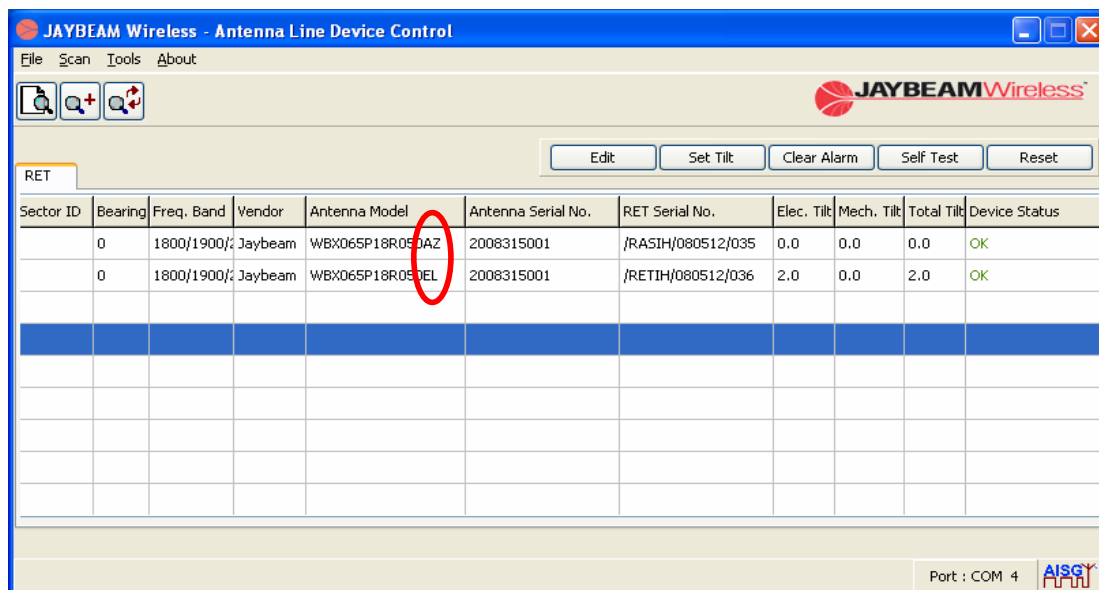
1) SCAN the first antenna:

Connect the AISG control cable from the PCU directly to the first antenna to be programmed. Start the ALDC software and click the scan device icon  on the tool bar or click [Scan Device] from in the [Scan] menu bar. The following verification screen will appear.



Click the [OK] button to initiate the process.

Two RET devices will be found. The first device will be the azimuth actuator and the second device will be the elevation actuator. This can be verified by looking at the "Model Name" which will include "AZ" for Azimuth or "EL" for Elevation. Note that the "Antenna Serial No." for both actuators will be the same since they are both installed inside the same antenna.



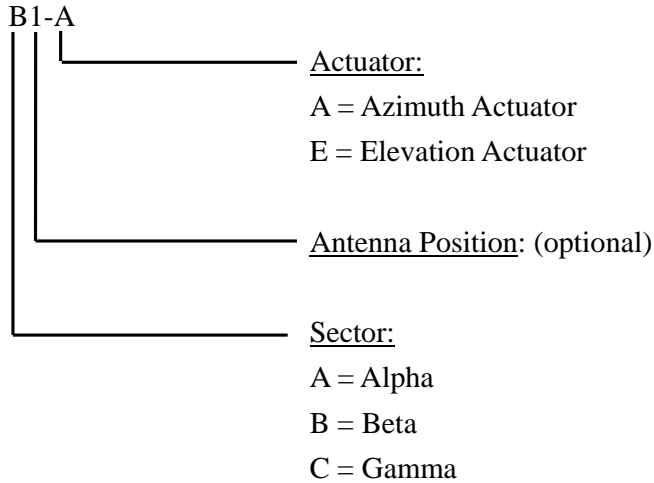
The screenshot shows the "JAYBEAM Wireless - Antenna Line Device Control" application window. It features a menu bar (File, Scan, Tools, About), a toolbar with icons for scan, add, and refresh, and a main area with a table of RET devices. The table has columns for Sector ID, Bearing, Freq. Band, Vendor, Antenna Model, Antenna Serial No., RET Serial No., Elec. Tilt, Mech. Tilt, Total Tilt, and Device Status. Two rows are visible, both with "WBX065P18R05" as the Antenna Model. The first row has "WBX065P18R05-AZ" and the second has "WBX065P18R05-DEL". The "Antenna Model" column is circled in red in the original image. At the bottom right, it shows "Port : COM 4" and the AISG logo.

Sector ID	Bearing	Freq. Band	Vendor	Antenna Model	Antenna Serial No.	RET Serial No.	Elec. Tilt	Mech. Tilt	Total Tilt	Device Status
0		1800/1900/2	Jaybeam	WBX065P18R05-AZ	2008315001	/RASIH/080512/035	0.0	0.0	0.0	OK
0		1800/1900/2	Jaybeam	WBX065P18R05-DEL	2008315001	/RETIH/080512/036	2.0	0.0	2.0	OK

2) Configure Sector ID and Bearing:

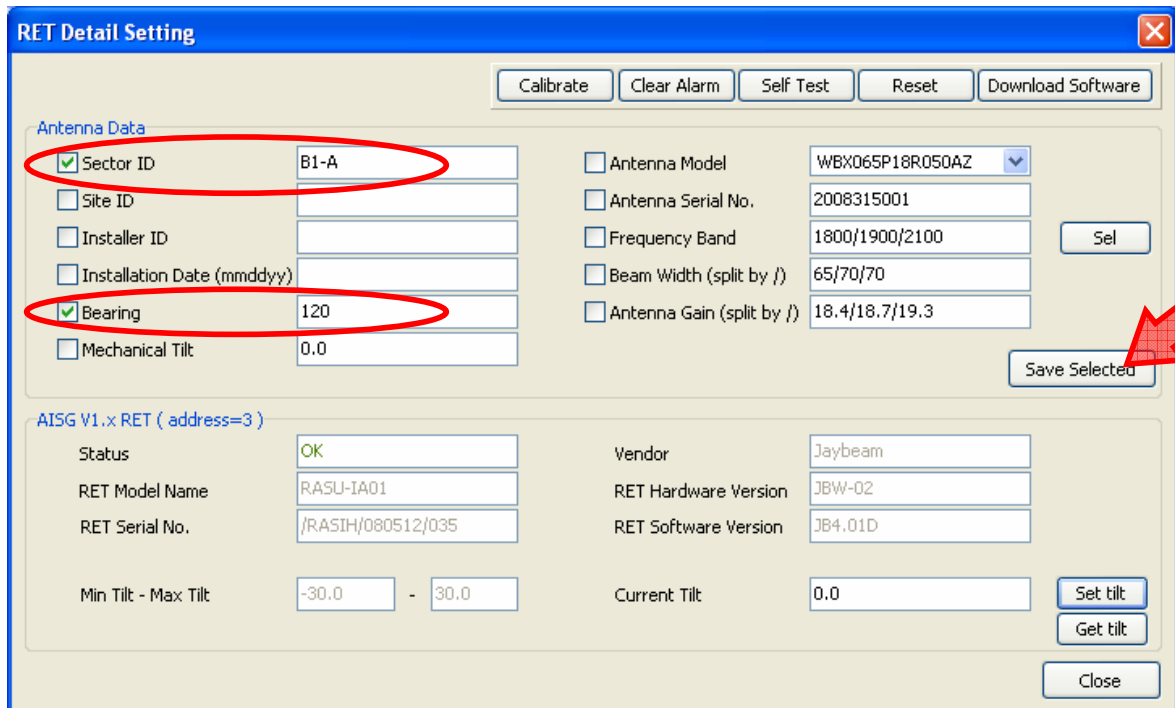
Double click on the first device to access the RET detail page. Program the Sector ID and Bearing according to the following suggested plan:

Sector ID: (4 characters max)



Bearing: (0 – 359)

In this field enter the planned mechanical pointing direction of the antenna after installation (per the site plan) expressed in degrees East of True North (ETN.)



RET Detail Setting

Calibrate Clear Alarm Self Test Reset Download Software

Antenna Data

Sector ID B1-A

Site ID

Installer ID

Installation Date (mmddyy)

Bearing 120

Mechanical Tilt 0.0

Antenna Model WBX065P18R050AZ

Antenna Serial No. 2008315001

Frequency Band 1800/1900/2100 Sel

Beam Width (split by /) 65/70/70

Antenna Gain (split by /) 18.4/18.7/19.3

Save Selected

AISG V1.x RET (address=3)

Status OK Vendor Jaybeam

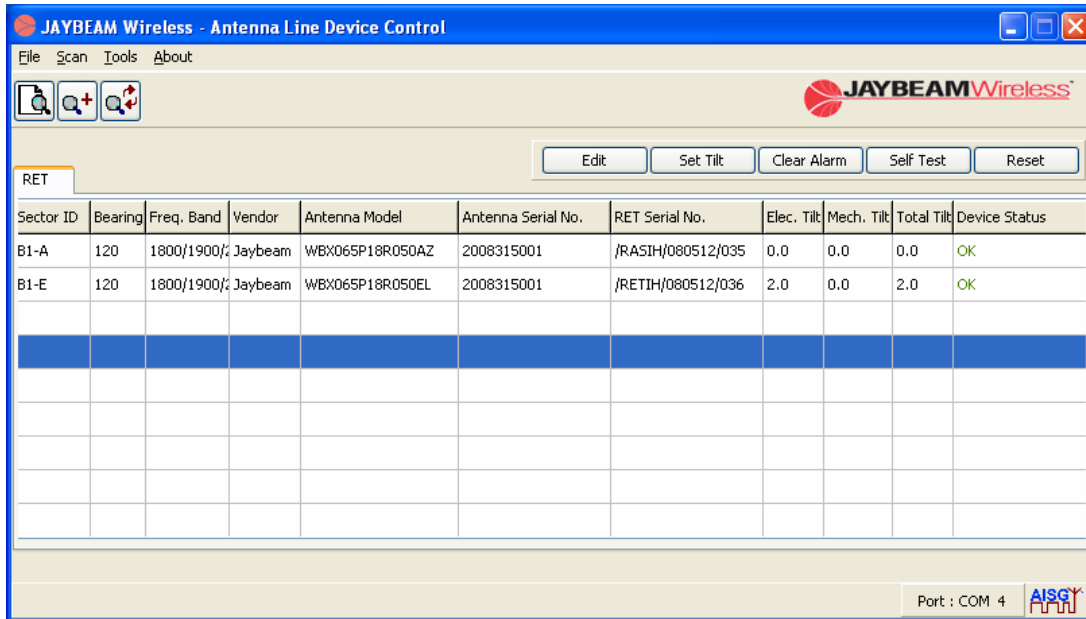
RET Model Name RASU-IA01 RET Hardware Version JBW-02

RET Serial No. /RASIH/080512/035 RET Software Version JB4.01D

Min Tilt - Max Tilt -30.0 - 30.0 Current Tilt 0.0 Set tilt Get tilt

Close

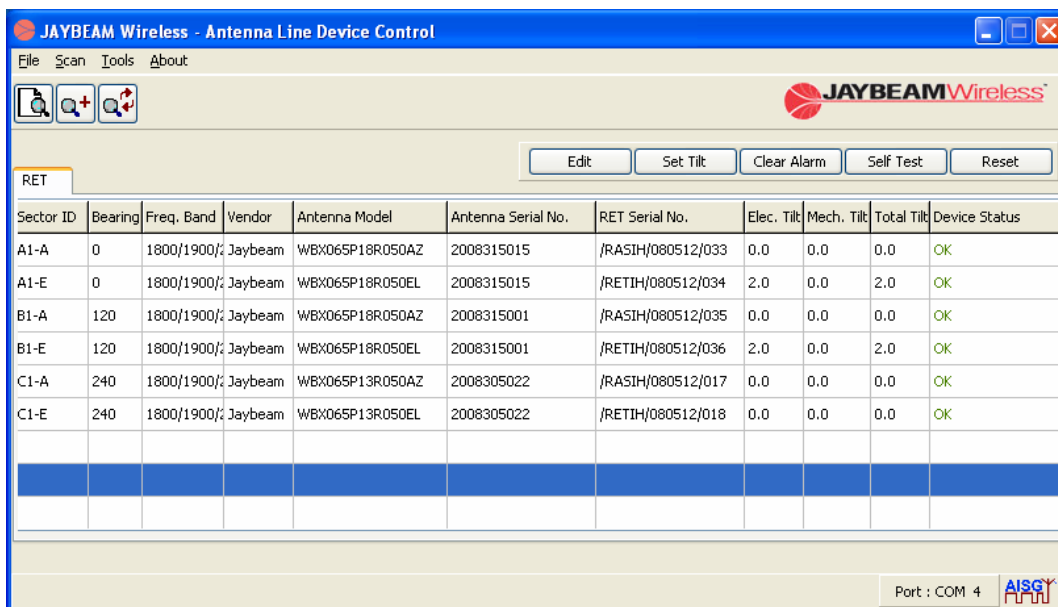
Repeat step (2) for the Elevation actuator.



Note: Mark the Sector ID on the antenna so that the installation crew will know where to install the antenna!

- 3) Repeat steps 1 & 2 for all antennas at this site:
- 4) Using the AISG control cables for this site, connect all antennas together and scan:

This step will verify that all AISG cables are functioning correctly and will verify that the actuators have been programmed correctly. The antennas are now ready to be installed.

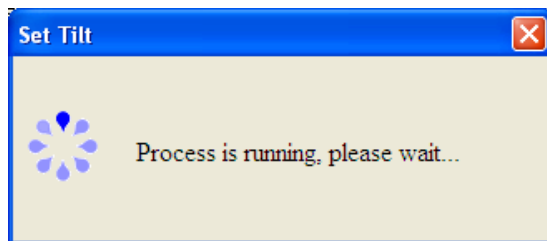
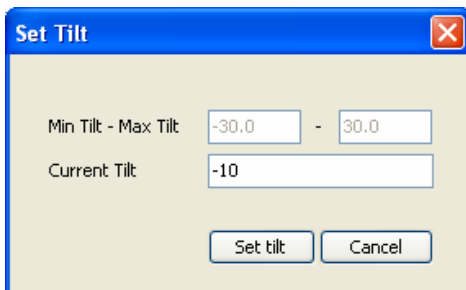


Changing the antenna Azimuth setting:

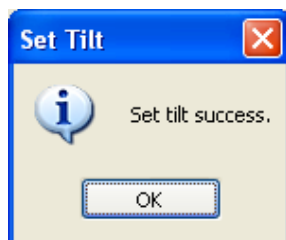
The “Electrical Tilt” of each azimuth actuator is equivalent to the “Azimuth Offset” as defined by the AISG-ES-RAS v2.1.0 extension, which states:

“Azimuth Offset = The angle, expressed in degrees, between the azimuth bearing of an antenna and the maximum of its main beam in the azimuth plane. A positive azimuth offset means that the antenna beam is directed to a compass heading numerically greater than the azimuth bearing. An antenna has separate values for azimuth bearing and azimuth offset. The azimuth bearing is fixed by the geometry of the installation. The azimuth offset is remotely controllable and variable.”

To change the Azimuth Offset, select the azimuth actuator of the antenna you would like to adjust and select the [Set Tilt] button from the menu bar. Enter the number of degrees you would like to rotate the antenna beam (positive = clockwise rotation, negative = counter clockwise rotation as viewed from above) and click the [Set tilt] button.

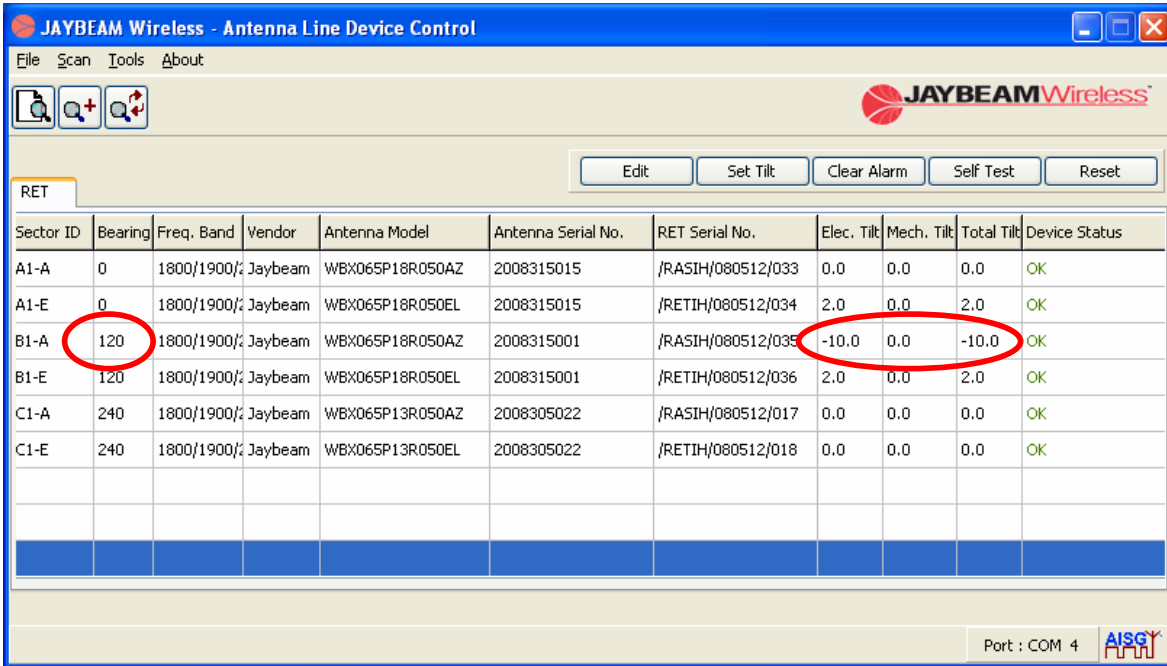


The message below will notify you that the process was successful. Click the [OK] button to close the message window.



The Azimuth offset will now appear on the display in the “Elec. Tilt” column to indicate the change in beam direction. The true beam direction can be determined by adding the “Bearing” to the “Elec. Tilt.” In the case below, the azimuth pointing direction of the antenna beam will be:

$$120 \text{ degrees} + (-10 \text{ degrees}) = 110 \text{ degrees}$$



Sector ID	Bearing	Freq. Band	Vendor	Antenna Model	Antenna Serial No.	RET Serial No.	Elec. Tilt	Mech. Tilt	Total Tilt	Device Status
A1-A	0	1800/1900/	Jaybeam	WBX065P18R050AZ	2008315015	/RASIH/080512/033	0.0	0.0	0.0	OK
A1-E	0	1800/1900/	Jaybeam	WBX065P18R050EL	2008315015	/RETIH/080512/034	2.0	0.0	2.0	OK
B1-A	120	1800/1900/	Jaybeam	WBX065P18R050AZ	2008315001	/RASIH/080512/035	-10.0	0.0	-10.0	OK
B1-E	120	1800/1900/	Jaybeam	WBX065P18R050EL	2008315001	/RETIH/080512/036	2.0	0.0	2.0	OK
C1-A	240	1800/1900/	Jaybeam	WBX065P13R050AZ	2008305022	/RASIH/080512/017	0.0	0.0	0.0	OK
C1-E	240	1800/1900/	Jaybeam	WBX065P13R050EL	2008305022	/RETIH/080512/018	0.0	0.0	0.0	OK