

# Equipment Location - Certification Information Database (EL-CID)

*Version 5*

## User Training Manual

Prepared by:



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## **EL-CID Point of Contact Information**

### ***EL-CID Support Center Web Site***

<http://www.ntia.doc.gov/osmhome/elcid/>

### ***NTIA Office of Spectrum Management Web Site***

<http://www.ntia.doc.gov/osmhome/osmhome.html>

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## INTRODUCTION

The intent of this manual is to introduce you to some of the capabilities of the EL-CID program. An introduction to all of the capabilities would occupy more time than we are allotted. The user should become familiar with the help file that gives a greater in-depth explanation of the options of the model. Additional help can be obtained from the resources printed on the inside cover of this document.

We understand that these examples are simple in nature and may not completely mimic your operation, but are employed to demonstrate the capabilities of the system.

If you have any comments please send them to the EL-CID help desk or if you have a suggestion for the program operation, write a program change request and sent it to the EL-CID help desk.

Thank you,

**EL-CID Development Team**  
**EL-CID Training Team**

Please click on the desktop icon “Student Information Sheet” and fill in your information at this time.

## USEFUL TERMS AND HINTS

**Save** There are at least three ways to save data:

1. **Click** on the save button . This will save your data and allow you to continue processing.
2. **Click** on the left side of the screen in the tree view section (any node or at the bottom of the tree). This will save your data and allow you to continue processing.
3. **Click** on the close button . This will save your data and close the certification.

### Tree View

Refers to the left side of the screen which presents an image similar to windows explorer.

### Expand Tree View

To expand the tree view, highlight a node in the tree view and press  . All nodes under the highlighted node will be expanded. You can also expand the node by **clicking** on the  button.

### Collapse Tree View

To collapse the tree view, highlight a node in the tree view and press  . All nodes under the highlighted node will be collapsed. You can also collapse the node by **clicking** on the  button.

### Data Grid

Refers to the right side of the screen and is a place to input data.

### Move between lines in the data grid.

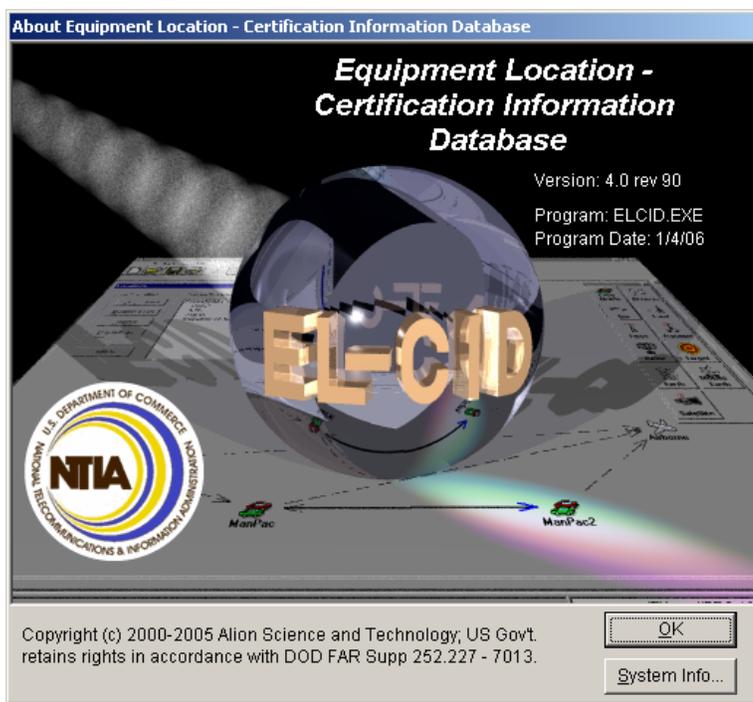
To move between lines in the data grid, **click** the mouse  in the data field, or use the   to move up or the   to move down the grid. The  also moves the cursor between fields in the data grid.

**User Actions and input data**

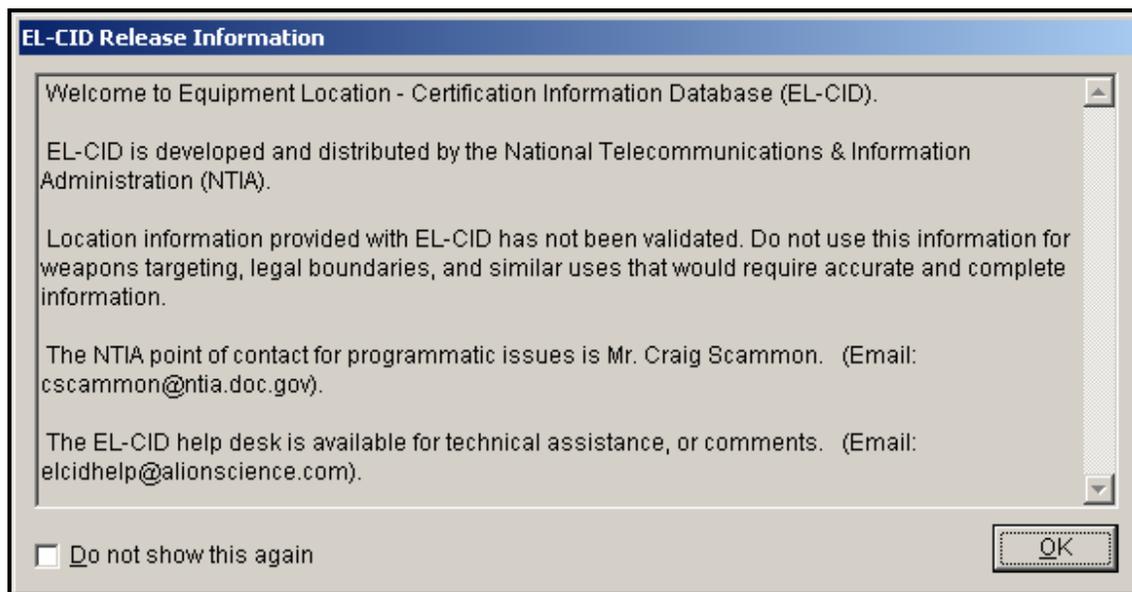
User actions and input data are highlighted.

# 1. STARTING THE EL-CID PROGRAM

- Step 1.** To start the EL-CID program, **double-click** the EL-CID icon  on the Windows desktop. The **EL-CID Splash** window will be displayed.



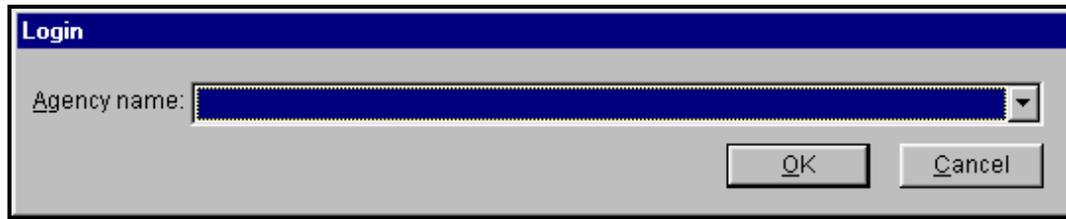
The **EL-CID Release Information** window will then be displayed.



- Step 2.** Check the **Do not show this again** check box if you don't want to see the **Release Information** window in the future and then **click OK**.

**HINT:** If you check  **Do not show this again** you can still retrieve this window by resetting the option in the **Preferred Settings** window.

The **Login** window is displayed.



**Step 3.** Choose your **Agency name** by **clicking** the **down arrow** button  and **clicking** on your agency (e.g., AR - Department of the Army) in the list that drops down. For purposes of this training, choose AR – Department of the Army.

**HINT:** You can type in the first character of your agency name abbreviation to go down in the list. Pressing the letter again will go to the next agency whose abbreviation begins with the letter.

**Step 4.** **Click OK.** The **Startup EL-CID Wizard** window is displayed.



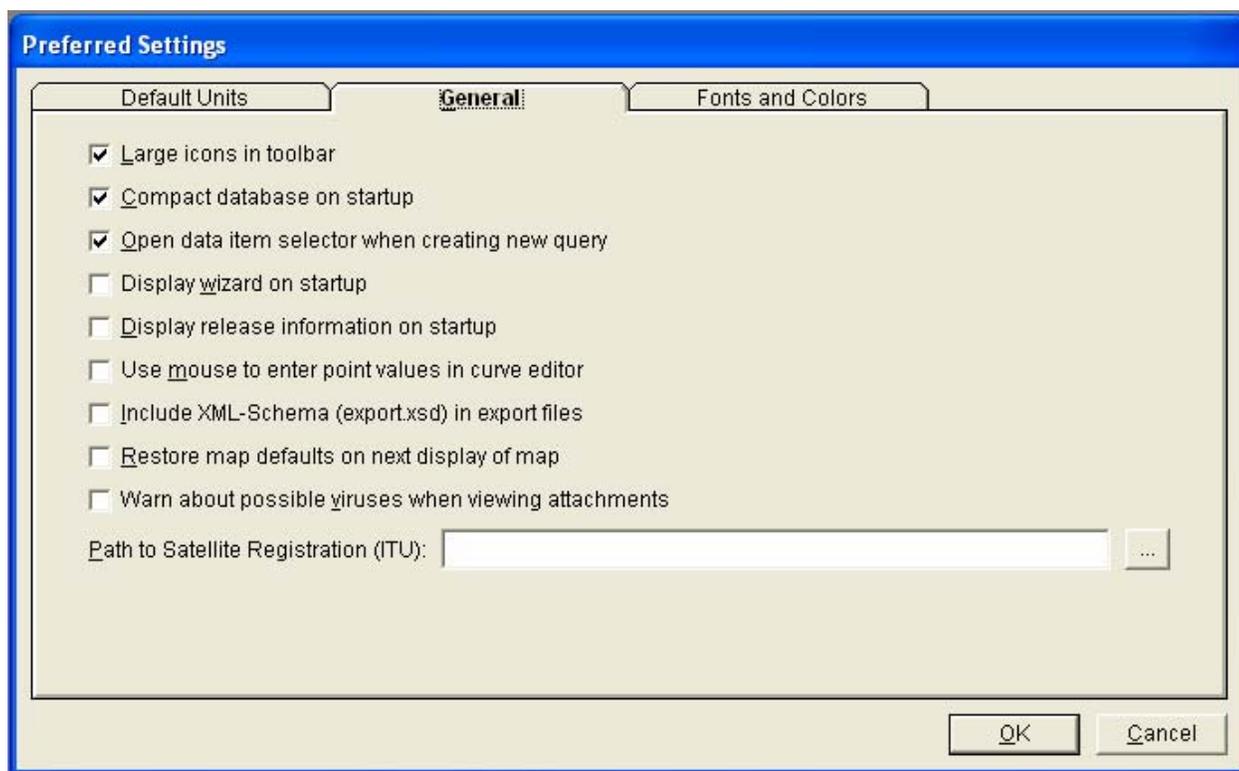
**Step 5.** You may select what you want to do by clicking on one of the radio buttons, and then **clicking** **OK**. You may **click** **Cancel** if you want to go directly into the EL-CID program without the aid of the Startup Wizard.

**HINT:** Check the **Do not show this again** check box if you don't want to use the Startup Wizard in the future.

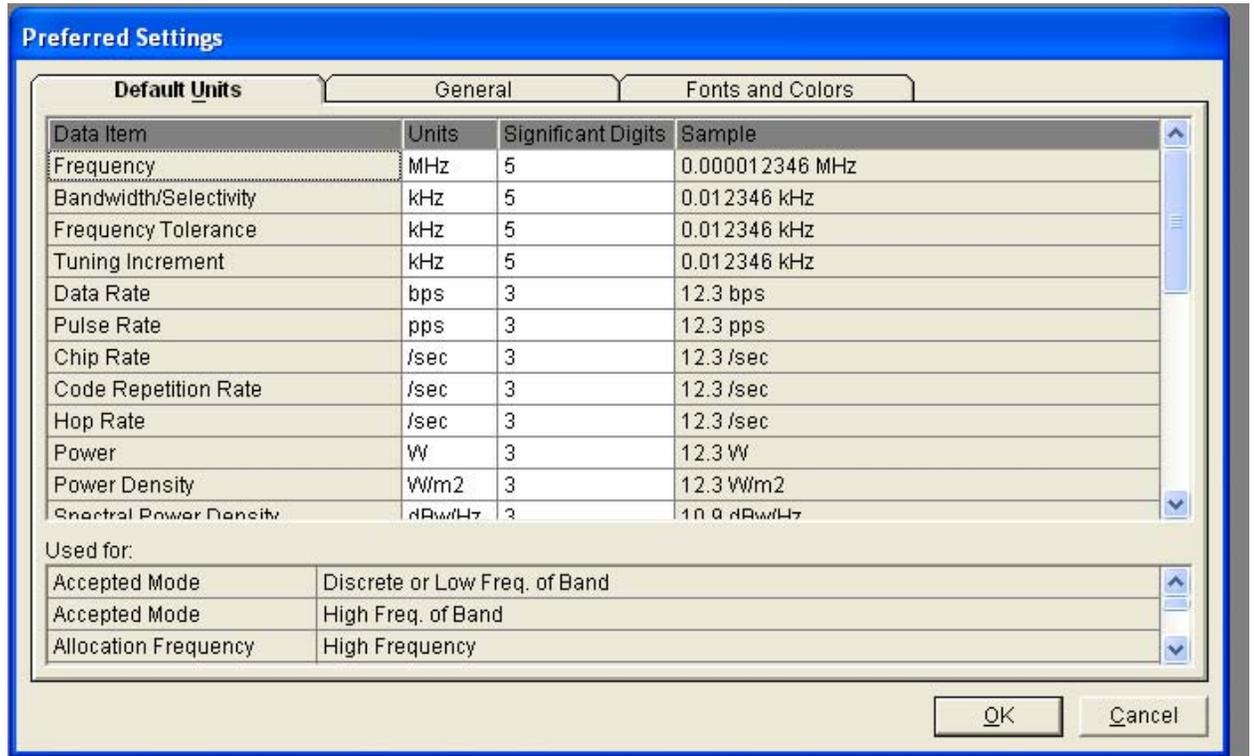
## 2. SETTING SYSTEM PREFERENCES

**Step 1.** The **Preferred Settings** window permits you to set the default units for entry of data items that have associated units and to set the tool bar to use large or small icons. To change your settings, **click** the **Preferences** button  on the tool bar.

The **Preferred Settings** window is displayed. The options you see checked in the screen above are the installed defaults.



The **Default Units** tab permits you to control the units used to display numeric quantities throughout the program. Click in the field to select it and click the units to get the drop down list.



**HINT:** In **Used For:** The tree view node name is given first, followed by the field name.

Step 2. Click **OK** (to save changes) or **Cancel**.

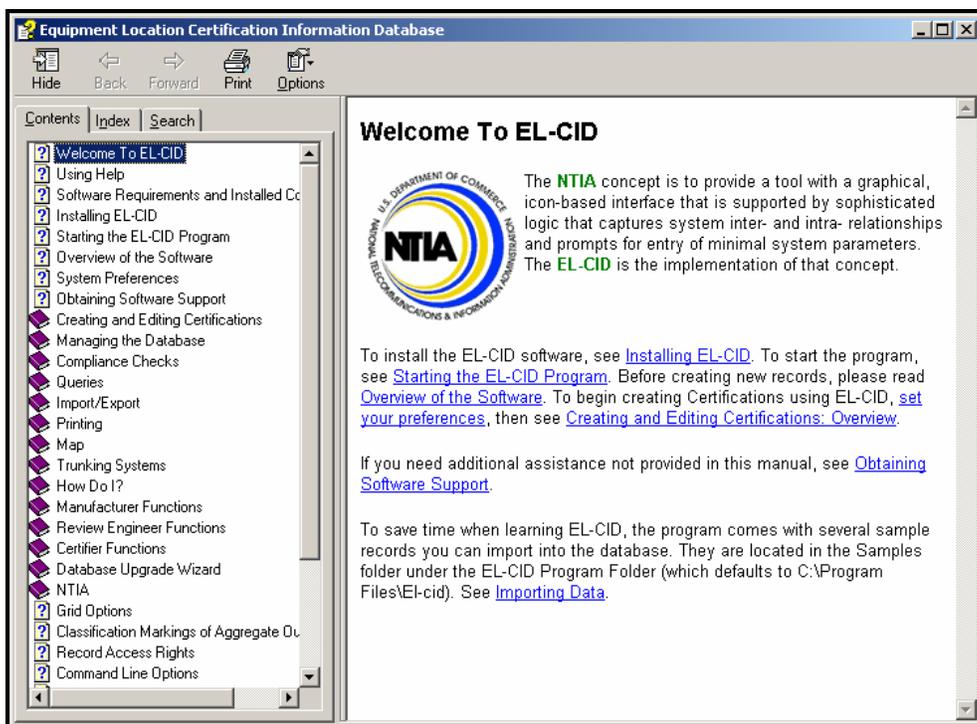
### 3. REVIEWING HELP TOPICS

This option is used to view the EL-CID help information.

Step 1. **Select Help | Contents and Index**, or **select** the  button.



The EL-CID help file will be displayed. These help topics have been saved to a Microsoft Word document and it is on the installation CD (**ELCIDhelp.doc**) and in the Documents folder under the EL-CID program.

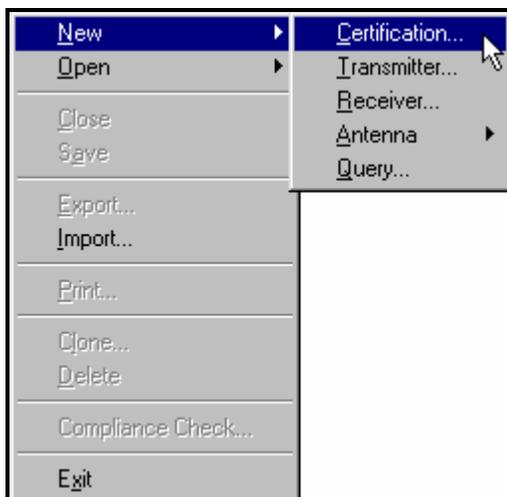


Step 2. **Close** the Help window by **clicking** the close button  in the upper right corner.

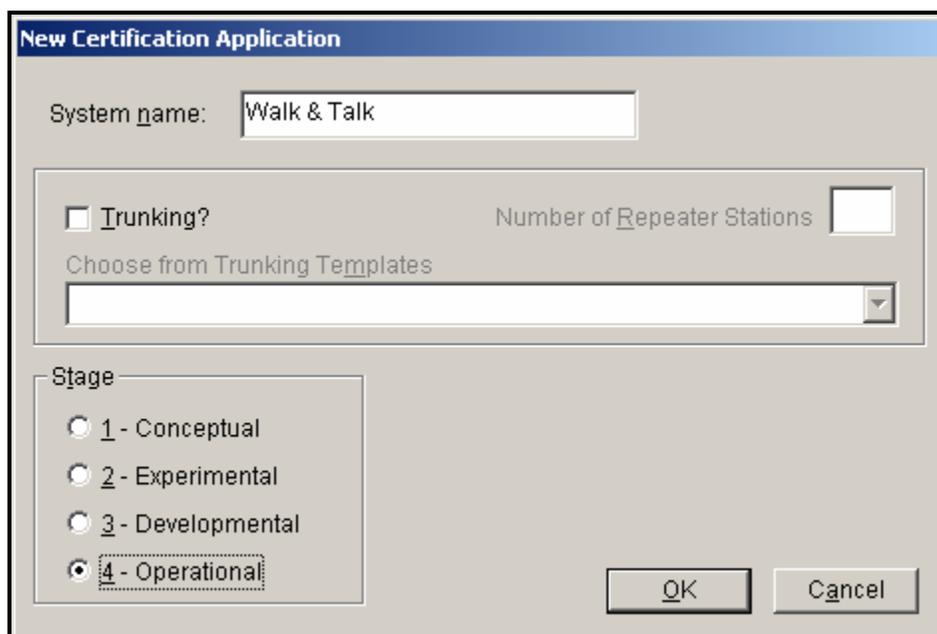


## 4. CREATING A NEW CERTIFICATION

Step 1. Click the **Create New Certification** button  on the tool bar or from the File menu **select New | Certification.**



The **New Certification Application** window is displayed.

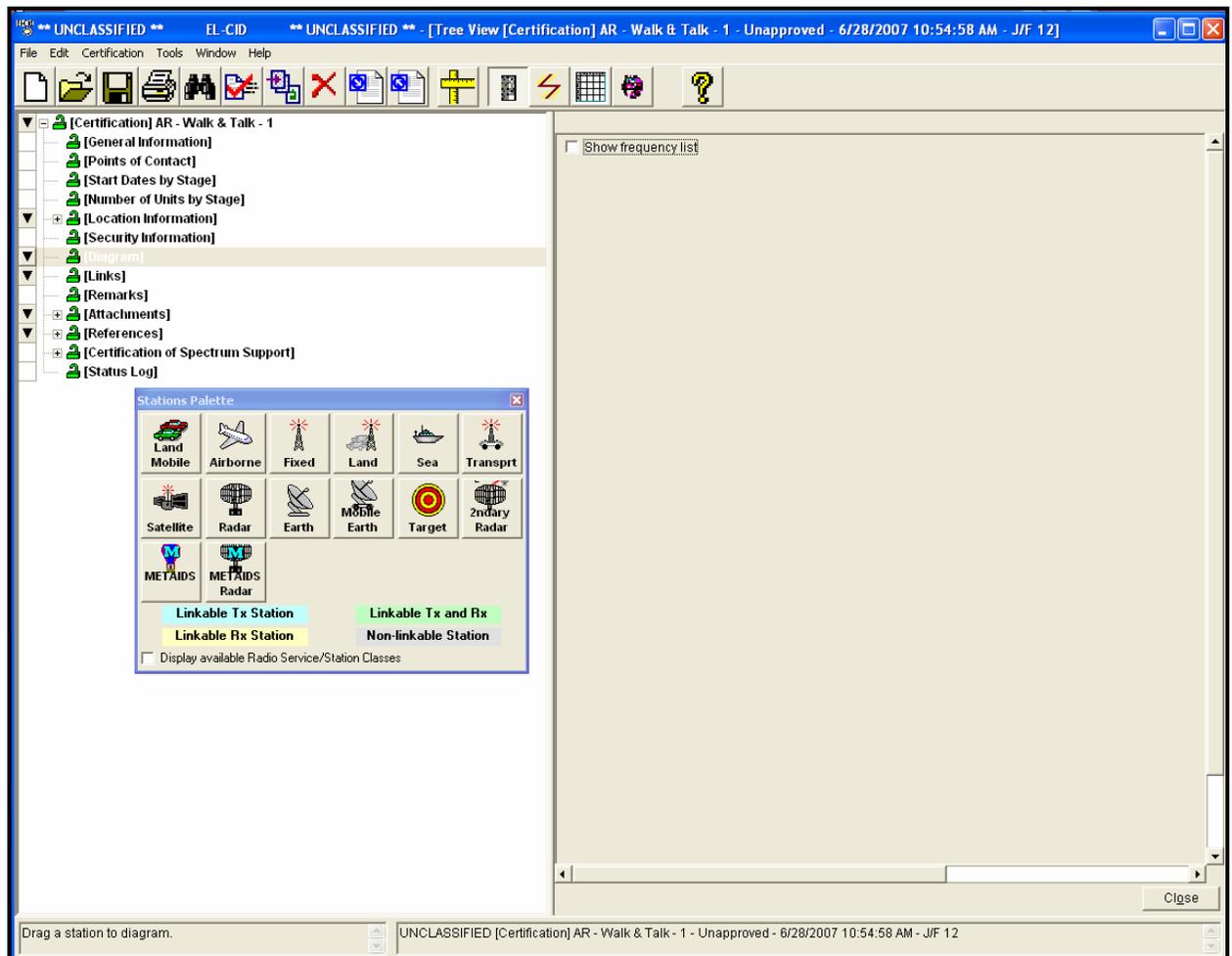
A screenshot of the 'New Certification Application' dialog box. The title bar reads 'New Certification Application'. The 'System name' field contains 'Walk & Talk'. There is a checkbox for 'Trunking?' which is unchecked. To its right is a 'Number of Repeater Stations' field with a small spinner box. Below these is a dropdown menu labeled 'Choose from Trunking Templates'. The 'Stage' section has four radio button options: '1 - Conceptual', '2 - Experimental', '3 - Developmental', and '4 - Operational', with '4 - Operational' selected. At the bottom right are 'OK' and 'Cancel' buttons.

Step 2. Enter the following data and then click OK.

Field	Value
System name	Walk & Talk
Stage	4-Operational

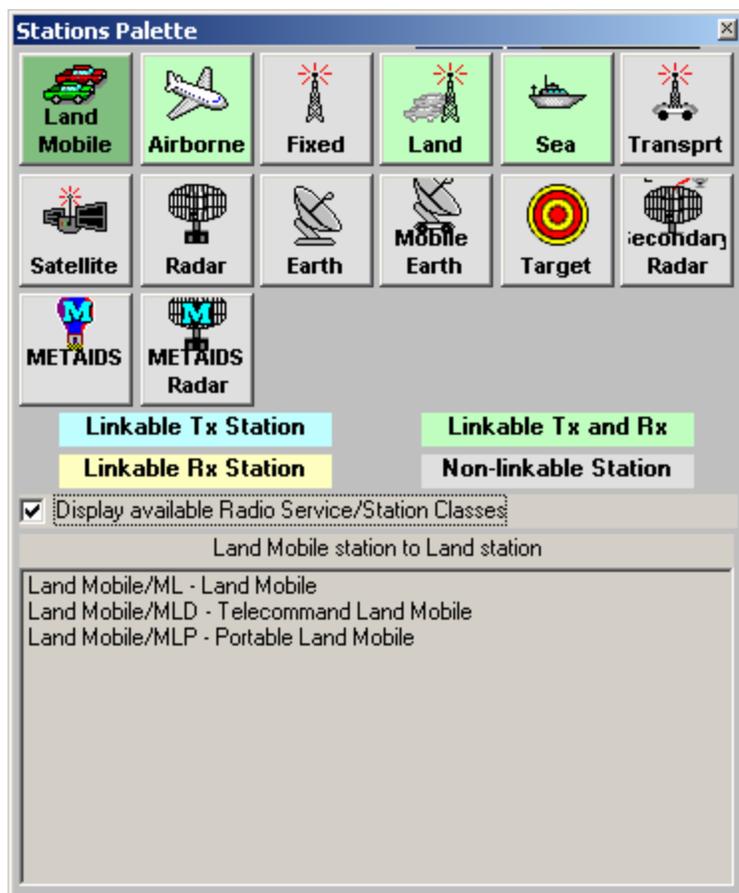
**HINT:** You may not use the word “and” in a System Name. You may use the ampersand or “AND” (uppercase).

The **Tree View** is displayed with a blank Line Diagram automatically selected and the stations palette displayed.



## 4.1 Selecting Stations

**Step 1.** On the **Stations Palette** window check the **Display available Radio Service/Station Classes** check box.

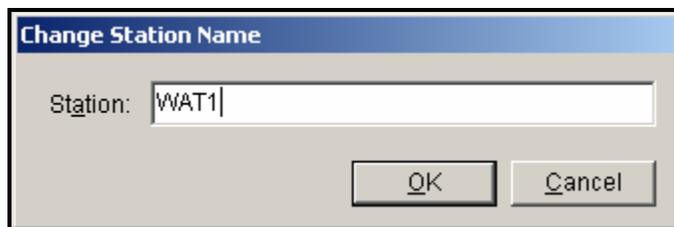


**HINT:** The icons you choose for your diagram will determine the radio service and station classes available for the links you draw between them. In addition there are rules about which icons can be linked to each other, these rules are displayed using various colors.

**Step 2.** **Click** on the **Land Mobile** icon and **drag** it to the drawing area on the right.

The **Change Station Name** window is displayed with Land Mobile as the station name.

**Step 3.** **Type WAT1** and then **click OK**.

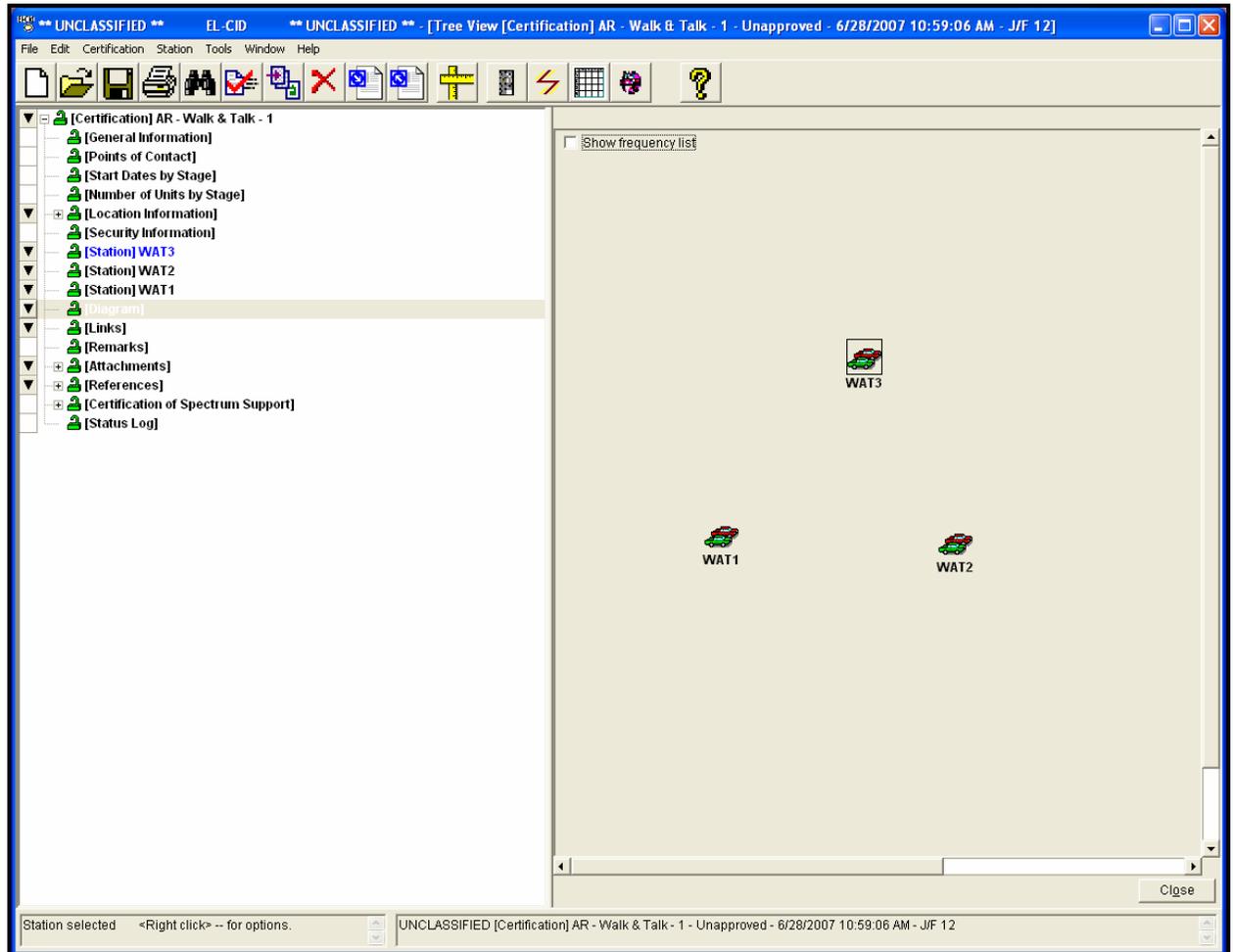


**Step 4.** **Drag two more Land Mobile icons to the drawing area and name them WAT2 and WAT3.**

**Step 5.** Close the palette using the **X** in the upper right or by clicking the Stations Palette button  from the tool bar.

**HINT:** The Stations Palette may be redisplayed by clicking the Stations Palette button again.

The diagram will resemble the following.

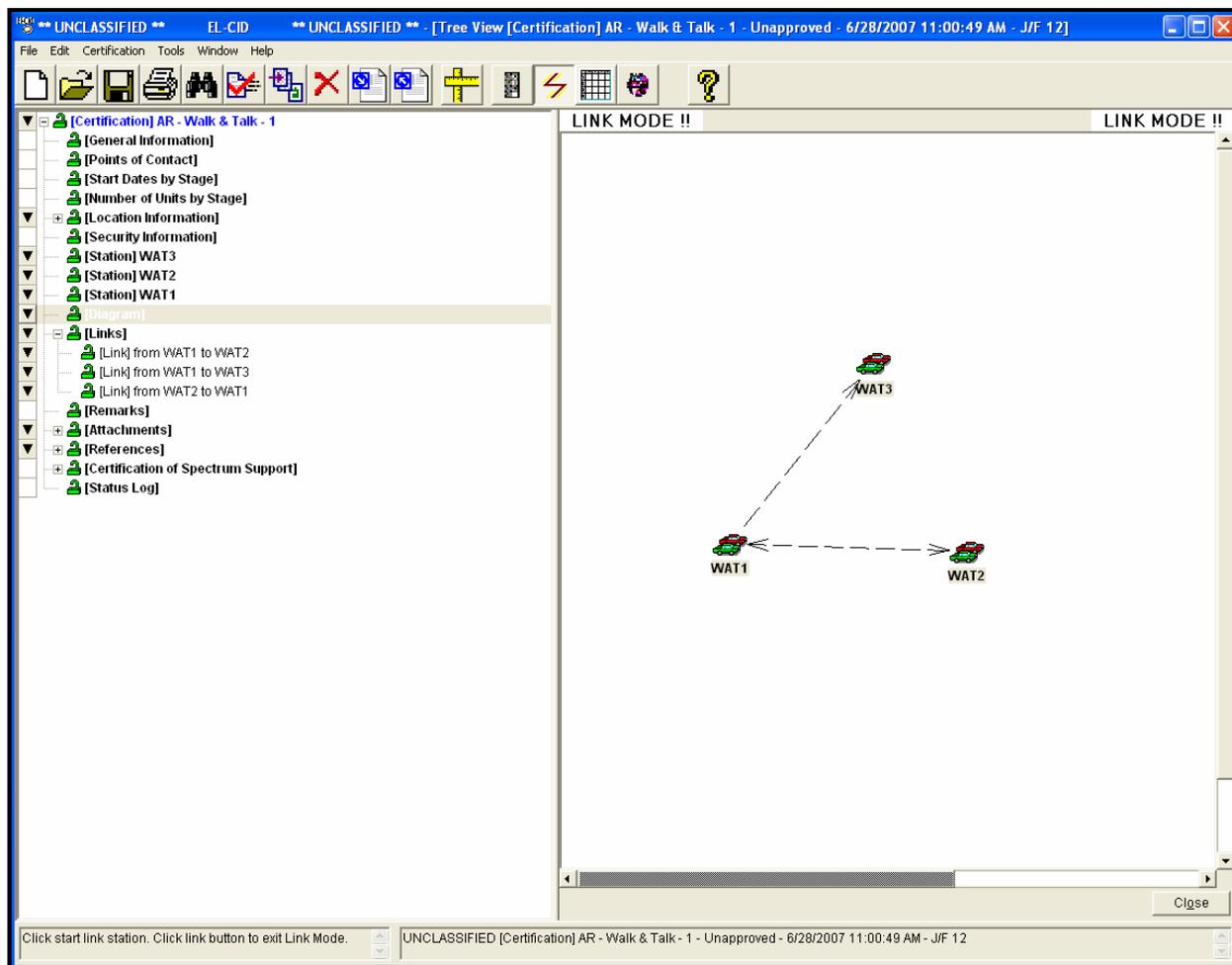


**HINT:** You may move the stations by clicking and dragging them.

**HINT:** When you hover the mouse pointer, the station type pops up in a small yellow box.

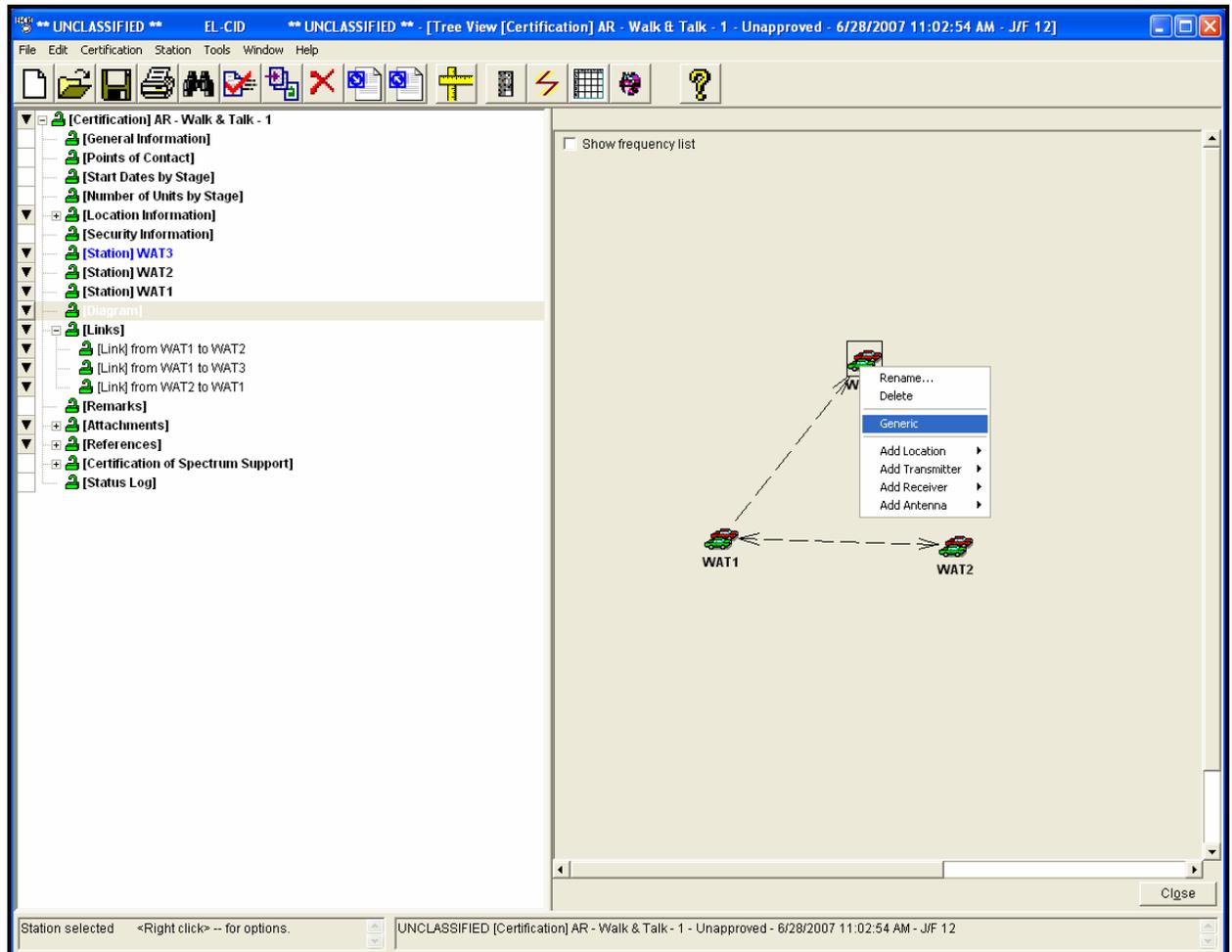
## 4.2 Drawing Links between Stations

- Step 1.** Click the **Create New Links** button  on the tool bar. The words "Link Mode !!" appear at the top of the diagram, and the screen changes color, whenever the program is in Link Mode.
- Step 2.** Click **once** on the transmitting station **WAT1** icon, and then **click once** on the receiving station, **WAT2** icon. A dotted line will be drawn between the stations, with an arrowhead at the receiving end of the link. Notice that the link was added to the tree view.



- Step 3.** Draw additional links **from WAT2 to WAT1** and **from WAT1 to WAT3**. Do not draw a link from WAT3 to WAT1.
- Step 4.** Click the **Create New Links** button  on the tool bar. The words "Link Mode !!" will disappear from the top of the diagram and the screen will change color.

Step 5. **Right-click** on the **WAT3** Station icon, and then **click Generic** in the popup menu that is displayed,



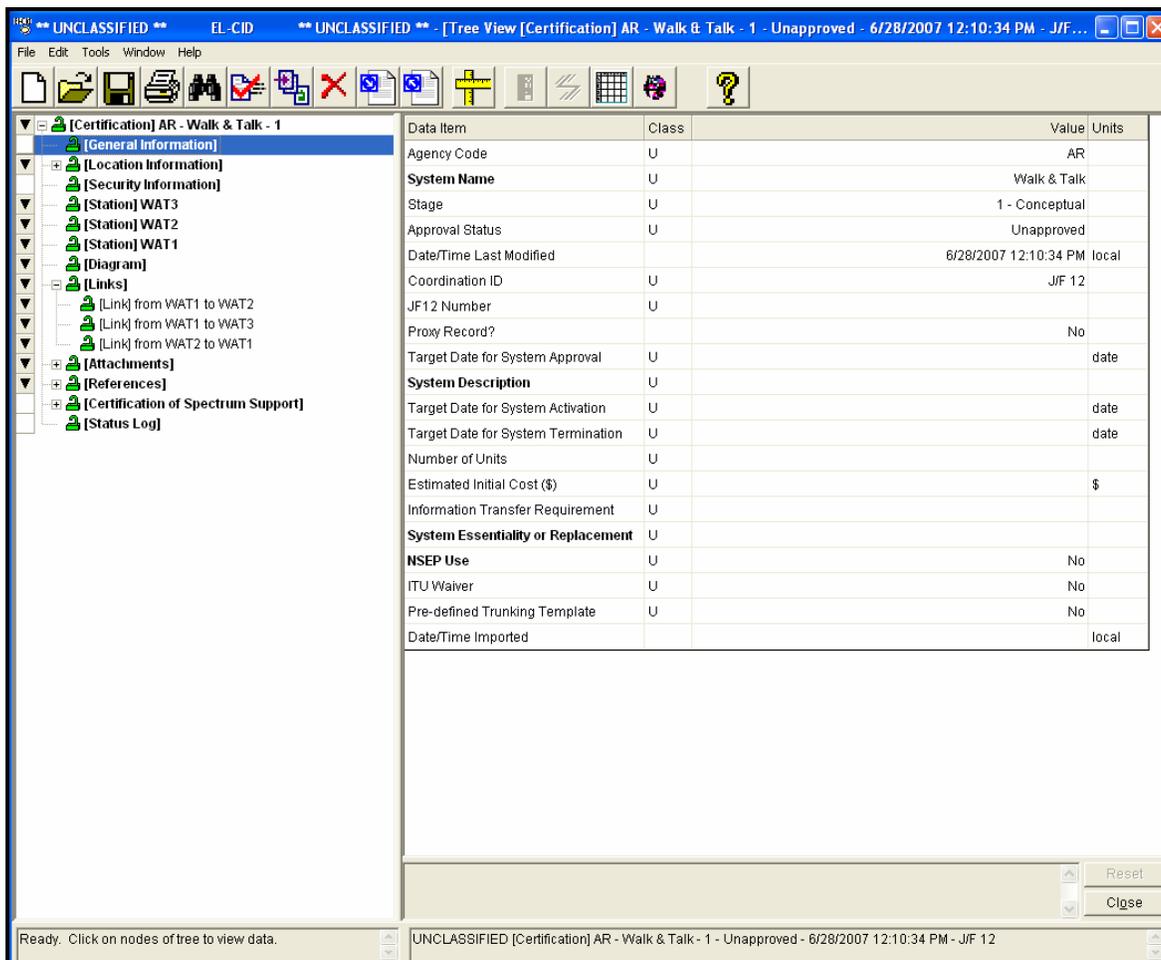
A shaded background is displayed around the Station icon to indicate that it is generic.



**HINT:** A generic icon does not require receiving equipment data to be entered. The generic icon may be used as a termination for a link but cannot be used as a transmitting station. The transmitting station is now able to enter the link data between the transmitter and the generic station.

### 4.3 Entering General Information

Step 1. Click on the **General Information** node in the tree view.



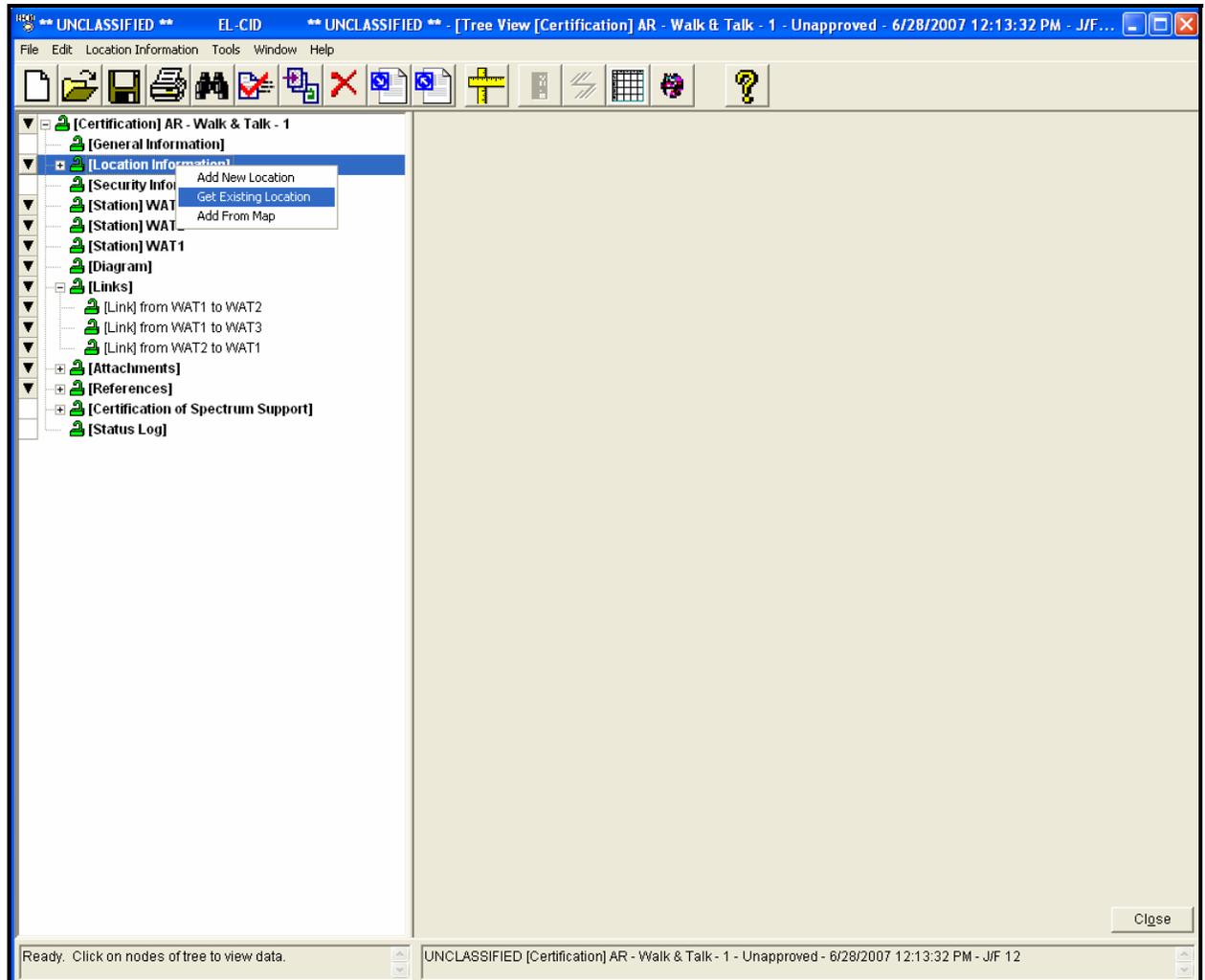
Step 2. Enter the following information by clicking in the appropriate field and entering the information.

Field	Value
Target Date for System Approval	10/30/2007
System Description	This unit is a small, lightweight radio capable of providing two-way ground communications
Target Date for System Activation	10/30/2007
Target date for System Termination	10/30/2020

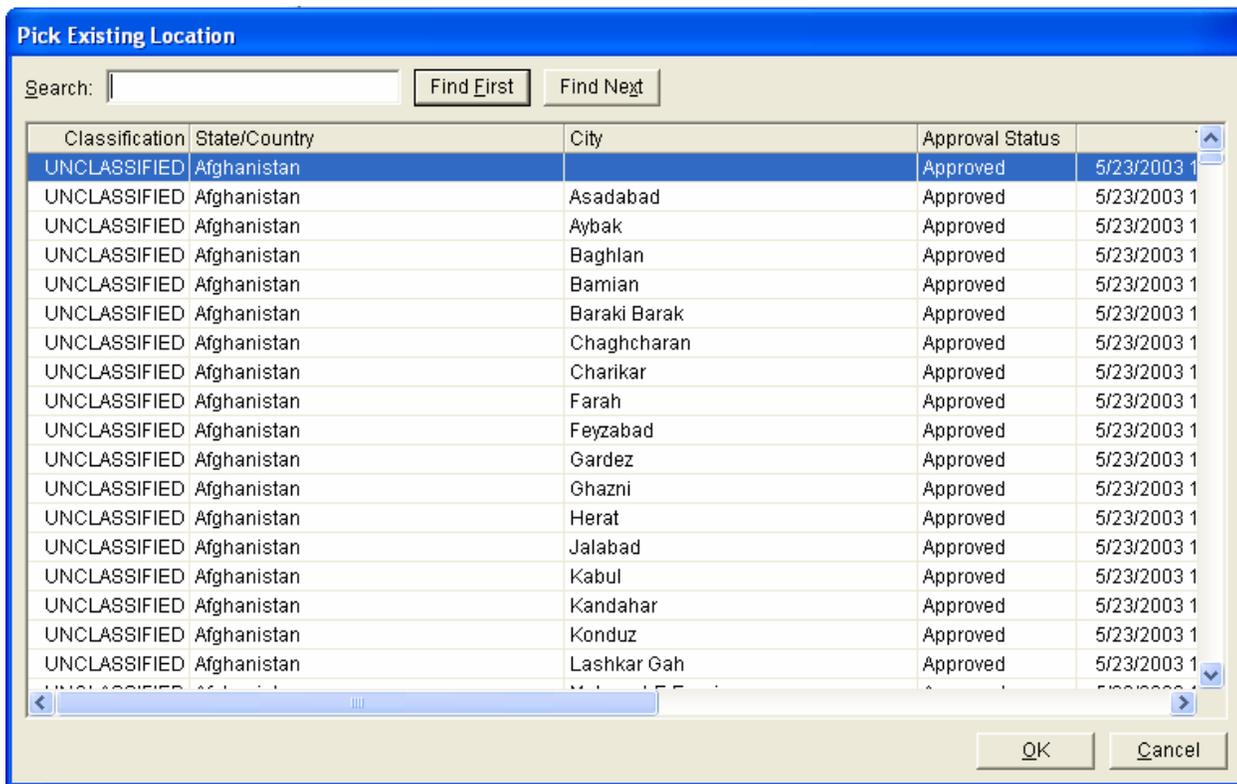
**HINT:** If entering data with units, select the units first, then enter the data. Check each data field to determine if there is a drop down list (indicated by ) , an expanded text/memo field or user select list (indicated by  ). Entries in **BLUE** indicate that the data is in the correct format. Entries in **RED** indicate that there is a problem with the data format. When the data is saved by clicking on a node in the tree view, or by clicking  , the data will turn **BLACK**. In general If you click anywhere else on the screen outside the data grid, the data that you have entered will be saved to the database.

## 4.4 Entering Location Data

Step 1. **Right-click** on the **Location Information** node in the tree view, then **click Get Existing Location**.

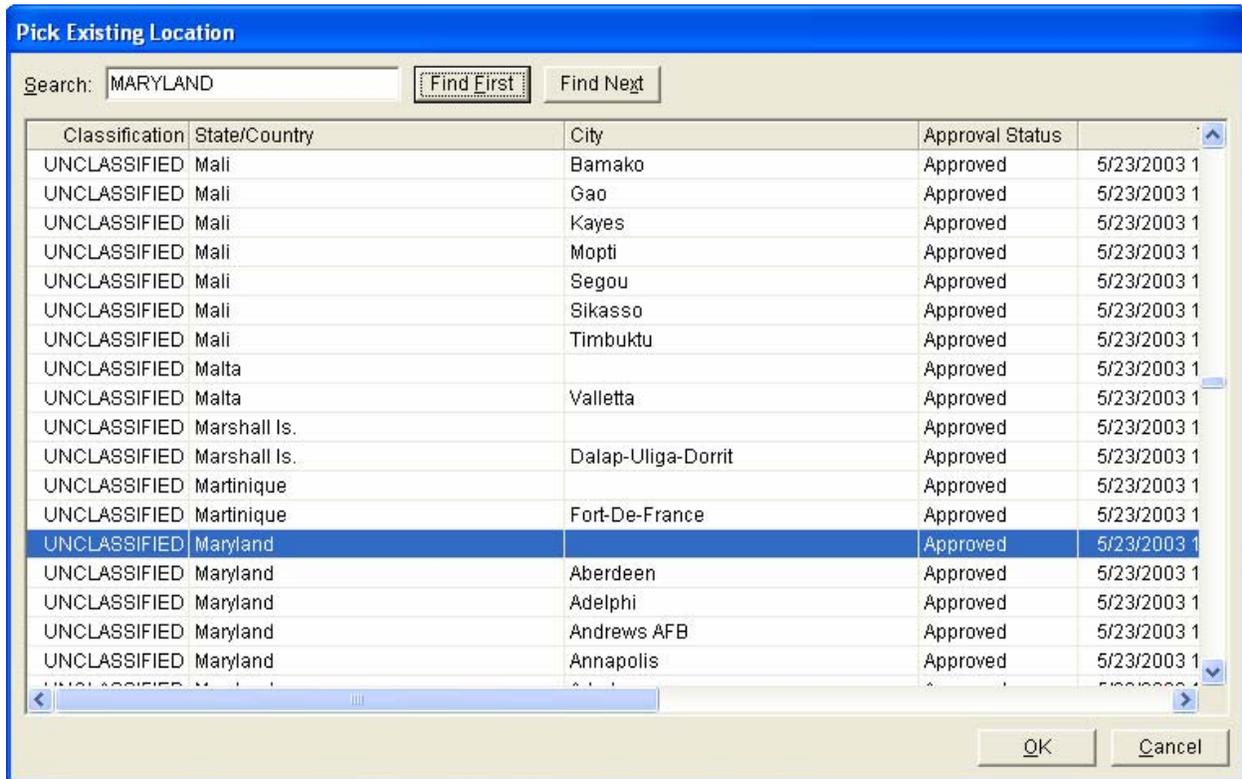


The Pick Existing Location window is displayed.

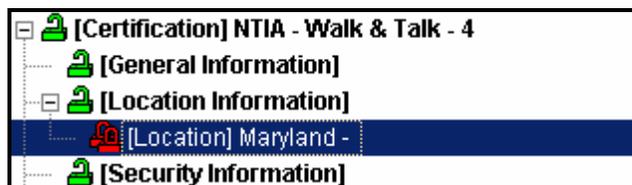




Step 2. Type **Maryland**, click the **FindFirst** button or the **Enter** key. The list scrolls down and **Maryland** (without a city) is highlighted.



Step 3. Click **OK**. The location data will be added and another entry in the tree view will be created.

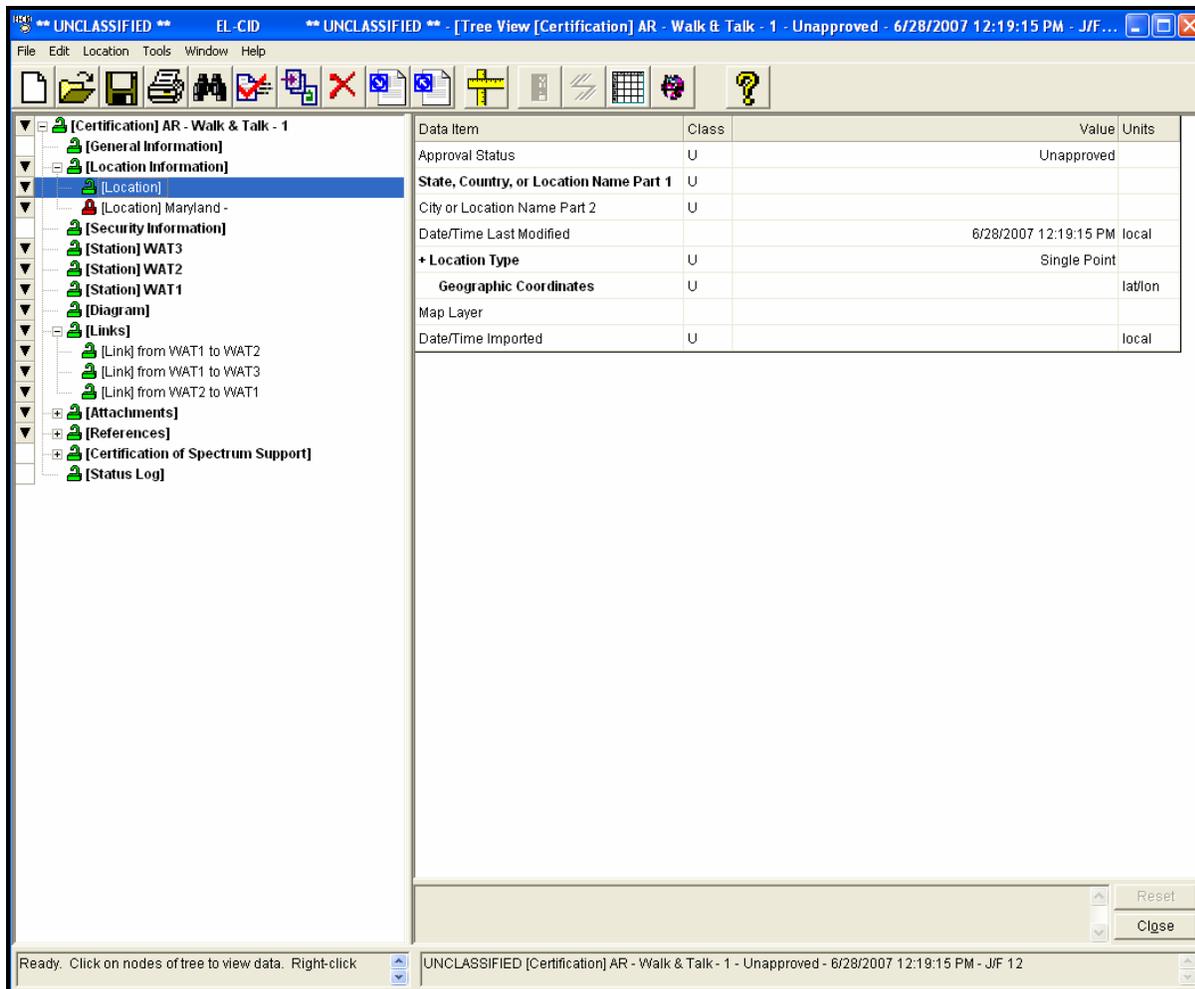


The red, closed padlock next to Maryland indicates that this is an Approved location and you are not permitted to alter the Maryland data.

Step 4. To create a new location, **right-click** on the **Location Information** node in the tree view and then **click Add New Location**.



The **New Location** data grid is displayed.



**Step 5.** Enter the following information.

Field	Value
State, Country, or Location Name Part 1	Virginia
City or Location Name Part 2	Training Area 1
Location Type	Center point and Radius
Geographic Coordinates	370000N 080000W
Radius	100 km

**HINT:** The Geographic Coordinates are divided into two segments in the data field (latitude and Longitude).

**Step 6.** Save the data.

## 4.5 Entering Application Classification Markings

**Step 1.** Click the **Security Information** node from the tree view. The **Security Information** window will be displayed.

The screenshot shows the 'Security Information' window with the following structure:

- Tab 1: Classification Source(s)
- Tab 2: Declassification Instructions
- Tab 3: Downgrading Instructions
- Tab 4: Special Handling (Active)

The 'Special Handling' tab contains a table with the following data:

Code	Description
<input checked="" type="checkbox"/> A	Approved for public release; distribution is unlimited (DoD Directive 5230.24)
<input type="checkbox"/> B	Releasable to soil country and the North Atlantic Treaty Organization (NATO); otherwise, not releasable outside the US Government in accordance with (IAW) Section 552 (b)(1) of Title 5 of the US Code.
<input type="checkbox"/> E	Not Releasable outside the US Government IAW Section 552 (b)(1) of Title 5 of the US Code.
<input type="checkbox"/> F	Not releasable to foreign nationals and not releasable outside the US Government IAW Section 552 (b)(1) of Title 5 US Code.
<input type="checkbox"/> H	Releasable to soil country only; otherwise, not releasable outside the US Government IAW Section 552 (b)(1) of Title 5 US Code.
<input type="checkbox"/> J	Contingency Assignment - The record contains unified commander comments only; not releasable to foreign nationals unless formally coordinated; otherwise, not releasable outside the US Government IAW Section 552 (b)(1) of Title 5 US Code.
<input type="checkbox"/> K	Permanent Assignment - Available for contingency use within the theater after coordination with and approval of the cognizant unified commander - releasable to soil nation; otherwise, not releasable outside the US Government IAW Section 552 (b)(1) of Title 5 US Code.
<input type="checkbox"/> N	Releasable to NATO; otherwise, not releasable outside the US Government IAW Section 552 (b)(1) of Title 5 US Code.
<input type="checkbox"/> -	Proprietary; otherwise, not releasable outside the US Government IAW Section 552 (b)(1) of

At the bottom of the window, the 'Record Classification' is set to 'UNCLASSIFIED'. There are 'OK' and 'Cancel' buttons.

All Certification records are required to have a Special Handling Code. When you create a brand new Certification, the record is unclassified and the Special Handling Code defaults to "A", which means unlimited distribution. If a record becomes classified, the "A" code is erased and you must specify a new Special Handling Code. In addition, all classified records are required to have a Classification Source and Declassification Instructions. Secret records may also have Downgrading Instructions.

When the record is classified, use the 4 tab views on this screen to enter the appropriate security data.

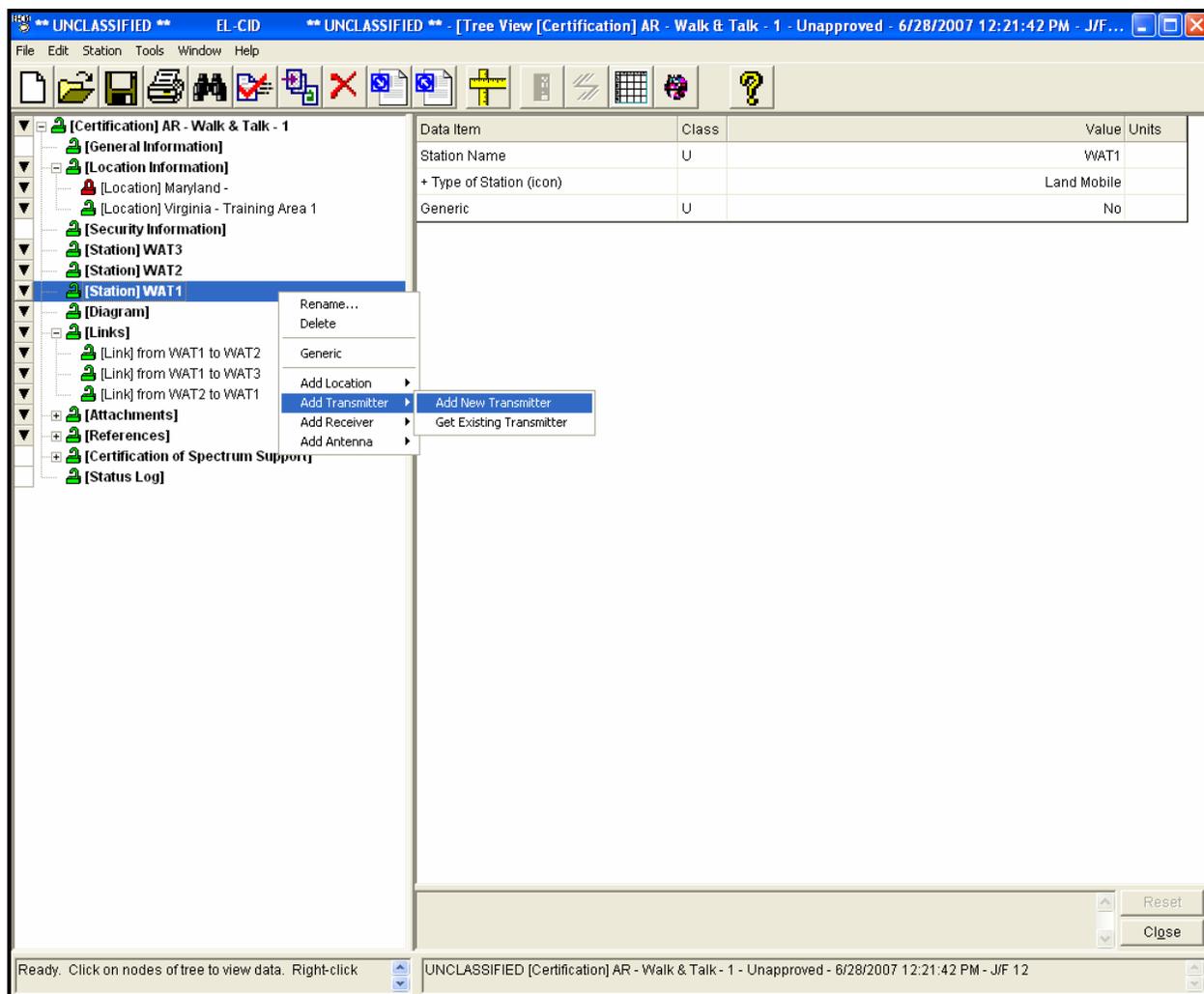
**Step 2.** Click **OK** to save the data.

## 4.6 Entering Station Data

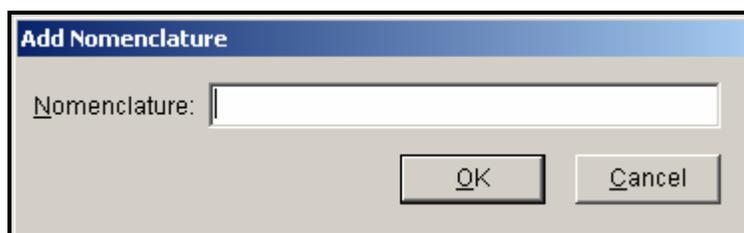
Station data consists of transmitter data, receiver data, and antenna data. If required, you could also enter specific location data.

### 4.6.1 Entering Transmitter Data

Step 1. **Right-click** on the **[Station] WAT1** from the tree view and then **select Add Transmitter | Add New Transmitter**.



The **Add Nomenclature** window will be displayed.



Step 2. Type **Walk & Talk Tx** and then **click OK**.

The **Transmitter** data grid is displayed:

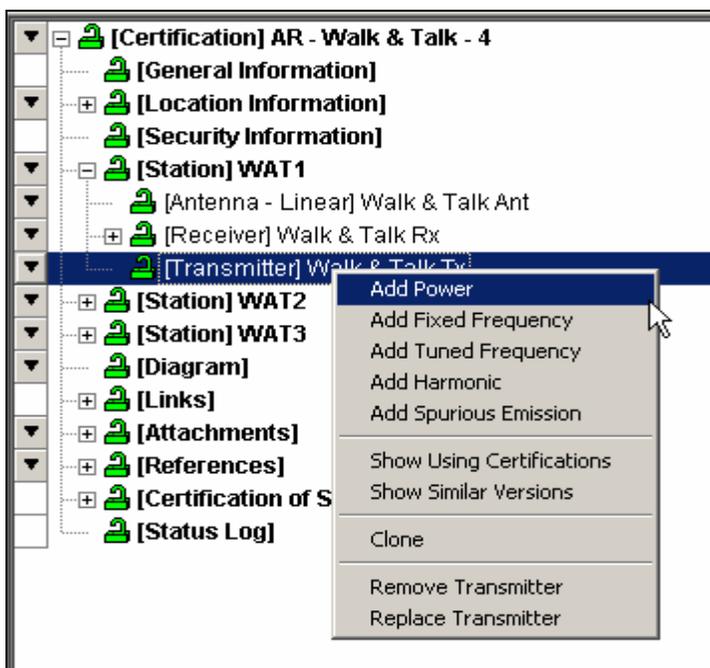
Data Item	Class	Value	Units
<b>Nomenclature</b>	U	Walk & Talk Tx	
Manufacturer	U		
Model Name and Number	U		
Approval Status	U	Unapproved	
Date/Time Last Modified		12/18/2006 11:06:34 AM	local
Coordination ID	U	J/F 12	
Proxy Record?		No	
FCC Acceptance Number	U		
<b>Frequency Stability (+/-)</b>	U		
<b>Frequency Stability Units</b>			
<b>Output Device</b>	U		
<b>Tuning Method</b>	U		
<b>Suppression of Harmonic</b>	U		No
Radar or Communications?	U	Communications	
Date/Time Imported			local

Step 3. **Enter** the following data

Field	Value
<b>Manufacturer</b>	<b>RELM Communications, Inc</b>
<b>Model Name and Number</b>	<b>Model 127A</b>
<b>FCC Acceptance Number</b>	<b>K95LT20002</b>
<b>Frequency Stability (+/-)</b>	<b>5</b>
<b>Frequency Stability Units</b>	<b>ppm</b>
<b>Output Device</b>	<b>Si Bipolar Transistor</b>
<b>Tuning Method</b>	<b>Synthesizer</b>

**HINT:** Manufacturer is a user select list (indicated by ). You can type relm in the manufacturer list to find the correct entry.

Step 4. **Right-click** on **[Transmitter] Walk & Talk Tx | Add Power**.



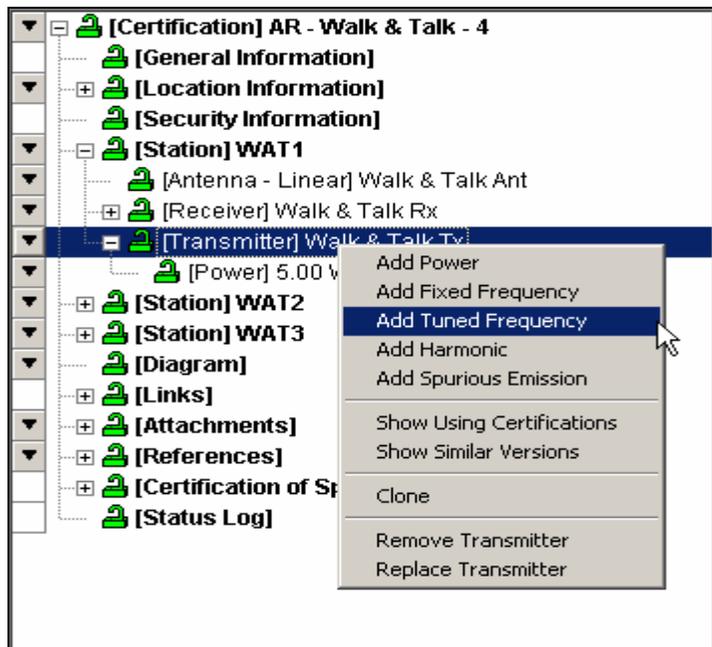
The **Power** data grid is displayed.

Data Item	Class	Value	Units
Power Type			
Power	U		W

Step 5. **Enter** the following data.

Field	Value
Power Type	Mean
Power	3 W

Step 6. Right-click on [Transmitter] Walk & Talk Tx | Add Tuned Frequency.



The Tuned Frequency data grid is displayed.

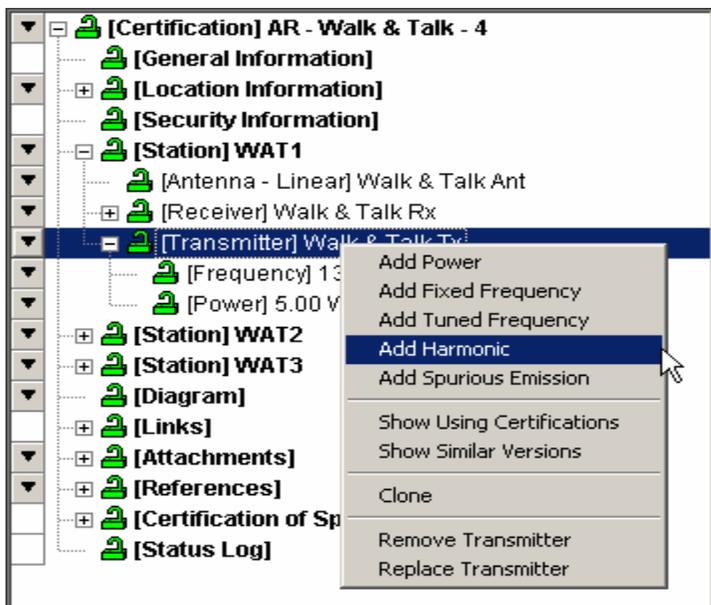
Data Item	Class	Value	Units
+ Fixed Frequency?		No	
<b>Lowest Tuned Frequency</b>	U		MHz
<b>Highest Tuned Frequency</b>	U		MHz
<b>Tuning Increment</b>	U		kHz
<b># of Frequencies Required for Operation</b>	U		
<b>Minimum Required Frequency Separation</b>	U		MHz

Step 7. Enter the following data.

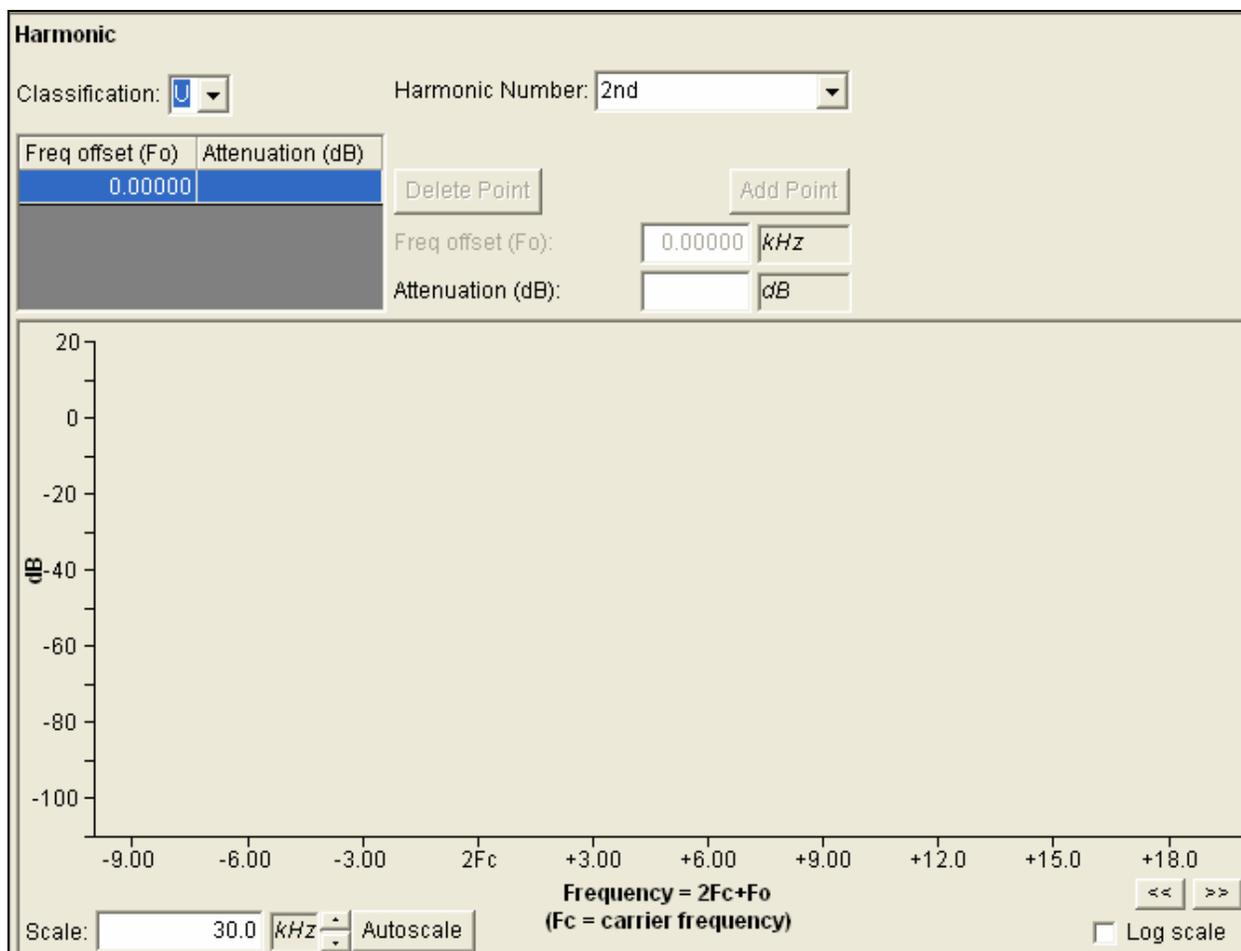
Field	Value
<b>Lowest Tuned Frequency</b>	<b>136 MHz</b>
<b>Highest Tuned Frequency</b>	<b>160 MHz</b>
<b>Tuning Increment</b>	<b>12.5 kHz</b>

**HINT:** Frequencies may be entered as M136, 136M, K136000, or 136000K, etc.

Step 8. Right-click on [Transmitter] Walk & Talk Tx | Add Harmonic.



The Harmonic Level curve window is displayed.



Step 9. **Enter** the following data and **Save**.

Field	Value
Harmonic Number	2nd
Attenuation	-60 dB

Step 10. **Enter** another harmonic data set as shown below, following step 8.

Field	Value
Harmonic Number	3rd
Attenuation	-60 dB

**HINT:** Do not use the Add Point button on the Harmonic window to add another Harmonic. **Right click** on the Transmitter node and select Add Harmonic again.

Step 11. **Right-click** on **[Transmitter] Walk & Talk Tx | [Frequency] 136.00 – 160 MHz | Add Emission Designator**.



The **Emission Designator** data grid is displayed.

Data Item	Class	Value	Units
Necessary Bandwidth			kHz
Emission Designator	U		

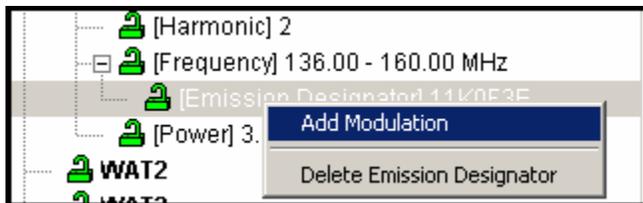
Step 12. **Enter** the following data.

Field	Value
Necessary Bandwidth	11 kHz
Emission Designator	11K0F3E

**HINT:** If you need help in determining the Necessary Bandwidth you can click on the  button to access one of the models.

**HINT:** If you need help in determining the Emission Designator you can click on the  button to access the Emission Designator Wizard.

Step 13. Right-click on [Emission Designator] 11K0F3E | Add Modulation.



The Modulation data grid is displayed.

Data Item	Class	Value	Units
+ Emission Designator		11K0F3E	
+ Radar or Communications?		Communications	
Occupied Bandwidth	U		kHz
Measured or Calculated?	U		
+ Spread Spectrum?		No	
+ Modulation Type	U		

Step 14. Enter the following data and Save.

Field	Value
Occupied Bandwidth	11 kHz
Measured or Calculated	Measured
Spread Spectrum	No
Modulation Type	Analog Modulation (AM, FM, or Phase)
Peak Deviation	Leave blank
Deviation Ratio	0.833
Maximum Modulation Frequency	3 kHz

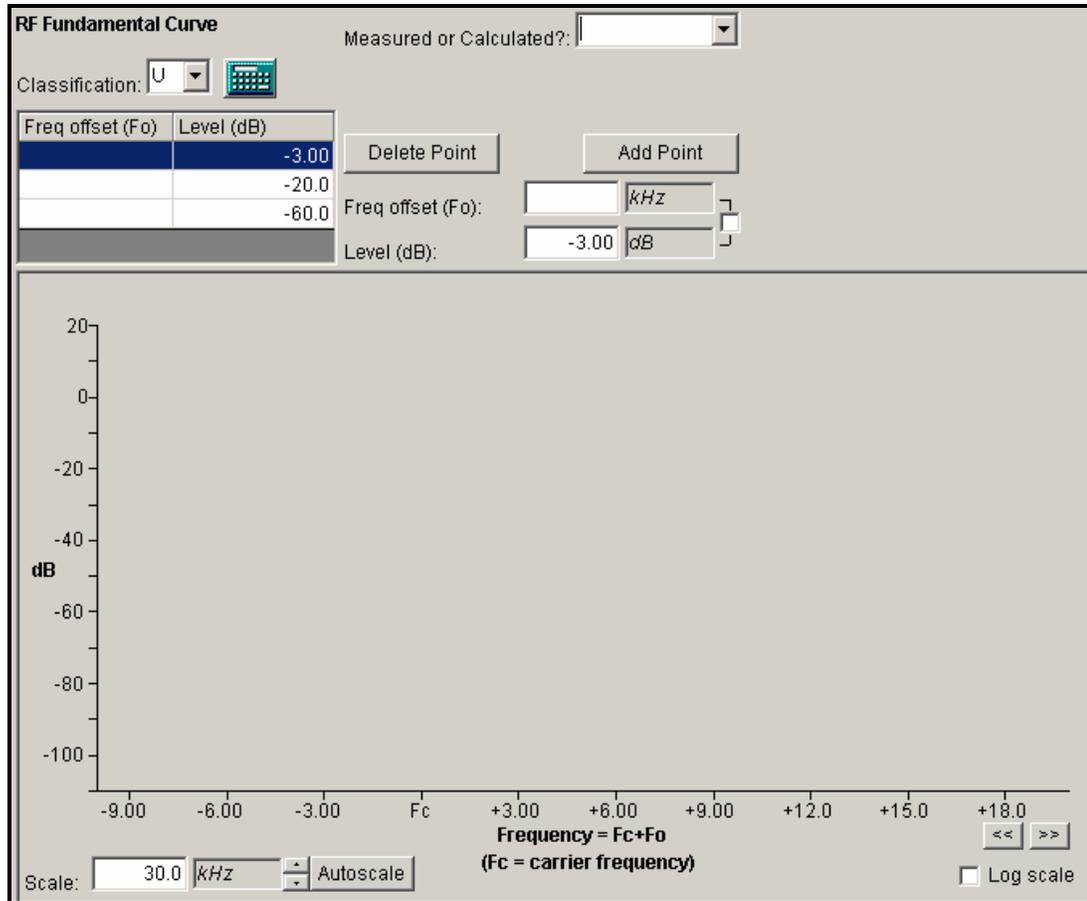
Notice that the Deviation and Maximum Modulation Frequency items do not appear until Analog Modulation is chosen. The program will hide irrelevant items. The plus sign (+) next to Modulation Type indicates that other items will appear or disappear depending upon what you choose for the Modulation Type.

**HINT:** Notice that the Peak Deviation Field is calculated. Enter any two of the fields; Peak Deviation, Deviation Ratio, or Maximum Modulation Frequency and the third field will be calculated.

Step 15. Click on [RF Fundamental Curve].



The RF Fundamental Curve window is displayed.



Step 16. Enter the following data.

Field	Value
Measured or Calculated	Measured

Step 17. Highlight the point to be entered in the point grid

Freq offset (Fo)	Level (dB)
	-3.00
	-20.0
	-60.0

Step 18. Enter 4 in the Frequency Offset.

Freq offset (Fo):	4 kHz
Level (dB):	-3.00 dB

**HINT:** Freq offset equals ½ bandwidth

Step 19. Save the data

**HINT:** You can save the data in the traditional manner, or by clicking the first value in the point grid field. Each data point must be entered and saved.

Step 20. Enter the following data, by following Step 16 through Step 18.

Field	Value
Freq Offset (1/2 Bandwidth) at -20 dB	4.5 kHz
Freq Offset (1/2 Bandwidth) at -60 dB	10 kHz

Step 21. Click the  button. The input grid will be empty.

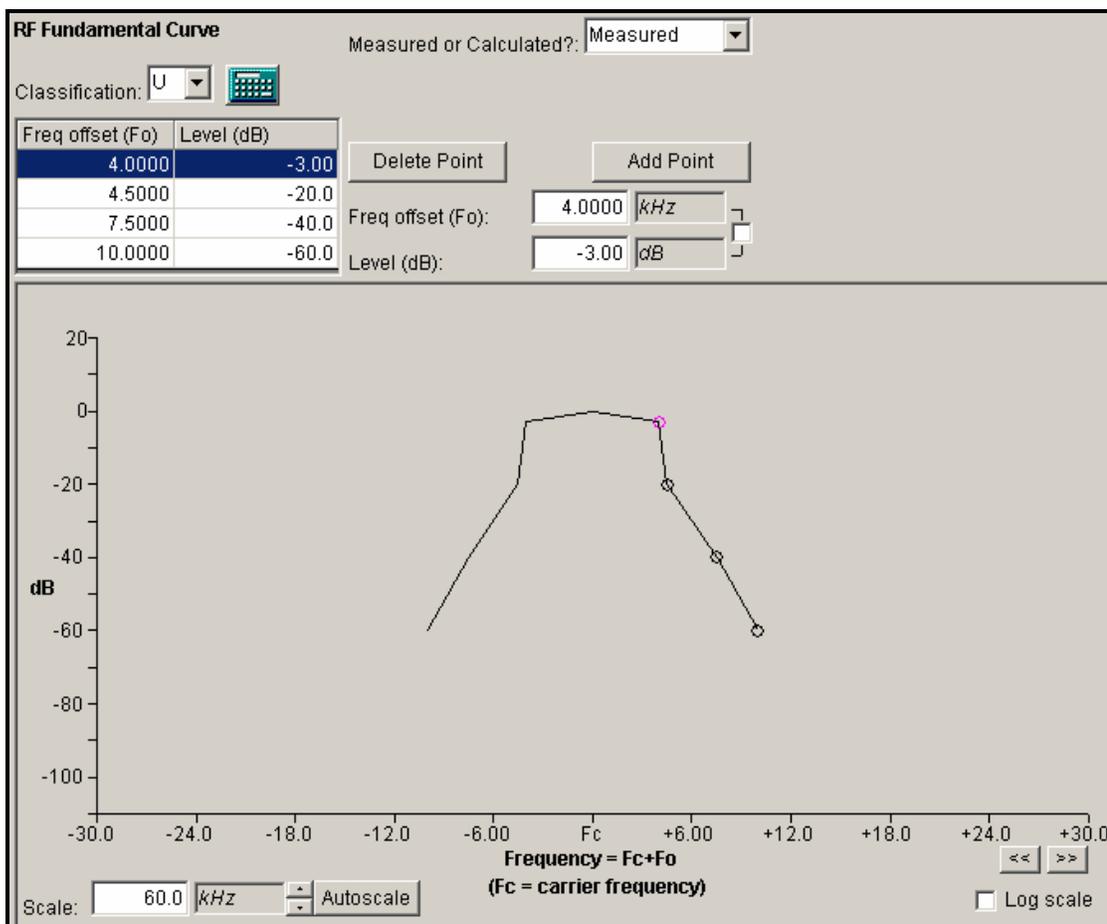
Freq offset (Fo):	<input type="text"/>	kHz
Level (dB):	<input type="text"/>	dB

Step 22. Enter the following data and Save.

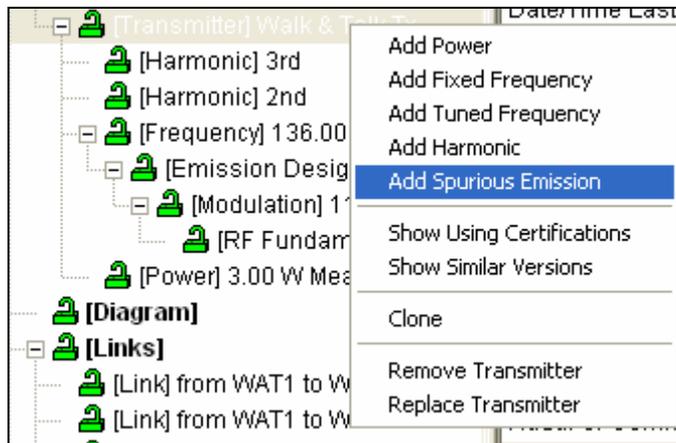
Field	Value
Freq Offset (1/2 Bandwidth) at -40 dB	7.5 kHz

**HINT:**

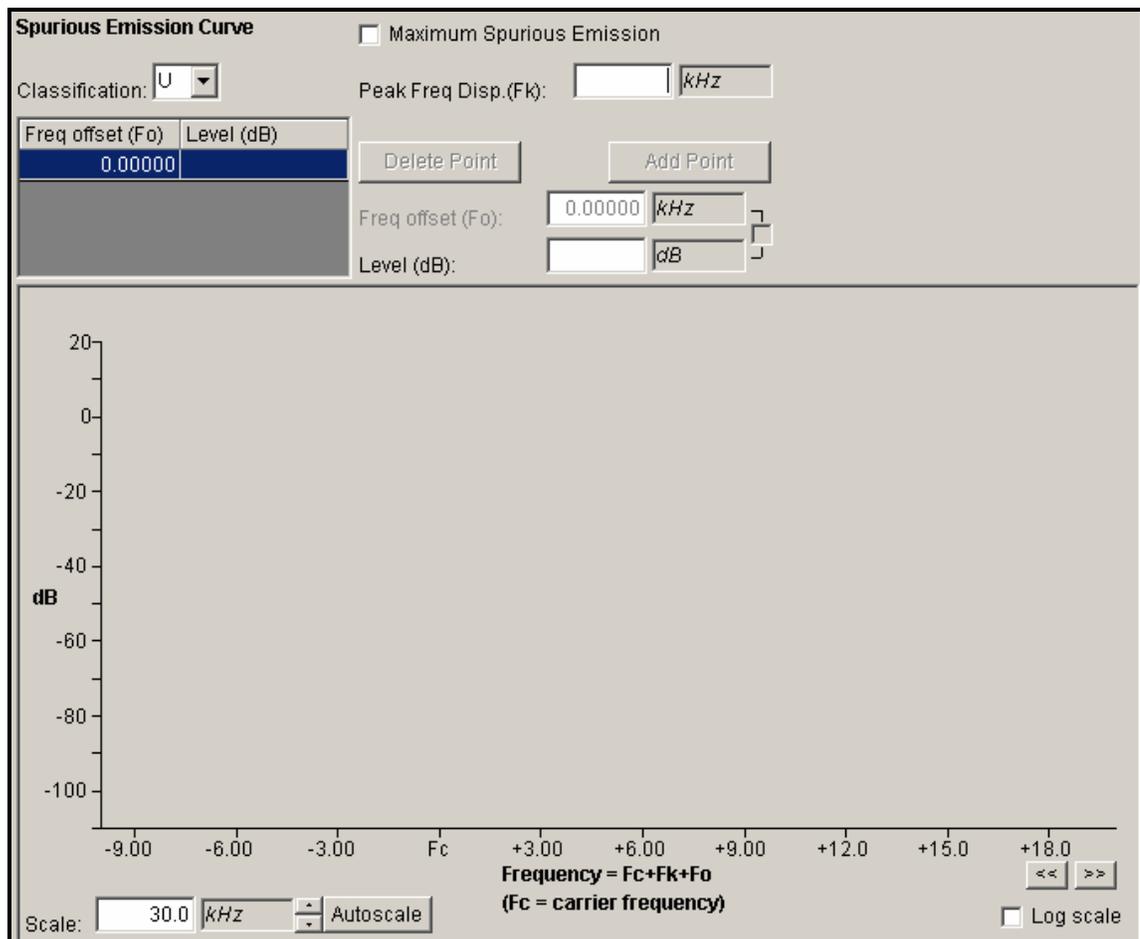
If your screen does not match the one below, Click the Autoscale button. The resulting RF Fundamental Curve should look like the following:



Step 23. Click on **[Transmitter].Walk & Talk | Add Spurious Emission**



The **Spurious Emission Curve** window is displayed;

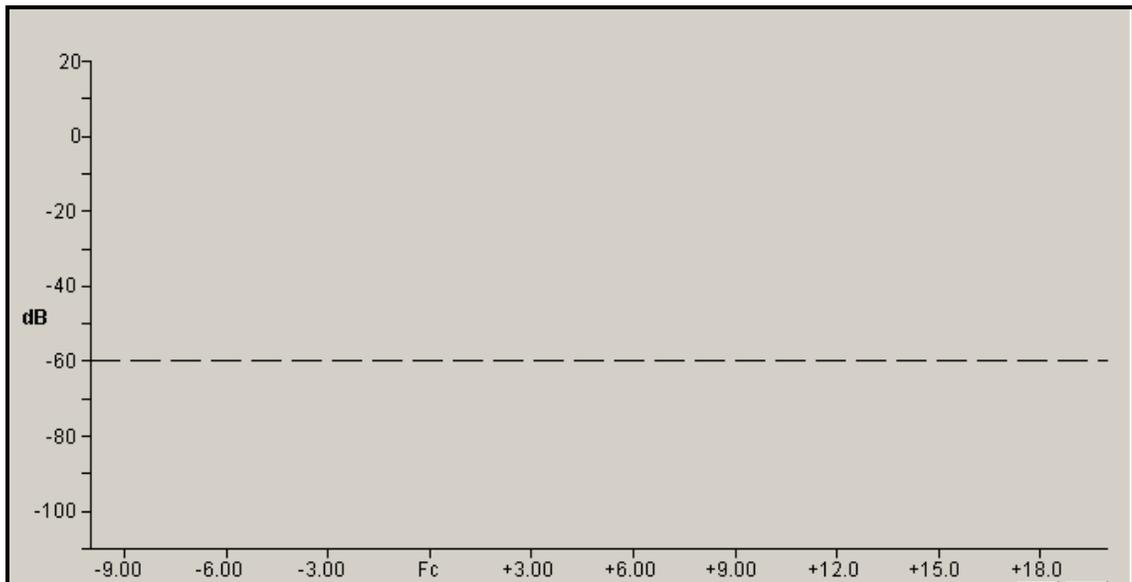


Step 24. Check the box  Maximum Spurious Emission

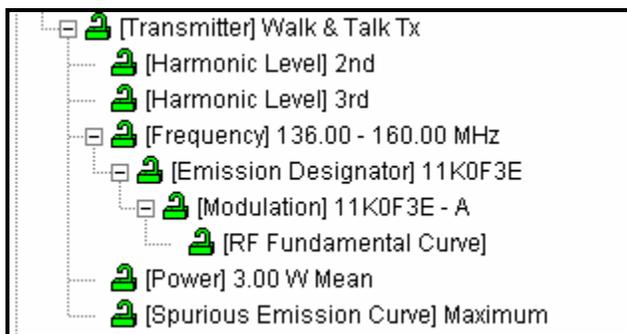
Step 25. Enter the following; either typing the data or graphically using the cursor, and Save.

Field	Value
Level	-60 dB

The **Spurious Emission Curve** appears as a single line because it represents the maximum of all spurious emissions across all frequencies.

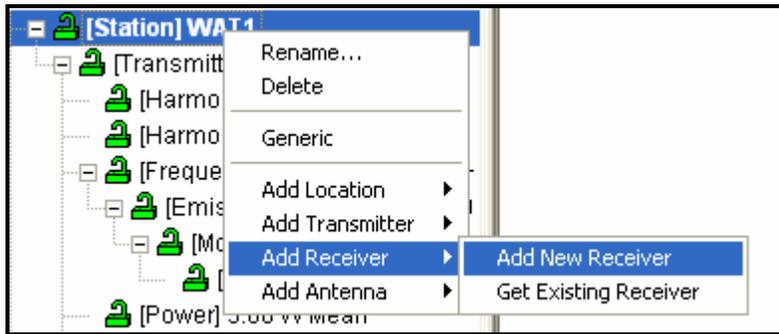


This completes the data entry for the Transmitter **Walk & Talk Tx**, and the tree view looks like the following:

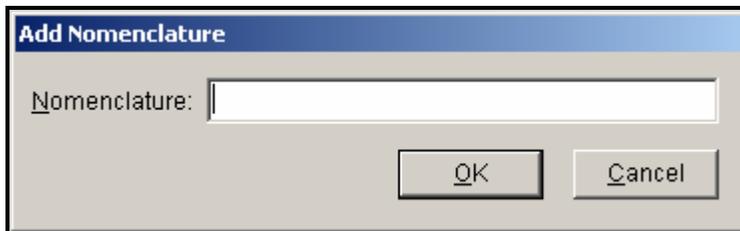


## 4.6.2 Entering Receiver Data

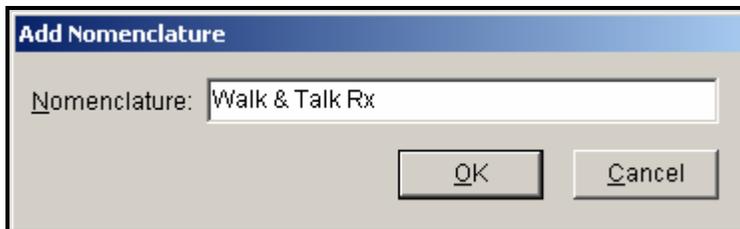
Step 1. **Right-click** on the **[Station] WAT1** and highlight **Add Receiver | Add New Receiver**.



The **Add Nomenclature** window is displayed.



Step 2. **Type Walk & Talk Rx** and **click OK**.



The **Receiver** data grid is displayed.

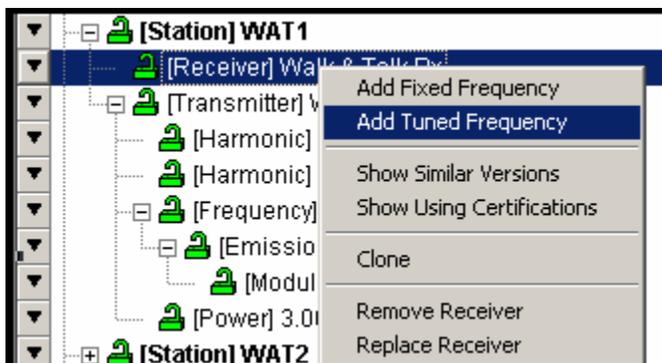
Data Item	Class	Value	Units
<b>Nomenclature</b>	U	Walk & Talk Rx	
<b>Manufacturer</b>	U		
Model Name and Number	U		
Approval Status	U	Unapproved	
Date/Time Last Modified		12/18/2006 11:39:04 AM	local
Coordination ID	U	J/F 12	
Proxy Record?		No	
FCC Acceptance Number	U		
<b>Frequency Stability (+/-)</b>	U		
<b>Frequency Stability Units</b>	U		
<b>Image Rejection Level</b>	U		dB
Conducted Undesired Emissions	U		dBm
Local Oscillator Tuned Indicator	U		
<b>Tuning Method</b>	U		
Date/Time Imported			local

Step 3. **Enter** the following receiver data.

Field	Value
<b>Manufacturer</b>	<b>RELM Communications, Inc</b>
<b>Model Name and Number</b>	<b>Model 127A</b>
<b>FCC Acceptance Number</b>	<b>K95LT20002</b>
<b>Frequency Stability (+/-)</b>	<b>5</b>
<b>Frequency Stability Units</b>	<b>ppm</b>
<b>Local Oscillator Tuned Indicator</b>	<b>Below</b>

**HINT:** You can type the Manufacturer name in the block, but it has to be the exact spelling and punctuation as appears in the user select list.

Step 4. **Right-click** on **[Receiver] Walk & Talk Rx | Add Tuned Frequency**.



The **Tuned Frequency** data grid is displayed

Data Item	Class	Value	Units
<b>+ Fixed Frequency?</b>		No	
<b>Lowest Tuned Frequency</b>	U		MHz
<b>Highest Tuned Frequency</b>	U		MHz
Tuning Increment	U		kHz

Step 5. **Enter** the following tuned frequency data.

Field	Value
<b>Lowest Tuned Frequency</b>	136 MHz
<b>Highest Tuned Frequency</b>	160 MHz
<b>Tuning Increment</b>	12.5 kHz

Step 6. **Right-click** on the **Receiver [Frequency] 136 – 160 MHz | Add Emission – Stage Sensitivity**.



The **Emission – Stage Sensitivity** data grid is displayed.

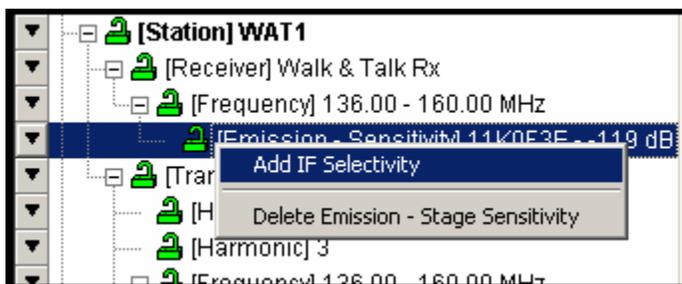
Data Item	Class	Value	Units
<b>+ Emission Designator</b>	U		
Necessary Bandwidth			kHz
<b>Performance Criteria</b>	U		
<b>Performance Value</b>	U		
<b>Sensitivity</b>	U		dBm
Noise Figure	U		dB
Noise Temperature	U		K
<b>Spurious Rejection Level</b>	U		dB
Adjacent Channel Selectivity	U		dB
Intermodulation Rejection Level	U		dB

Step 7. **Enter** the following emission data.

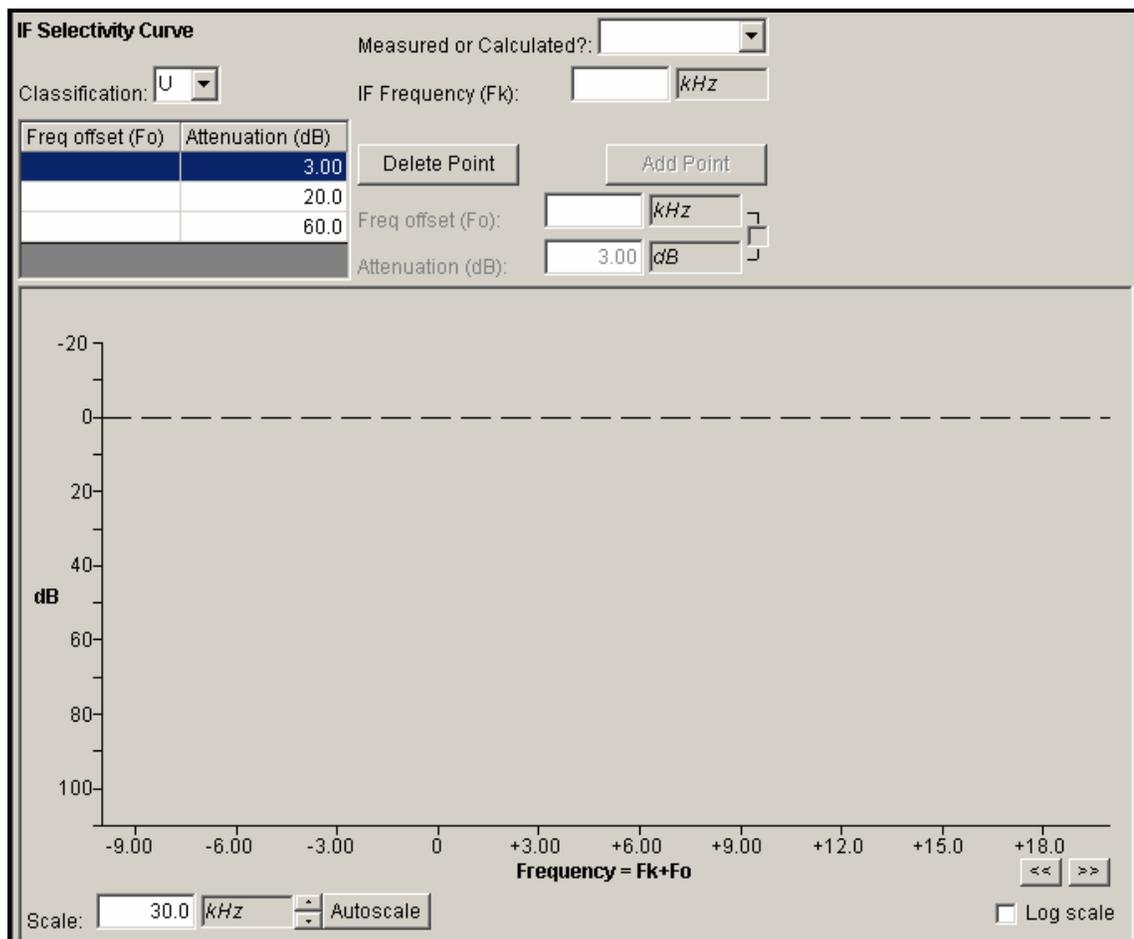
Field	Value
<b>Emission Designator</b>	11K0F3E
<b>Performance Criteria</b>	SINAD–Signal+Noise+Distortion-to-Noise+Distortion Ratio (dB)
<b>Performance Value</b>	10
<b>Sensitivity</b>	-119 dBm
<b>Spurious Rejection Level</b>	75 dB
<b>Adjacent Channel Selectivity</b>	75 dB
<b>Intermodulation Rejection Level</b>	75 dB

**HINT:** The Emission Bandwidth field is automatically filled when the Emission Designator is entered.

Step 8. Right-click on [Emission – Sensitivity] 11K0F3E – 119 dBm | Add IF Selectivity.



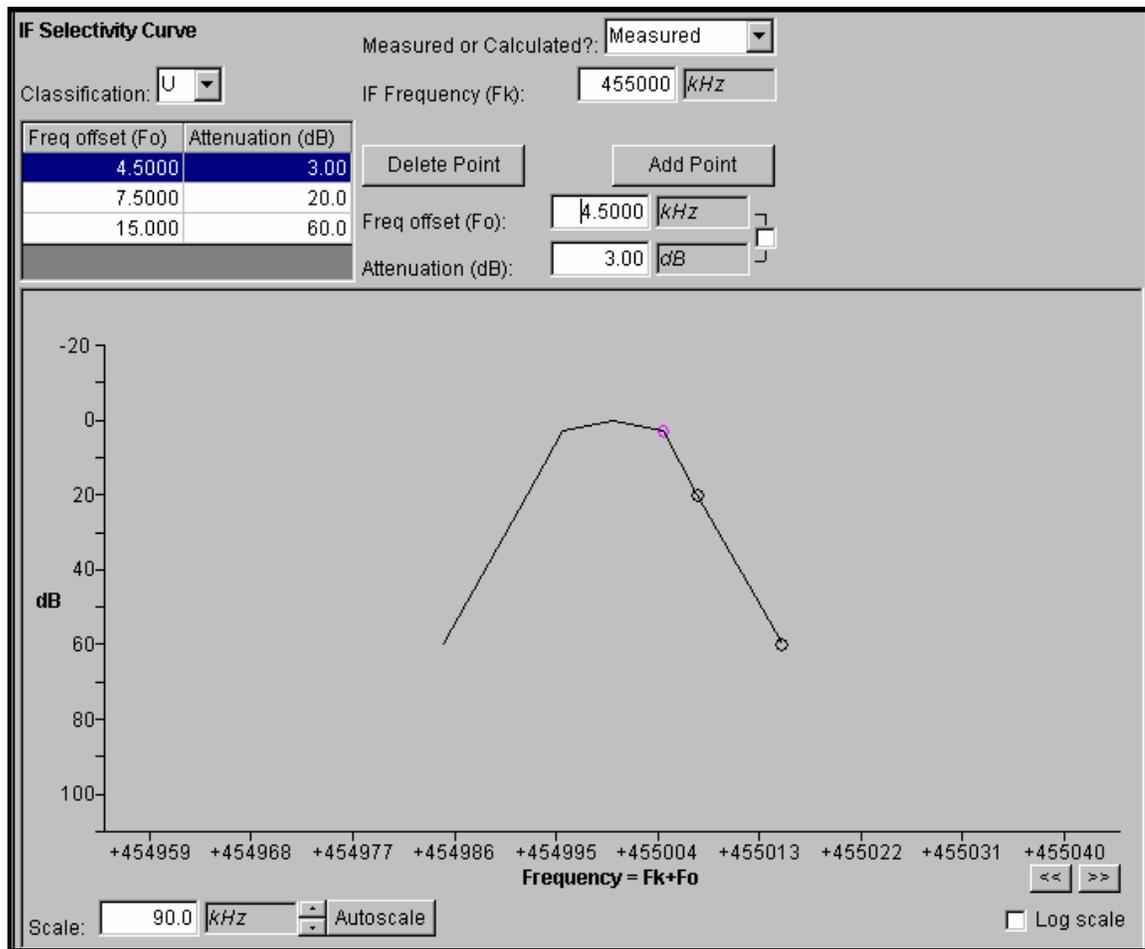
The IF Selectivity Curve window is displayed.



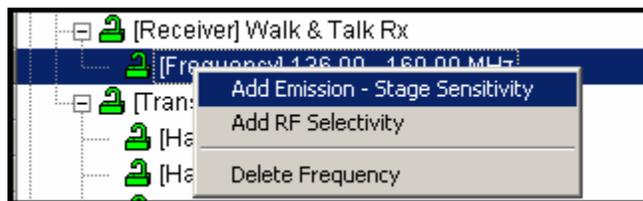
Step 9. Enter the following intermediate frequency data.

Field	Value
Measured or Calculated	Measured
IF Frequency	M455
Freq Offset (1/2 Bandwidth) at 3 dB	4.5 kHz
Freq Offset (1/2 Bandwidth) at 20 dB	7.5 kHz
Freq Offset (1/2 Bandwidth) at 60 dB	15 kHz

Click the **Autoscale** button to redraw curve.  
 The resulting **IF Selectivity Curve** should look like the following:



**Step 10.** Click on **[Frequency] 136 – 160 MHz | Add Emission – Stage Sensitivity** to enter a second set of data.



The **Emission – Stage Sensitivity** data grid is displayed.

**Step 11.** Enter the following data for the second set of emission data.

Field	Value
Emission Designator	12K0F3E
Performance Criteria	SINAD–Signal+Noise+Distortion-to-Noise+Distortion Ratio (dB)
Performance Value	10
Sensitivity	-119 dBm
Spurious Rejection Level	75 dB
Adjacent Channel Selectivity	75 dB
Intermodulation Rejection Level	75 dB

Step 12. **Right-click** on **[Emission – Sensitivity] 12K0F3E – 119 dBm | Add IF Selectivity** to add the IF Selectivity values for the 2nd emission designator.



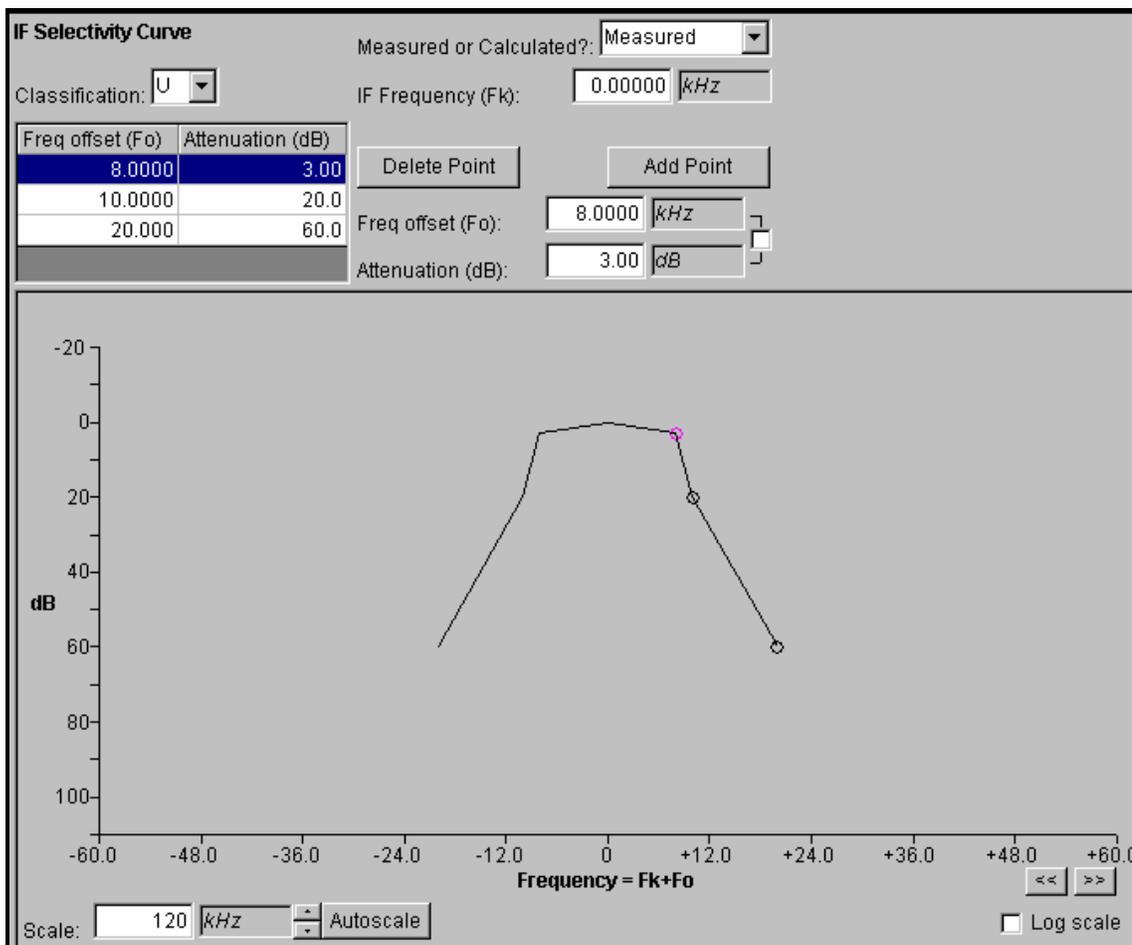
The **IF Selectivity Curve** window is displayed.

Step 13. **Enter** the following intermediate frequency data for the 12K0F3E emission.

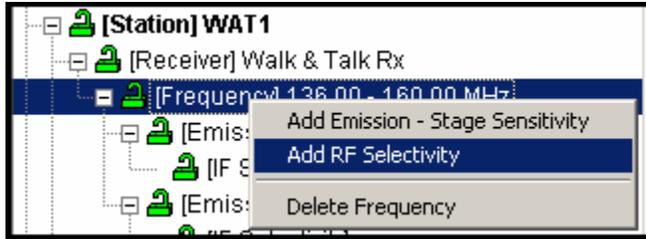
Field	Value
Measured or Calculated	Measured
IF Frequency	0
Freq Offset (1/2 Bandwidth) at 3 dB	8 kHz
Freq Offset (1/2 Bandwidth) at 20 dB	10 kHz
Freq Offset (1/2 Bandwidth) at 60 dB	20 kHz

**HINT:** If you do not know the IF Frequency, enter 0.

**Click** the **Autoscale** button. The resulting **IF Selectivity Curve** should look like the following:



Step 14. **Right-click** on **[Frequency] 136 – 160 MHz | Add RF Selectivity** to add the RF selectivity.



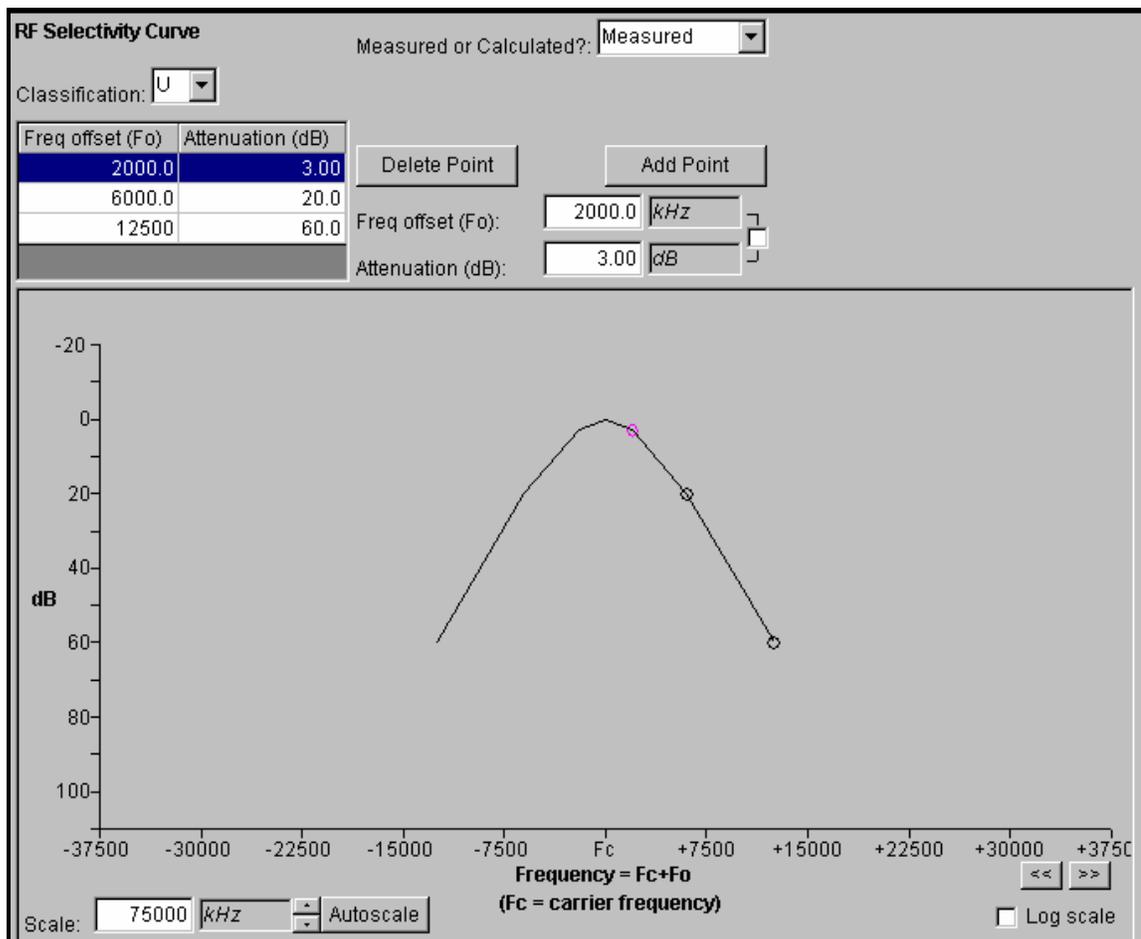
The **RF Selectivity Curve** window is displayed.

Step 15. **Enter** the following RF selectivity data.

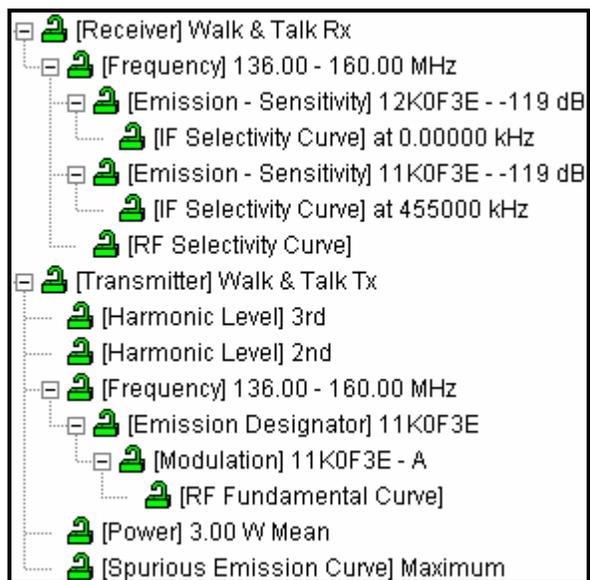
Field	Value
Measured or Calculated	Measured
Freq Offset (1/2 Bandwidth) at 3 dB	2M
Freq Offset (1/2 Bandwidth) at 20 dB	6M
Freq Offset (1/2 Bandwidth) at 60 dB	12.5M

Notice that when you enter M to choose megahertz frequency offset units, the scale of the x-axis on the graph automatically changes to MHz.

**Click** the **Autoscale** button. The resulting **RF Selectivity Curve** should look like the following:

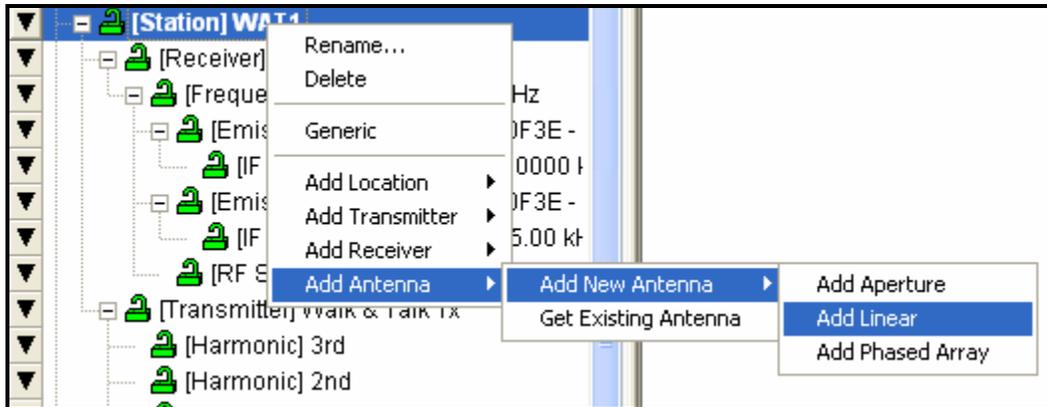


This completes the data entry for the Receiver **Walk & Talk Rx**, and the tree view looks like the following:

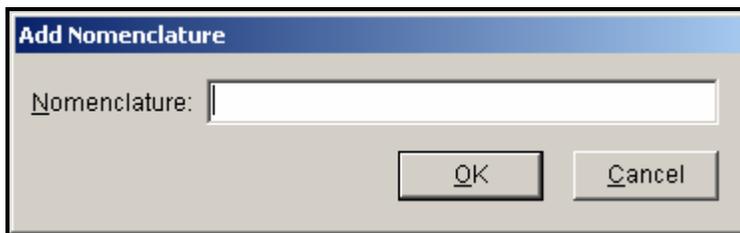


### 4.6.3 Entering Antenna Data

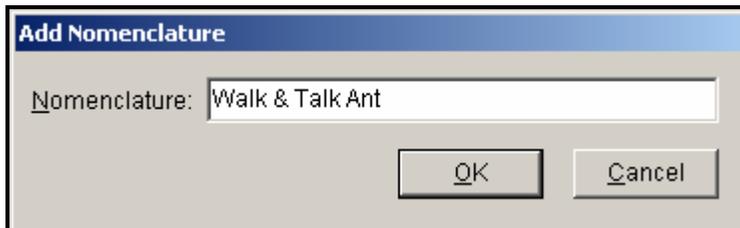
Step 1. Click on **[Station] WAT1**, and then **right-click** on **Add Antenna | Add New Antenna | Add Linear**.



The **Add Nomenclature** window is displayed.



Step 2. Type **Walk & Talk Ant** and **click OK**.



The **Antenna** data grid is displayed.

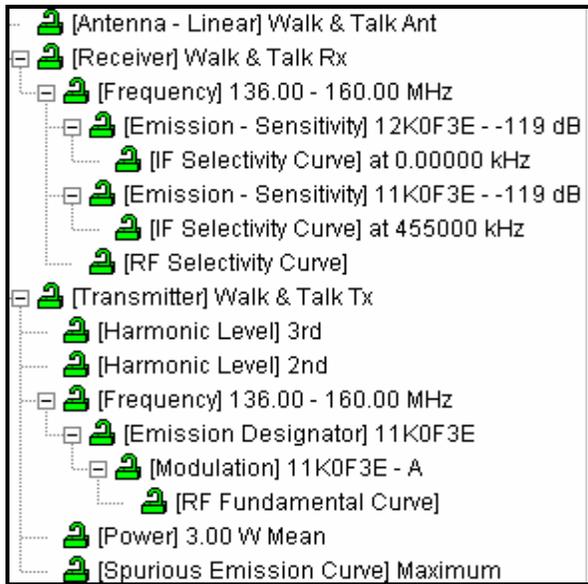
Data Item	Class	Value	Units
<b>Nomenclature</b>	U	Walk & Talk Ant	
Manufacturer	U		
Model Name and Number	U		
Approval Status	U	Unapproved	
Date/Time Last Modified		12/18/2006 12:34:08 PM	local
Coordination ID	U	J/F 12	
Proxy Record?		No	
<b>Antenna Horizontal Beamwidth</b>	U		degrees
<b>Antenna Vertical Beamwidth</b>	U		degrees
<b>Antenna Lower Frequency Limit</b>	U		MHz
Antenna Upper Frequency Limit	U		MHz
<b>Polarization</b>	U		
<b>+ Antenna Main Beam Gain</b>	U		dBi
Date/Time Imported			local

**Step 3.** **Enter** the following antenna data.

Field	Table
<b>Manufacturer</b>	<b>RELM COMMUNICATIONS, INC</b>
<b>Model Name and Number</b>	<b>Model 127A</b>
<b>Antenna Horizontal Beamwidth</b>	<b>360 degrees</b>
<b>Antenna Vertical Beamwidth</b>	<b>45 degrees</b>
<b>Antenna Lower Frequency Limit</b>	<b>136 MHz</b>
<b>Antenna Upper Frequency Limit</b>	<b>160 MHz</b>
<b>Polarization:</b>	<b>Linear</b>
<b>Antenna Main Beam Gain</b>	<b>0 dBi</b>

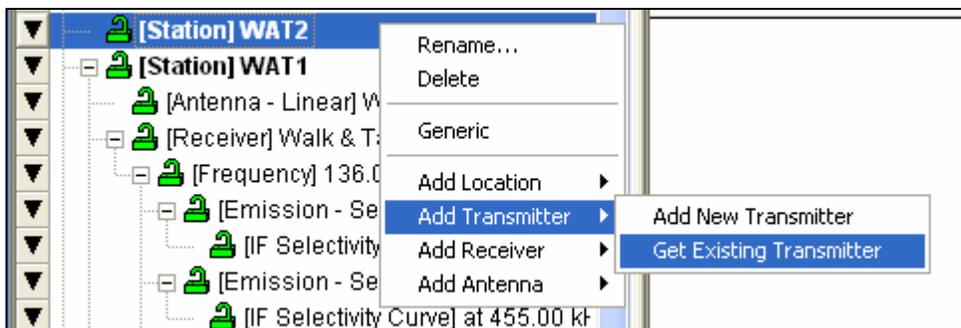
**Step 4.** **Save** the data.

This completes the data entry for the Antenna **Walk & Talk Ant**, and the tree view looks like the following:

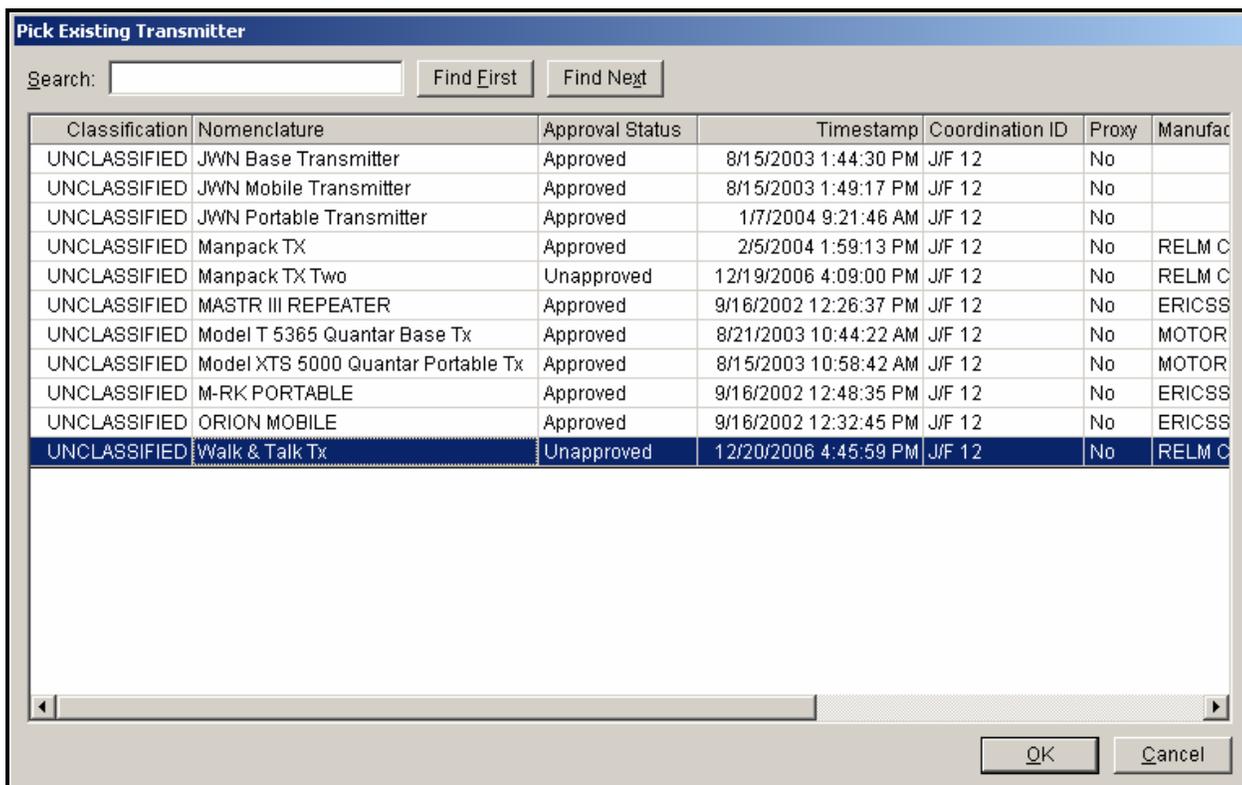


### 4.6.4 Getting Existing Transmitter Data

**Step 1.** We are going to add a transmitter to station WAT2 by selecting an existing transmitter from the list of transmitters that are already in the database. **Right-click** on **[Station] WAT2 | Add Transmitter | Get Existing Transmitter**.

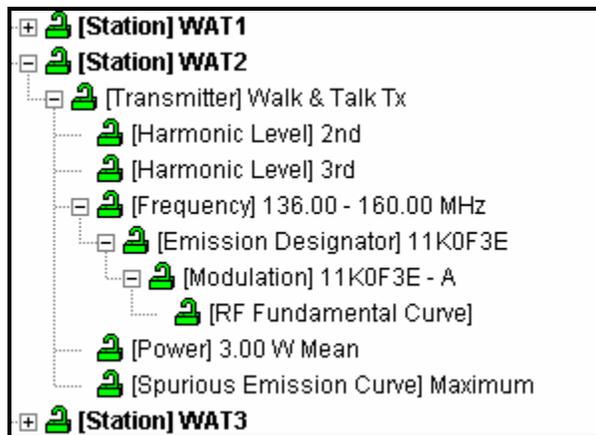


The **Pick Existing Transmitter** window is displayed.



**Step 2.** **Highlight Walk & Talk Tx** and then **click OK** to add the **Walk & Talk Tx** to **Station WAT2**.

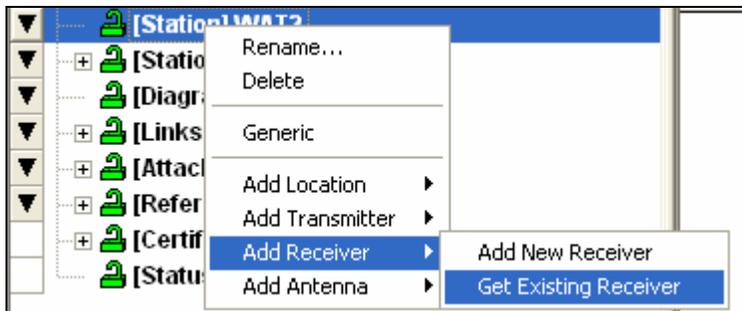
**Step 3.** Open all the nodes for the WAT2 station by **clicking on the +** beside each node. You will see that all of the transmitter data was inserted for the station.



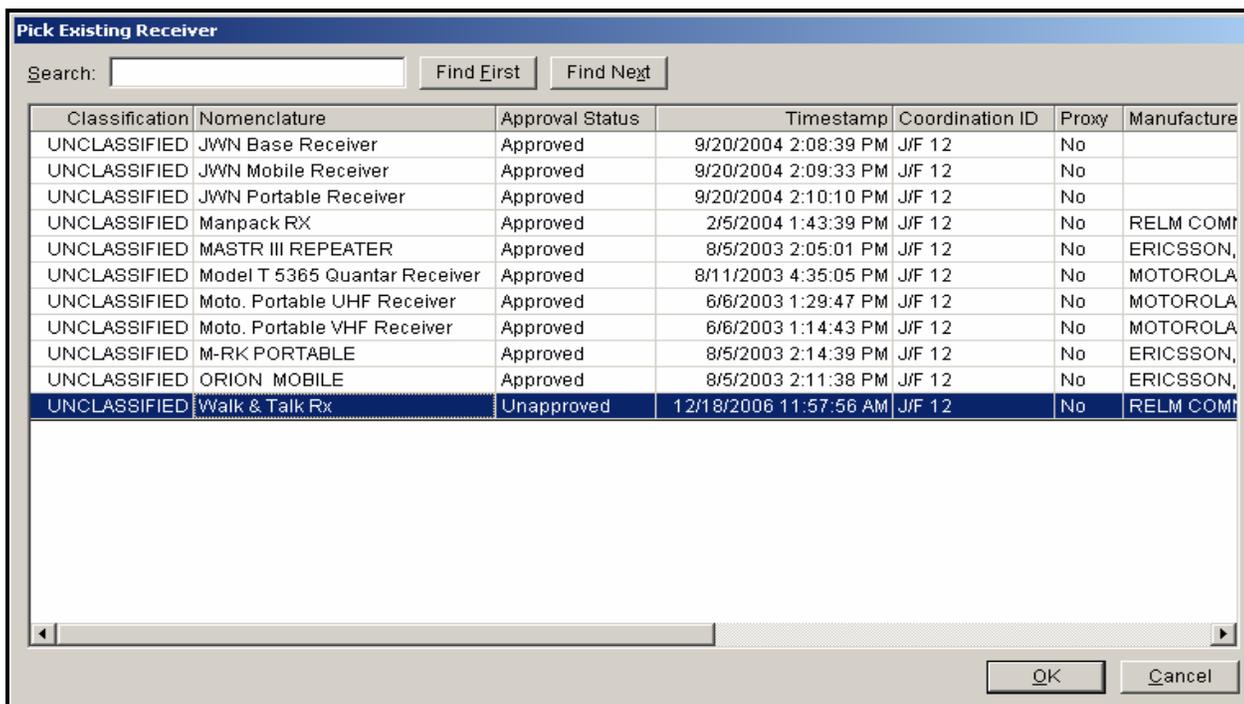
***HINT:*** You may also expand a node and all its child nodes by holding down the Shift key and clicking on the node.

### 4.6.5 Getting Existing Receiver Data

**Step 1.** We are going to add a receiver to station WAT2 by selecting an existing receiver from the list of receivers that are already in the database. **Right-click** on **[Station] WAT2 | Add Receiver | Get Existing Receiver**.

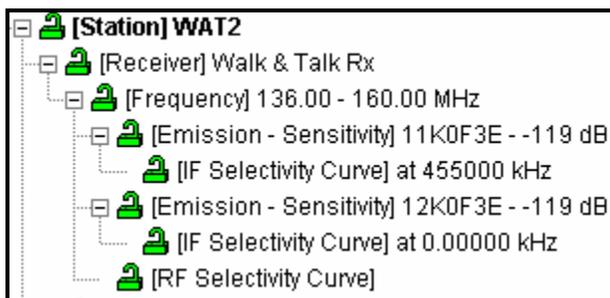


The **Pick Existing Receiver** window is displayed.



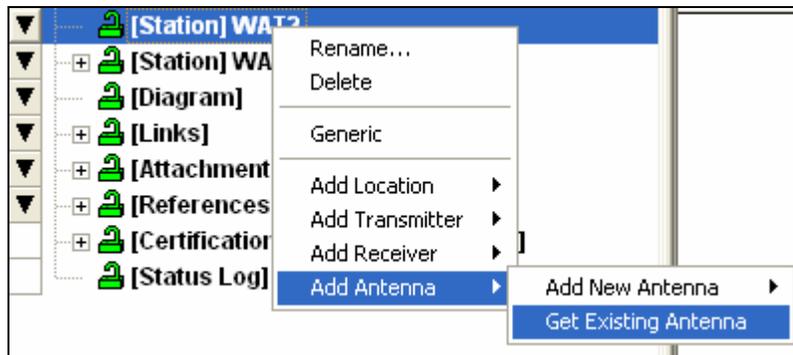
**Step 2.** **Highlight Walk & Talk Rx** and then **click OK** to add the **Walk & Talk Rx** to **Station WAT2**.

**Step 3.** Open all the nodes for the receiver of the WAT2 station by **clicking on the +** beside each node. You will see that all of the receiver data was inserted for the station.

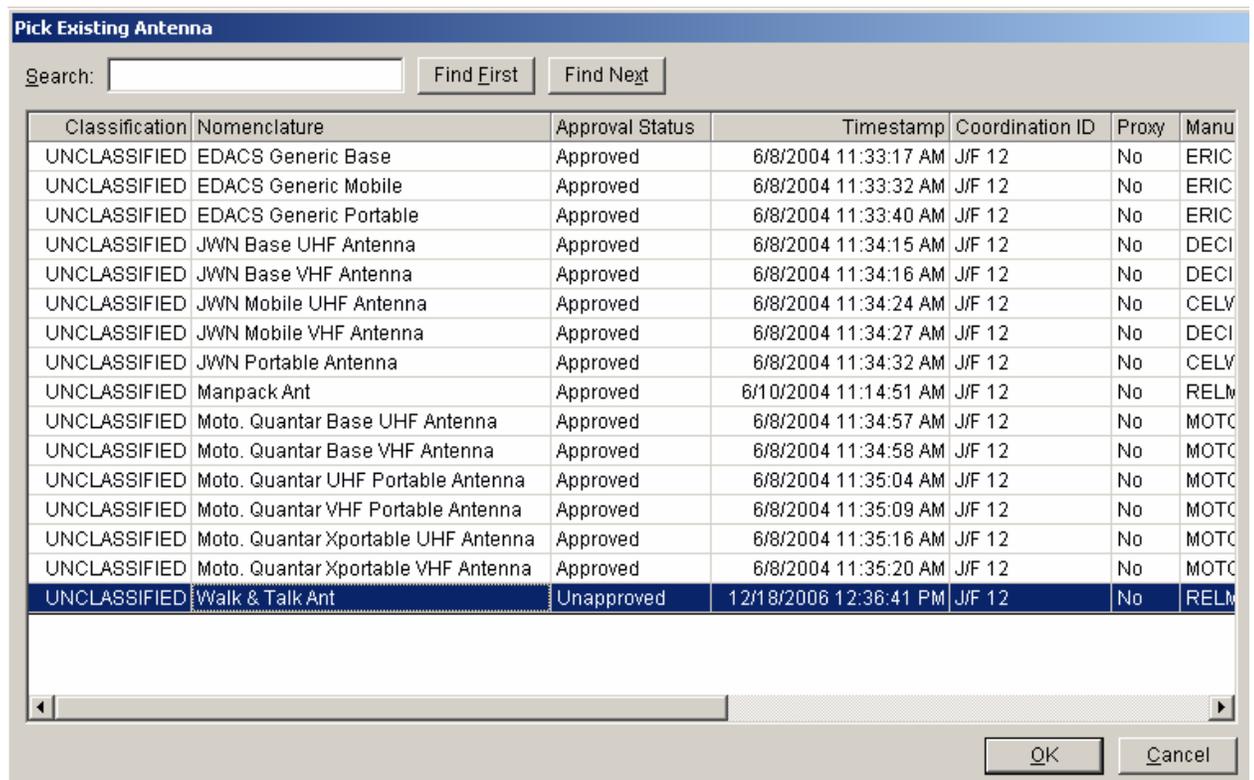


### 4.6.6 Getting Existing Antenna Data

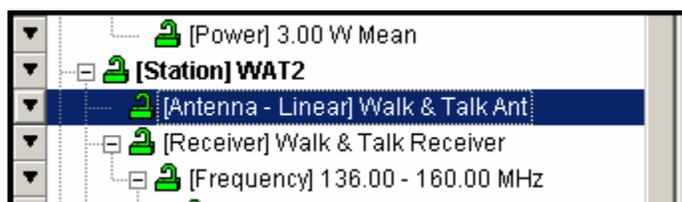
**Step 1.** We are going to add an antenna to station WAT2 by selecting an existing antenna from the list of antennas that are already in the database. **Right-click** on **[Station] WAT2 | Add Antenna | Get Existing Antenna**.



The **Pick Existing Antenna** window will be displayed.



**Step 2.** **Highlight Walk & Talk Ant** and then **click OK**, to add the **Walk & Talk Ant** to **Station WAT2**. The added antenna will appear on the tree view under Station WAT2.

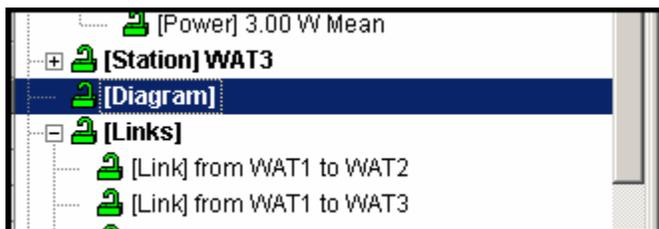


Recall that WAT3 is a Generic station. We do not enter equipment for it.

## 4.7 Entering Data For Links

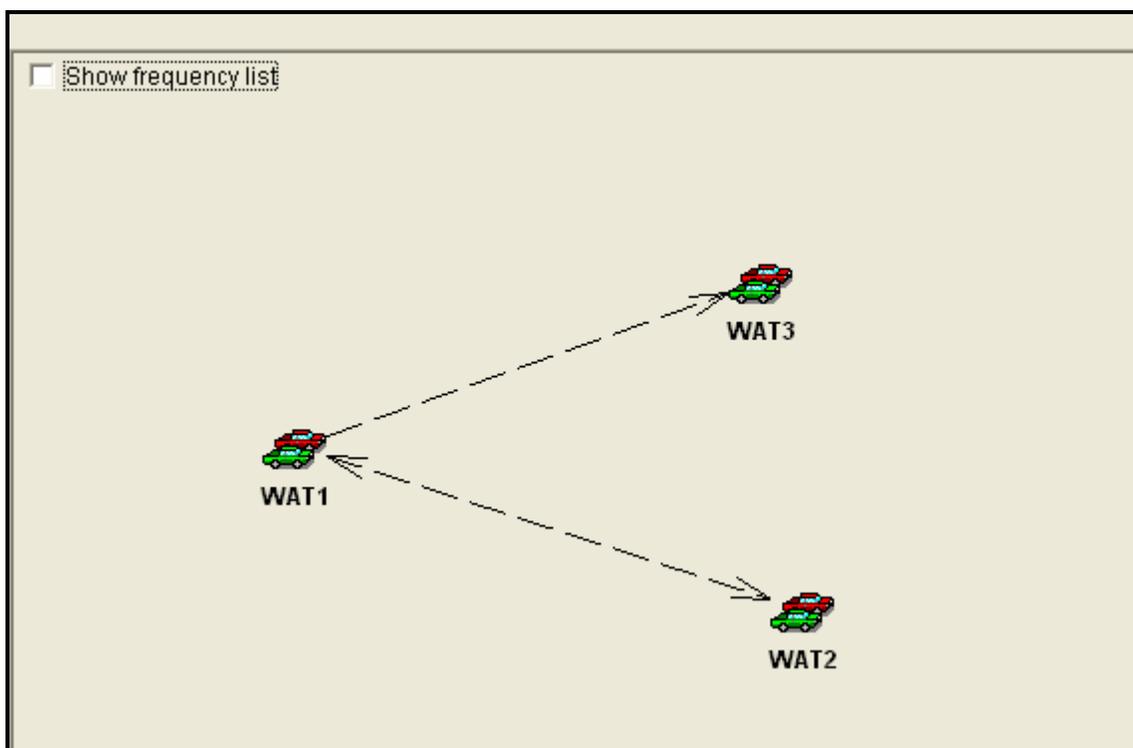
Data can be entered by accessing the diagram and using the graphical links to select which link to edit. The following steps will illustrate this.

- Step 1.** Click on the **[Diagram]** node in the tree view. The **Link Information** node is displayed showing the links that had been defined earlier.



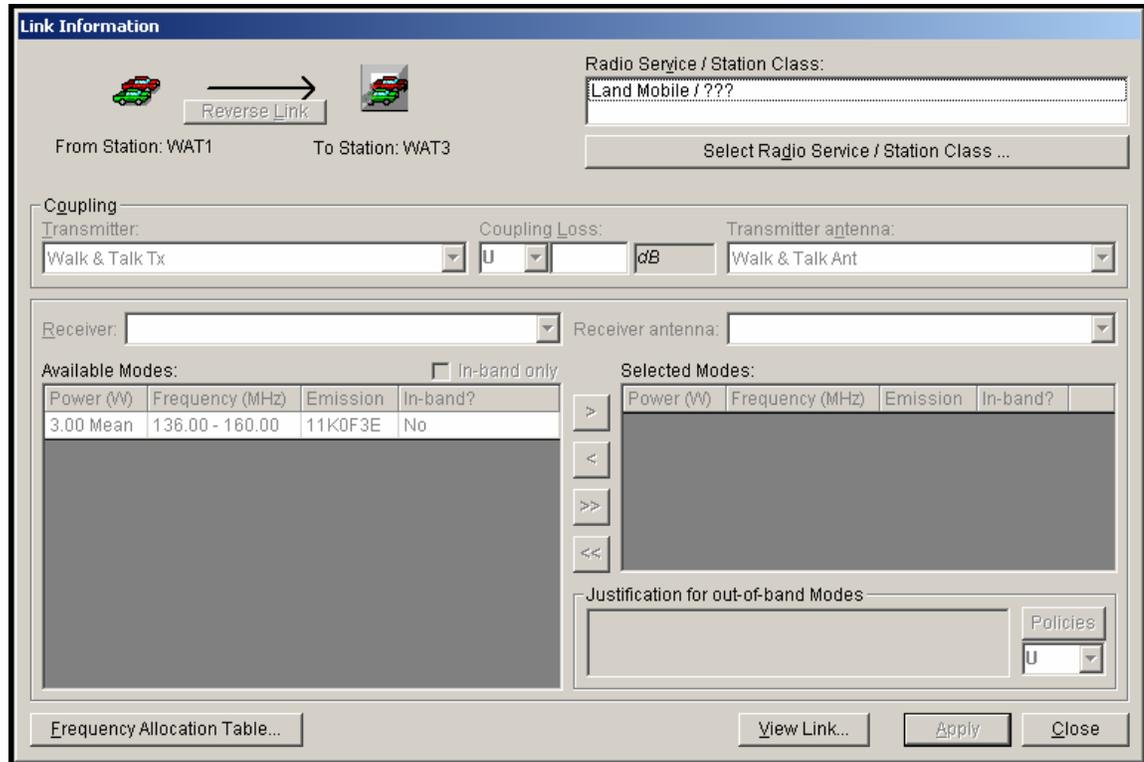
There are two ways to display the **Link Information** window.

- Step 2.** The first way is to **right-click** on the graphical link near the **receiving end** and then **click Edit** in the popup menu that is displayed.



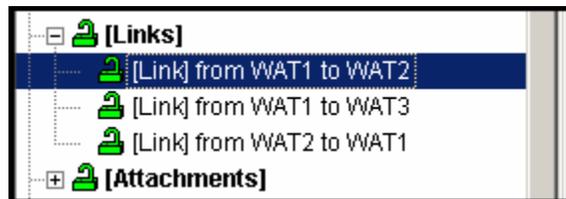
You must right-click on the line near the receiving end, but not too close to the station. Otherwise, the program will think you are clicking on the station.

The **Link Information** window will be displayed.



**Step 3.** Click **Close** to close the **Link Information** window.

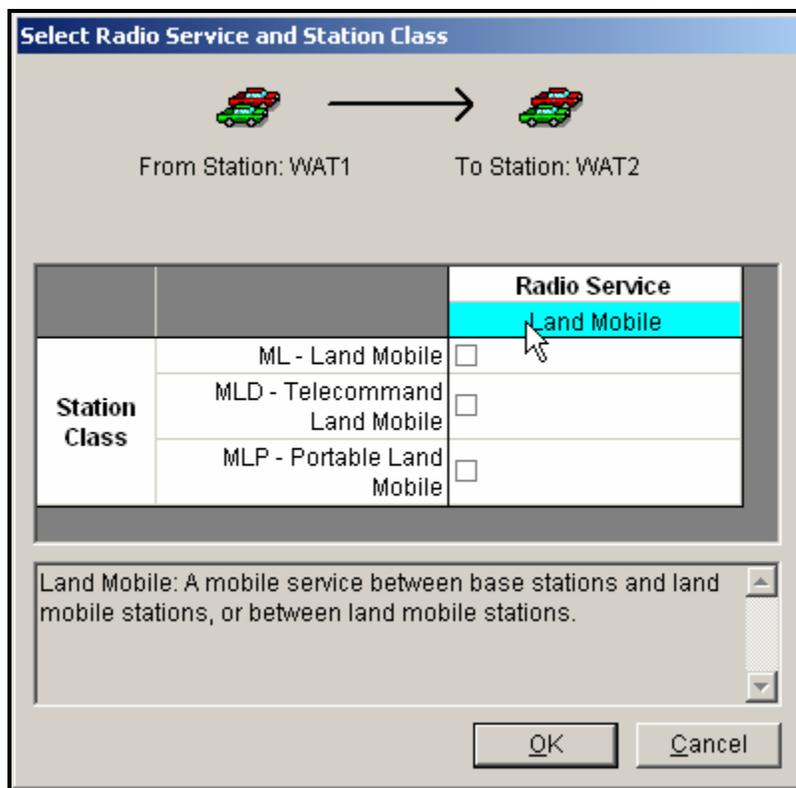
**Step 4.** The second way to display the **Link Information** window is to click on the individual link shown in the tree view. Click on **[Link] from WAT1 to WAT2**. Again the **Link Information** window will be displayed.



**Step 5.** Click the **Select Radio Service/Station Class** button.

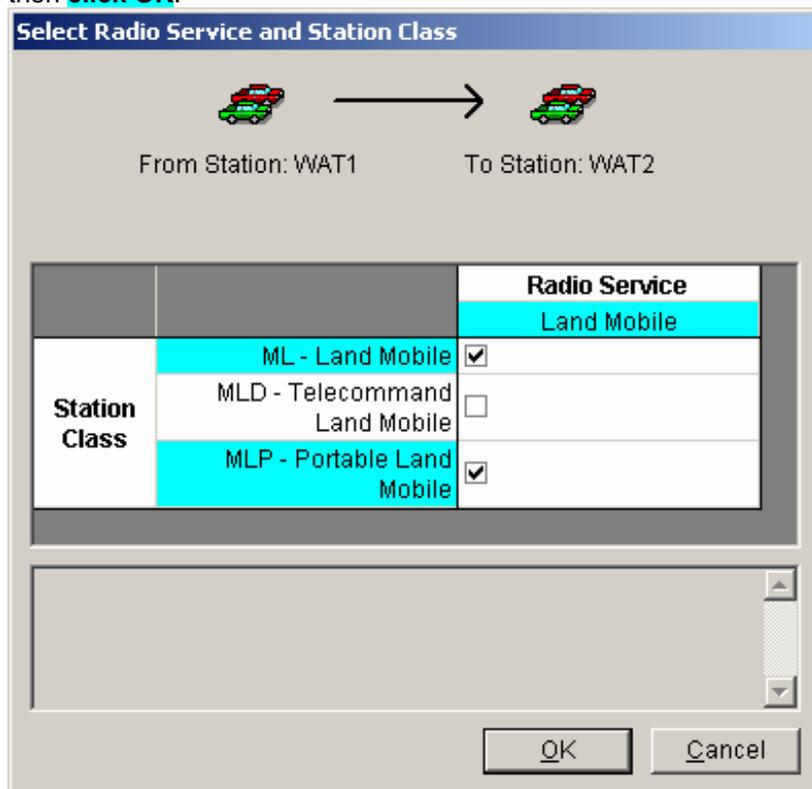


The **Select Radio Service/Station Class** window is displayed.

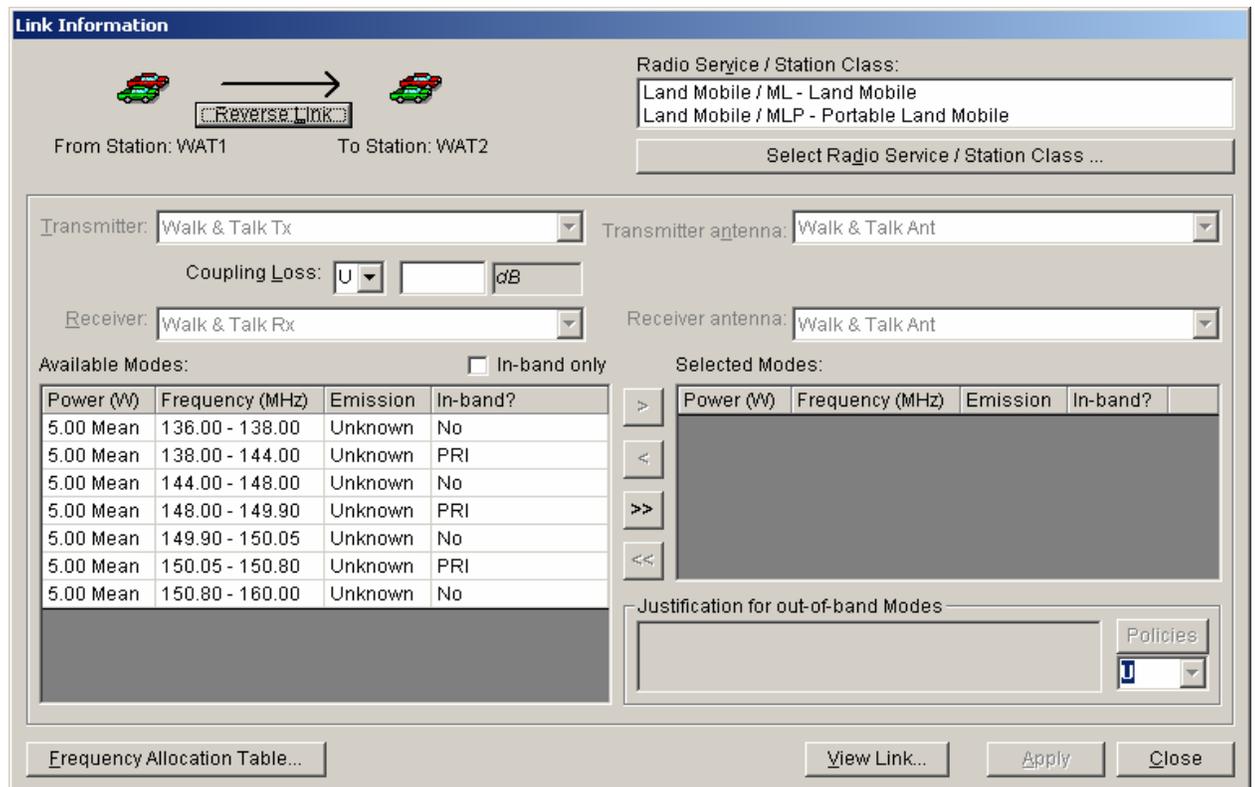


**HINT:** As you hover the mouse cursor over the Station Class or Radio Service, a description of each appears in the box below.

**Step 6.** **Select** station class **ML** and **MLP** (i.e., **click** the respective check boxes) as shown below and then **click OK**.



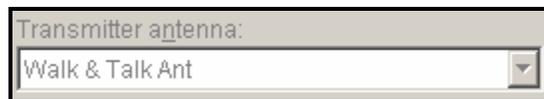
The **Link Information** window now becomes active.



**Step 7.** If there is more than one transmitter, choose a specific Transmitter using the  button. Currently, we have identified only one transmitter for Station WAT1, therefore the pick list is grayed out.



**Step 8.** If there is more than one transmitter antenna, choose a specific Transmitting Antenna using the  button. Currently, we have identified only one Transmitting Antenna for Station WAT1.



**Step 9.** **Enter** the transmitter to transmitter antenna coupling loss (e.g., cable insertion loss). The security classification is entered using the  button. Since we haven't entered this data before we could enter it now if we had the information.



Note: Coupling Loss (as well as SPD) is required for certain Satellite links.

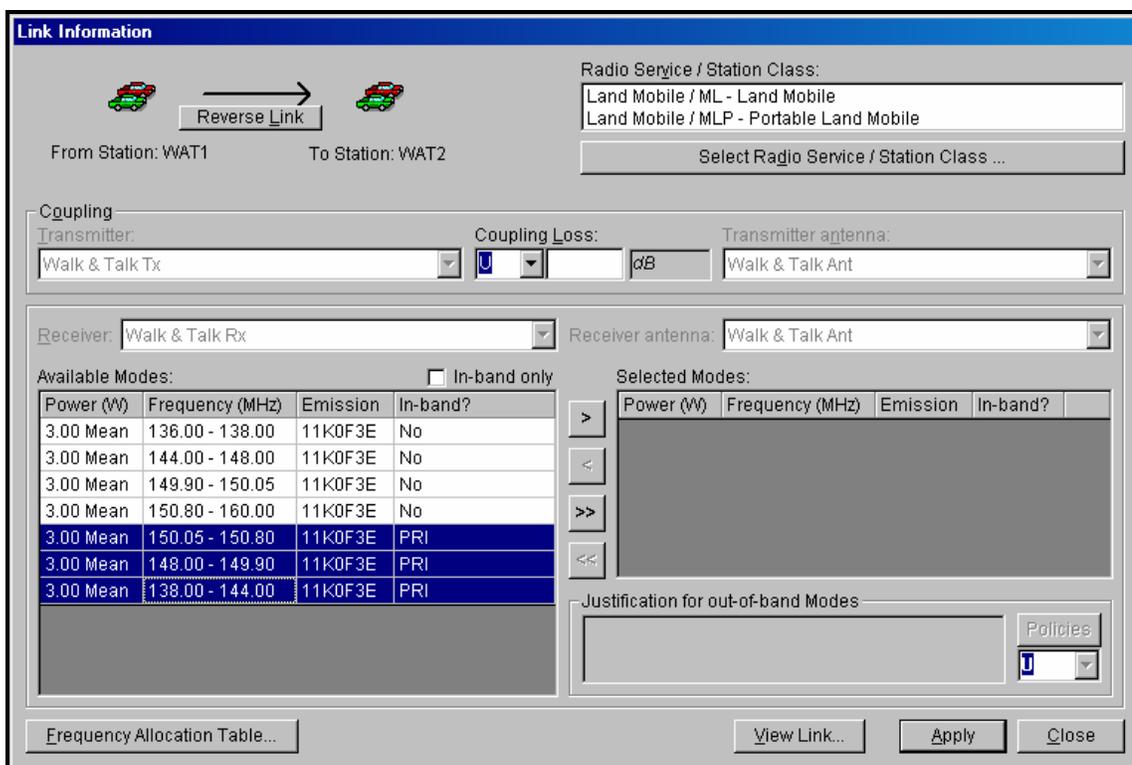
**Step 10.** If there is more than one receiver, choose a specific Receiver using the  button. Currently, we have identified only one receiver for Station WAT2.



**Step 11.** If there is more than one receiver antenna, choose a specific Receiving Antenna at Station WAT2 by using the  button.



**Step 12.** Select from the available modes the modes that you want to certify. **Select the 3 modes** which have a **PRI** in the **In-band?** column. You can **hold down the Ctrl key** and **click each one** as shown below.



Radio Service / Station Class:  
Land Mobile / ML - Land Mobile  
Land Mobile / MLP - Portable Land Mobile  
Select Radio Service / Station Class ...

Reverse Link  
From Station: WAT1 To Station: WAT2

Coupling  
Transmitter: Walk & Talk Tx Coupling Loss: dB Transmitter antenna: Walk & Talk Ant

Receiver: Walk & Talk Rx Receiver antenna: Walk & Talk Ant

Available Modes:  In-band only

Power (W)	Frequency (MHz)	Emission	In-band?
3.00 Mean	136.00 - 138.00	11K0F3E	No
3.00 Mean	144.00 - 148.00	11K0F3E	No
3.00 Mean	149.90 - 150.05	11K0F3E	No
3.00 Mean	150.80 - 160.00	11K0F3E	No
3.00 Mean	150.05 - 150.80	11K0F3E	PRI
3.00 Mean	148.00 - 149.90	11K0F3E	PRI
3.00 Mean	138.00 - 144.00	11K0F3E	PRI

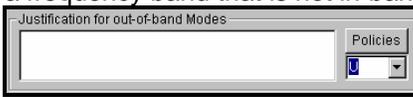
Selected Modes:

Power (W)	Frequency (MHz)	Emission	In-band?
-----------	-----------------	----------	----------

Justification for out-of-band Modes

Frequency Allocation Table... View Link... Apply Close

**HINT:** You can also put a check in the  box and only the in-band frequencies will appear. Then they can be moved as a group using the  button or individually by using the  button. If you choose a frequency band that is not in-band, you will have to give a

justification for using this band. 

Step 13. Click the  button to transfer the Available Modes to list of Selected Modes.

Available Modes:				<input type="checkbox"/> In-band only	Selected Modes:			
Power (W)	Frequency (MHz)	Emission	In-band?		Power (W)	Frequency (MHz)	Emission	In-band?
3.00 Mean	136.00 - 138.00	11K0F3E	No	   	3.00 Mean	138.00 - 144.00	11K0F3E	PRI
3.00 Mean	144.00 - 148.00	11K0F3E	No		3.00 Mean	148.00 - 149.90	11K0F3E	PRI
3.00 Mean	149.90 - 150.05	11K0F3E	No		3.00 Mean	150.05 - 150.80	11K0F3E	PRI
3.00 Mean	150.80 - 160.00	11K0F3E	No					

Step 14. Click **Apply** to save your choices. The **Notification** window is displayed.



Step 15. Click **OK**.

Step 16. Click the **View Link** button to see the link information that you have saved.

**View Link**


→


From Station: WAT1      To Station: WAT2

Transmitter	Power (W)	Frequency (MHz)	Em. Des.	EIRP (W)	TX Antenna	RX Antenna	Receiver	In-band?	Justification for Out-of-band
Walk & Talk Tx	Mean 3.00	138.00 - 144.00	11K0F3E	3.00	Walk & Talk Ant	Walk & Talk Ant	Walk & Talk Rx	PRI	
		148.00 - 149.90							
		150.05 - 150.80							

Radio Service / Station Class:

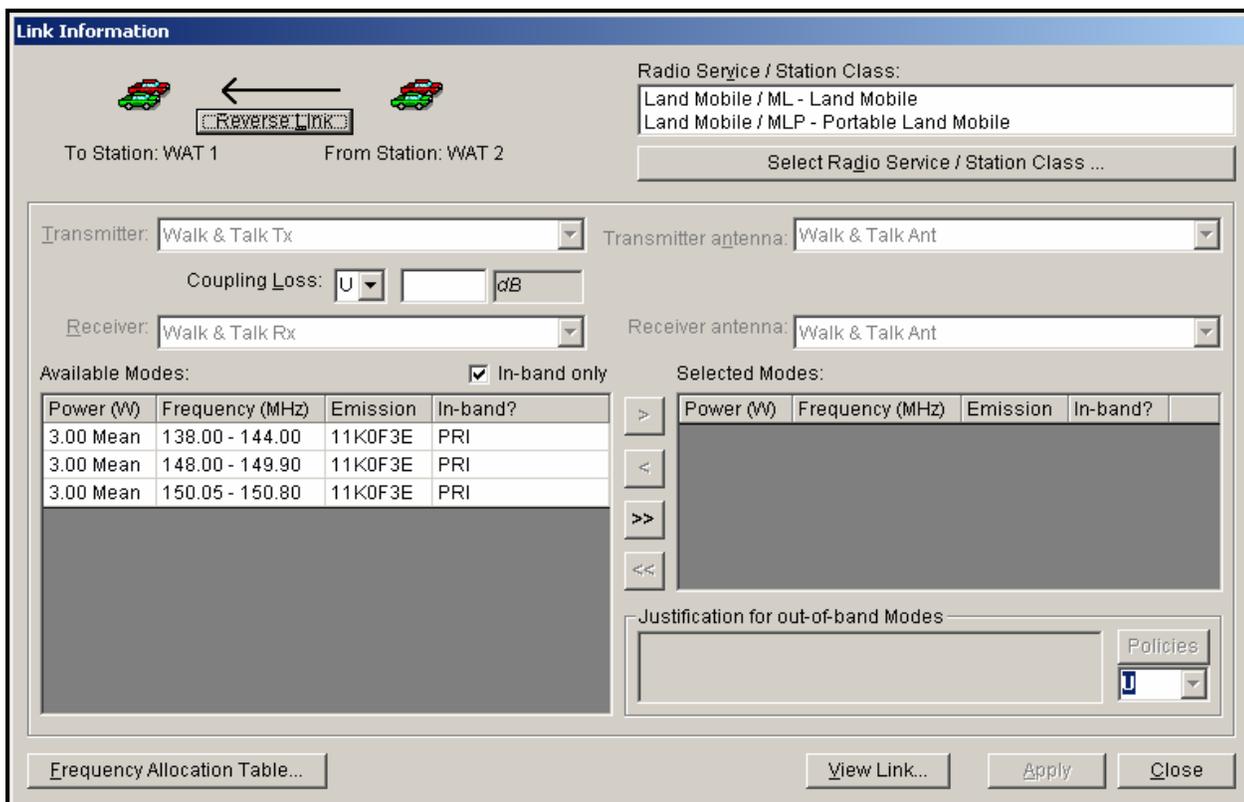
Land Mobile / ML - Land Mobile  
 Land Mobile / MLP - Portable Land Mobile

**OK**

**HINT:** The link information screen will display all the modes for the link shown at the top of the window.

Step 17. Click **OK** after previewing the data.

Step 18. Click the **Reverse Link** button  to display the reverse link (i.e., station WAT2 to station WAT1). The reverse link information will be displayed.



Step 19. To enter information for this link as we did the previous link, click the **Select Radio Service/Station Class** button. The **Select Radio Service/Station Class** window is displayed.

Step 20. On the **Select Radio Service/Station Class** window, select station class **ML** and **MLP** by clicking the associated check boxes and clicking **OK**. The **Link Information** window above now becomes active. Click the **In-band only** check box off and on to see all bands / in-band only modes.

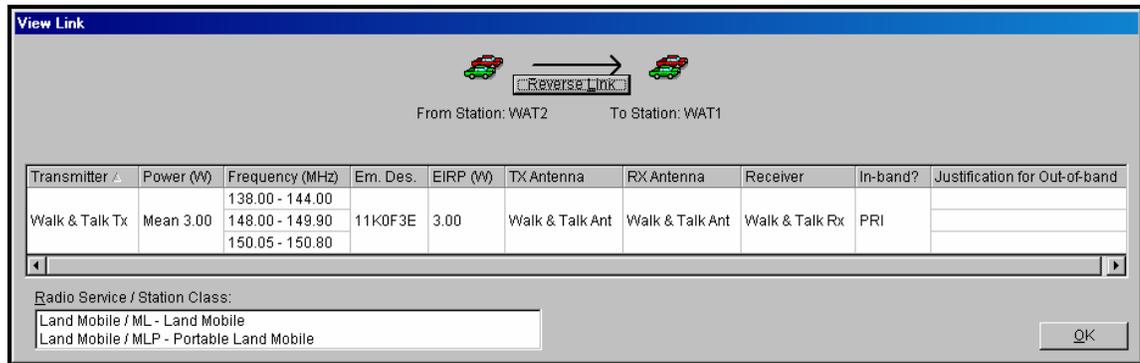
Step 21. Since we only have one transmitter, receiver, transmitter antenna, and receiver antenna we cannot choose another but we can enter the Coupling Loss and its classification, and select the Modes to be certified. For now we will **select each mode that has a PRI in the In-band? column**, as shown below.

Available Modes:				<input type="checkbox"/> In-band only
Power (W)	Frequency (MHz)	Emission	In-band?	
3.00 Mean	136.00 - 138.00	11K0F3E	No	
3.00 Mean	138.00 - 144.00	11K0F3E	PRI	
3.00 Mean	144.00 - 148.00	11K0F3E	No	
3.00 Mean	148.00 - 149.90	11K0F3E	PRI	
3.00 Mean	149.90 - 150.05	11K0F3E	No	
3.00 Mean	150.05 - 150.80	11K0F3E	PRI	
3.00 Mean	150.80 - 160.00	11K0F3E	No	

Step 22. Click the  button to transfer the **Available Modes** to list of **Selected Modes**.

Step 23. Click **Apply** to save your choices, and then click **OK** on the **Notification** window that pops up.

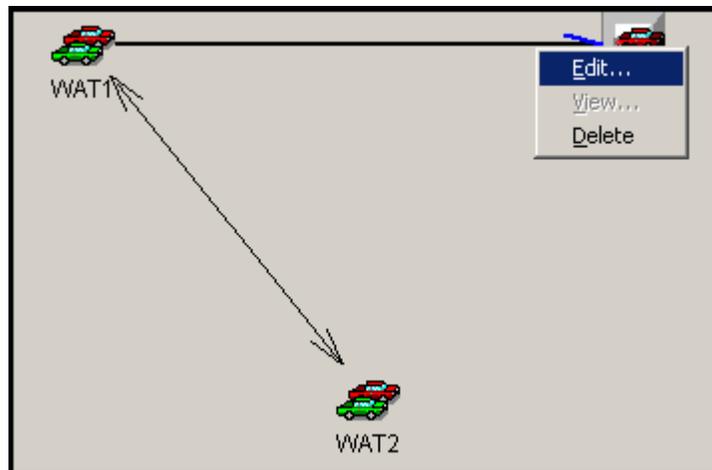
Step 24. Click the **View Link** button to see the link information that you have saved.



Step 25. Click **OK** to close the **View Link** window, and then **click Close** on the **Link Information** window to return to the tree view.

Step 26. Now we are going to use the graphical view to add data for our link from WAT1 to WAT3. First from the tree view, **click Diagram**. Notice the Receiver and Receiver antenna are blank because the receiving station is Generic.

Step 27. Next, **right-click** the arrow **end of the WAT1 to WAT3 link** and then **click Edit**.

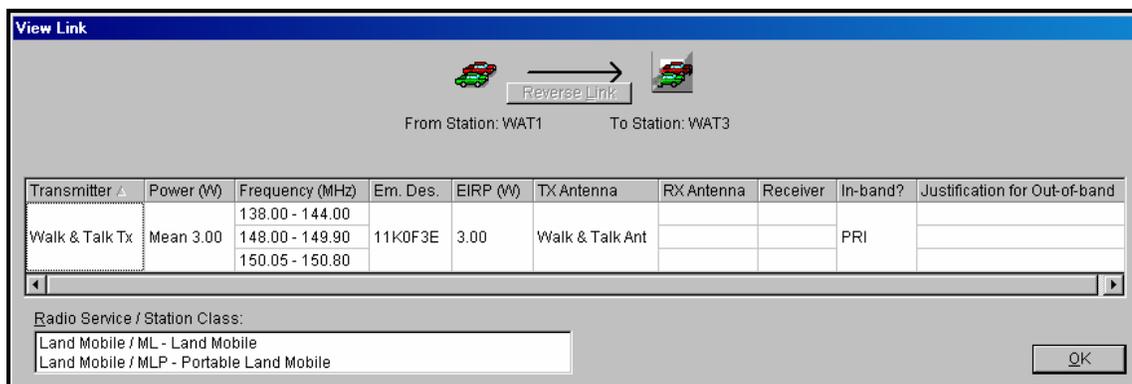


The familiar **Link Information** window will be displayed.

Step 28. Now that you know what to do, enter the following data for this link and save it.

- **Radio Service / Station Class -- ML and MLP.**
- **Coupling Loss -- Leave Blank.**
- **Modes -- 3.00 Mean    138.00 - 144.00 11K0F3E PRI**  
                                   **3.00 Mean    148.00 - 149.90 11K0F3E PRI**  
                                   **3.00 Mean    150.05 - 150.80 11K0F3E PRI**

The information should look like the following when you view the link.



**Step 29.** Click **OK** to close the **View Link** window, and then click **Close** on the **Link Information** window to return to the tree view.

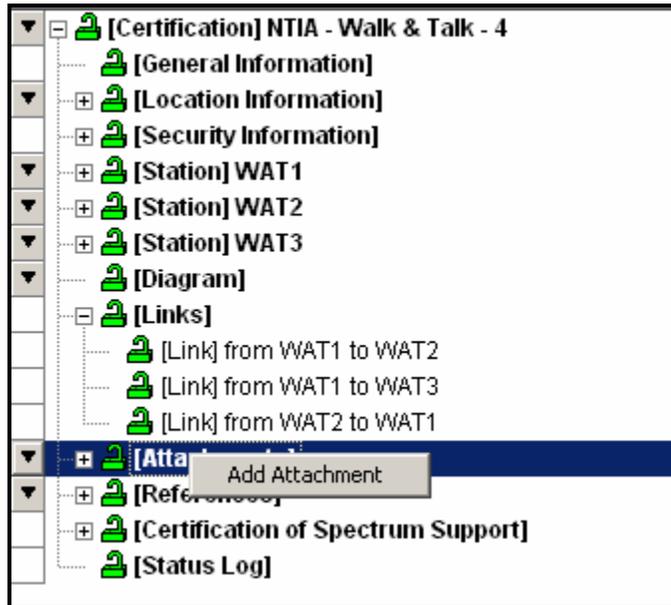
We have now finished entering data for our three links.

**HINT:** Notice that the dashed lines between the links have become solid lines. This indicates that data has been entered for the link.

## 4.8 Adding Attachments

Any kind of file can be attached to a certification application. The file could be a graphics file, a text file, or a spreadsheet file. The following steps will illustrate how to attach these files.

**Step 1.** **Right-click** on the **[Attachments]** node and then **click Add Attachment**.



The **Add Attachment** data grid is displayed.

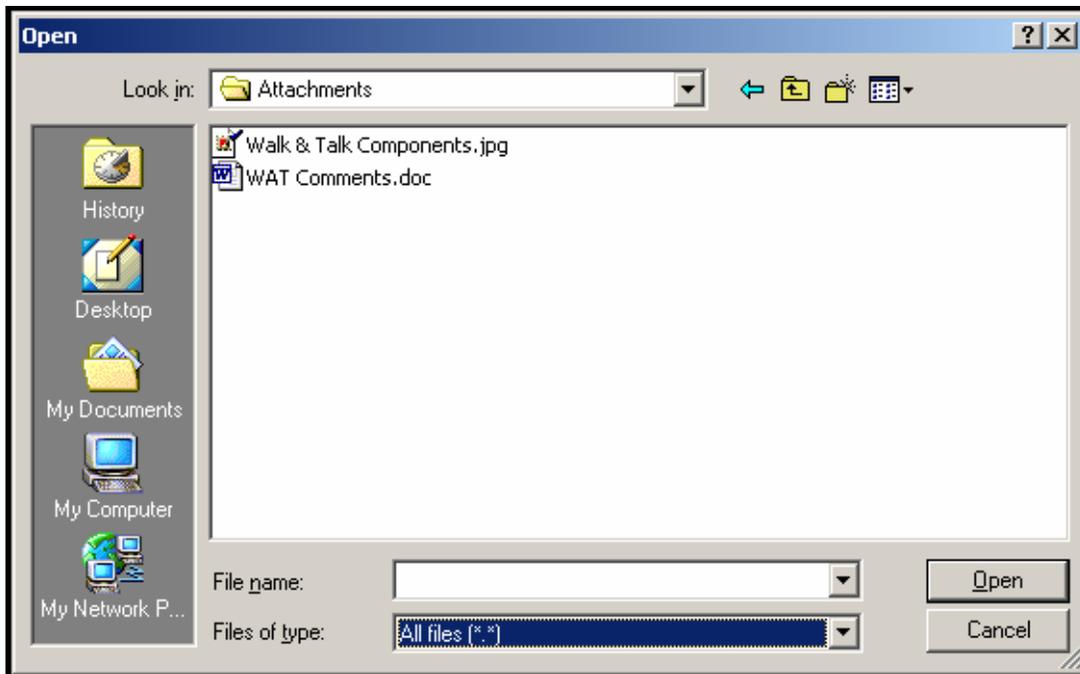
Data Item	Class	Value	Units
<b>Attachment</b>	U		
SPS Docket Number			
Date of Attachment			date

**Step 2.** **Click** in the **Attachment** Field and **click** the **Browse** button .

Data Item	Class	Value	Units
<b>Attachment</b>	U	<input type="text" value="..."/>	
SPS Docket Number			
Date of Attachment			date

The **Open** window will be displayed for you to select the file that you want to attach. You will find the attachment file on your training CD-ROM.

**Step 3.** Go to **{CD-ROM Drive Letter}/Training Material/Attachments** and **select all file types**.



**Step 4.** **Click** on **Walk & Talk Components.jpg** and then **click Open**. The file will now be listed as an attachment to your certification application.

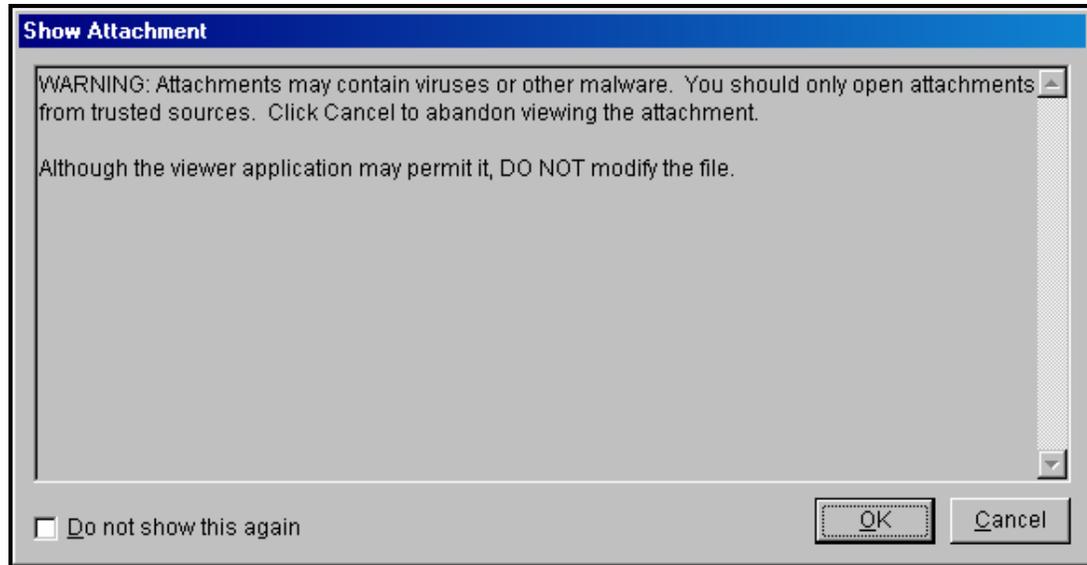
Data Item	Class	Value	Units
<b>Attachment</b>	U	 Walk & Talk Components.jpg	
SPS Docket Number			
Date of Attachment			date

**Step 5.** Enter the following data

Field	Value
<b>Date of Attachment</b>	<b>02/06/2007</b>

**Step 6.** To view the file, **click** on .

The **Show Attachment** window will be displayed.



**HINT:** This window may be disabled by checking the  **Do not show this again** box, or by setting the correct preferences.

**Step 7.** Click **OK** to open the file.

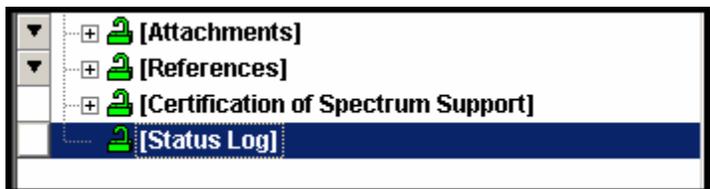
**Step 8.** Close the viewing window.

**Step 9.** We want to add the other file that was on our training CD-ROM as an attachment. Using what you have learned in Steps 1-7 above, add the file **WAT Comments.doc** as an attachment.

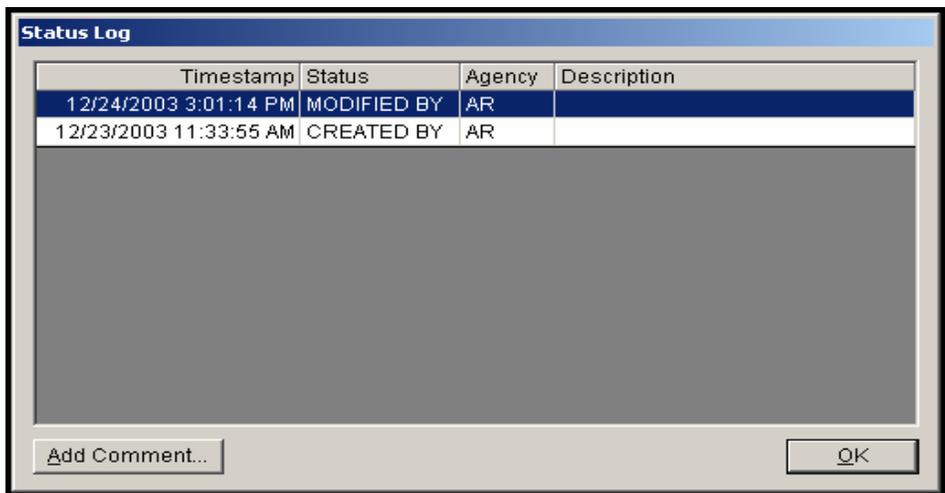
## 4.9 Viewing The Status Log

A status log is created and updated while a certification application is being processed. The next few steps will show how to view the log and to add status to the log.

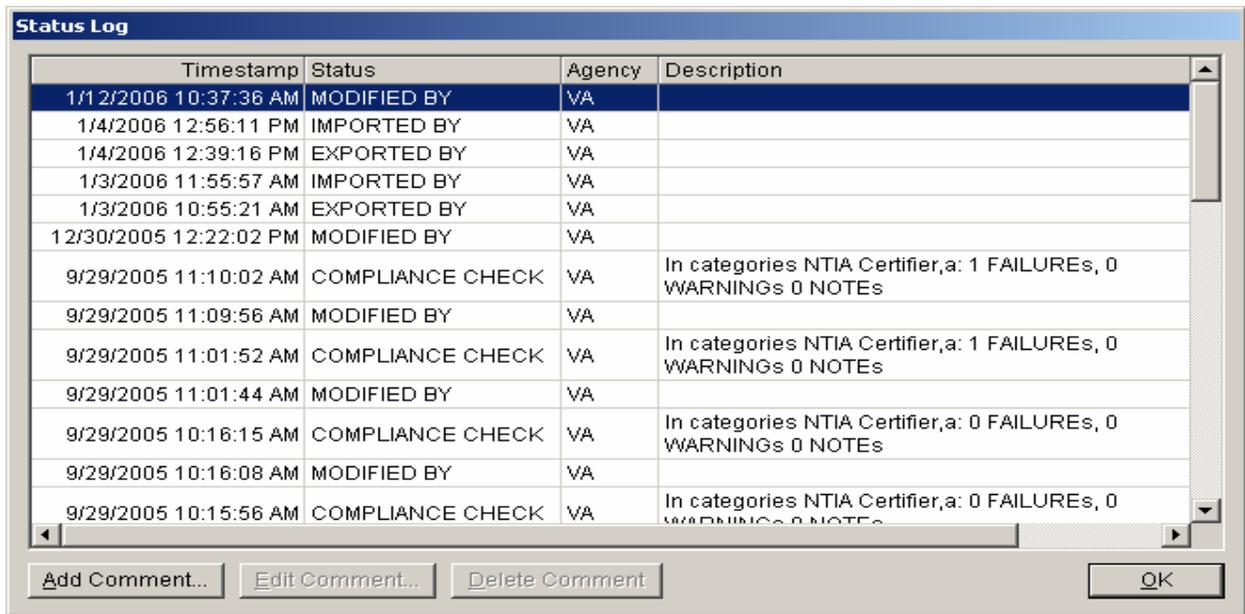
**Step 1.** From the tree view, **click** on the **[Status Log]** node.



The **Status Log** window is displayed.

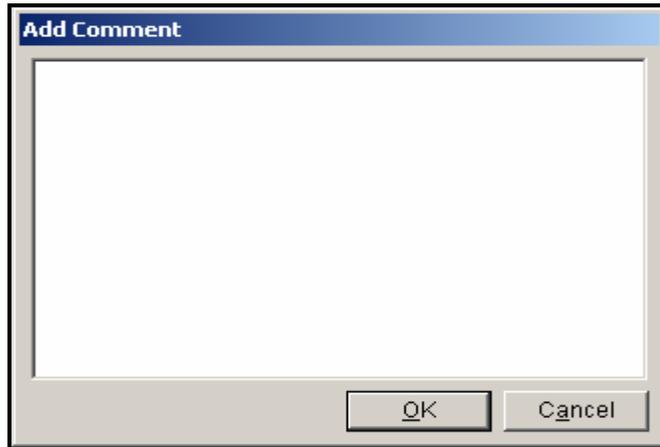


The following is an example log with more entries.

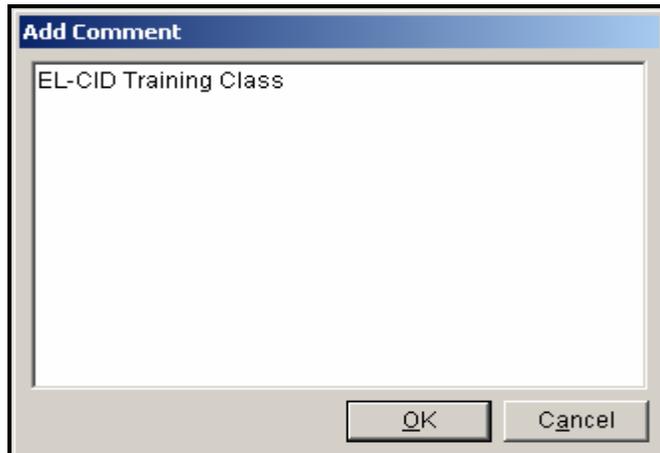


**Step 2.** Click the **Add Comment** button to add your own status entry.

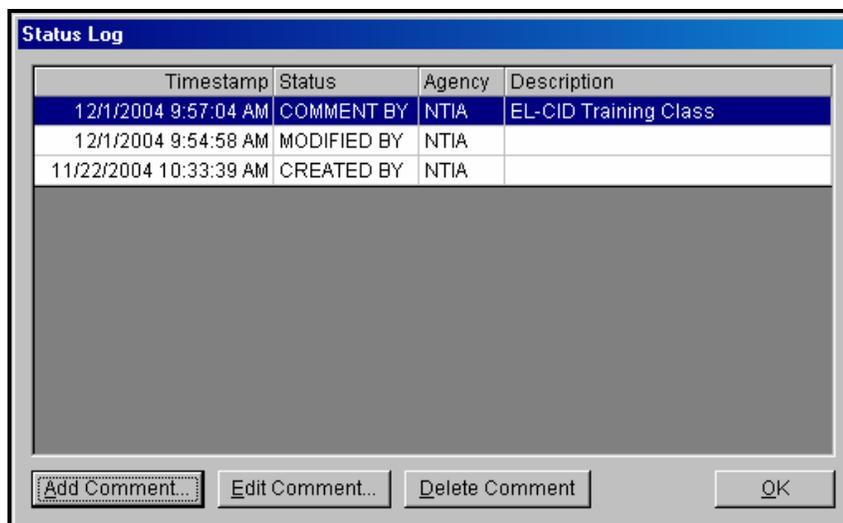
The **Add Comment** window is displayed.



**Step 3.** In the window **type EL-CID Training Class** and then **click OK**.



You will notice that your comment was added with the Status Code of COMMENT BY. Also notice that the latest status is displayed at the top of the log in chronological order.

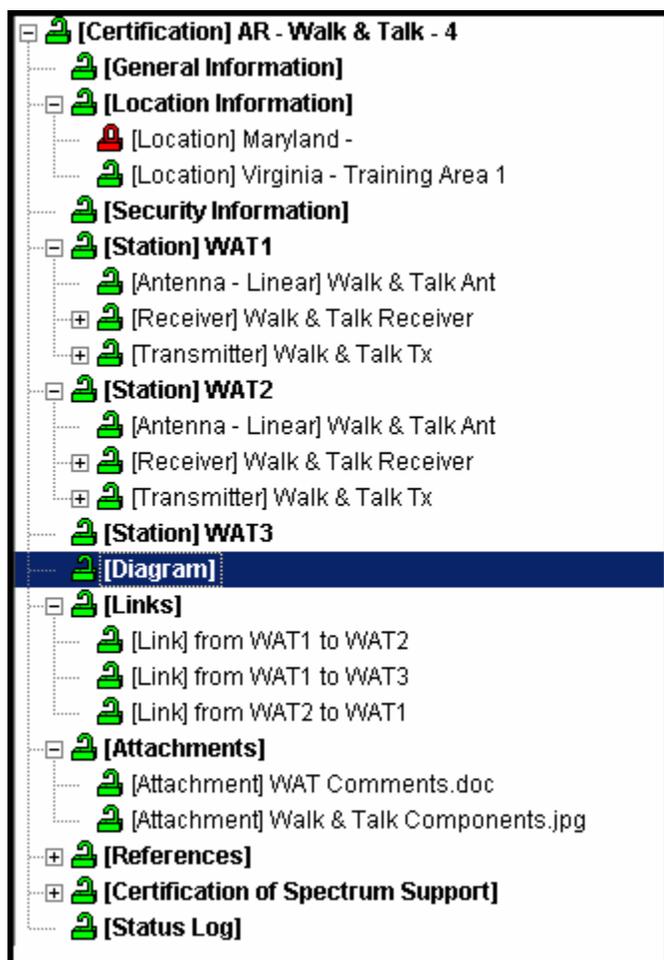


**HINT:** This comment may be edited (using the Edit and Delete buttons until the record is exported.



Step 4. Click **OK** to close the **Status Log** window.

The following shows what the tree view looks like so far.





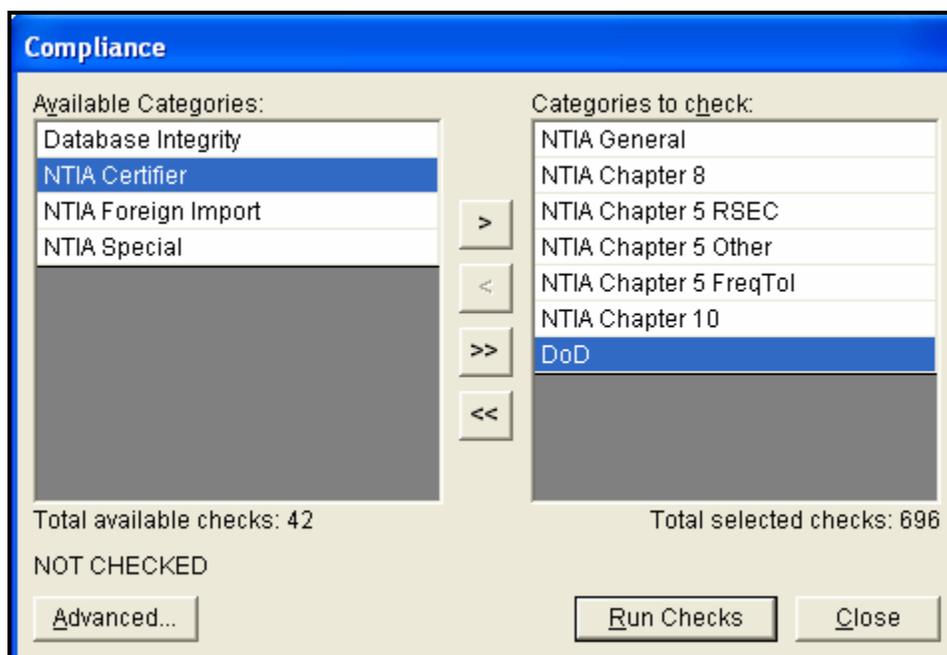
## 5. RUNNING COMPLIANCE CHECKS

Now that we have created our certification application we want to check it by running the EL-CID Compliance Checks.

**Step 1.** Click on the **Compliance Checks** button located on the Tool Bar.



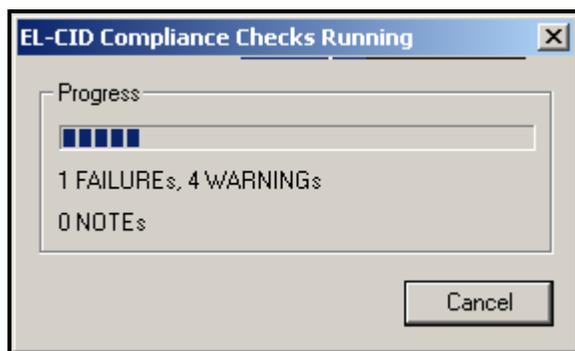
The **Compliance** window is displayed.



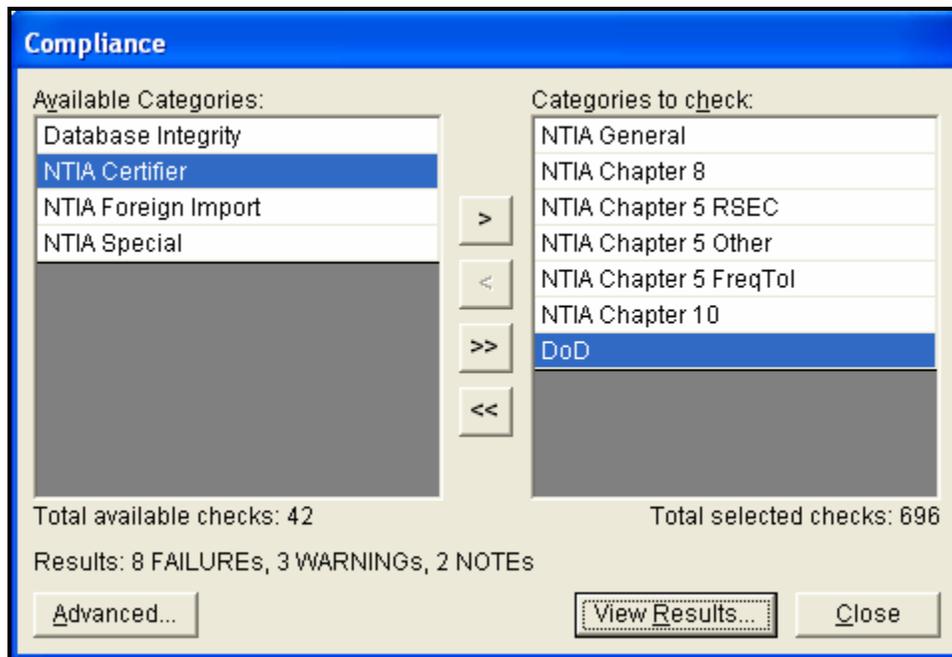
Items from the **Available Categories** list can be added to the **Categories to check** list by using the arrows in the middle of the screen. We will select the categories shown above.

You can view all the checks by clicking the **Advanced** button.

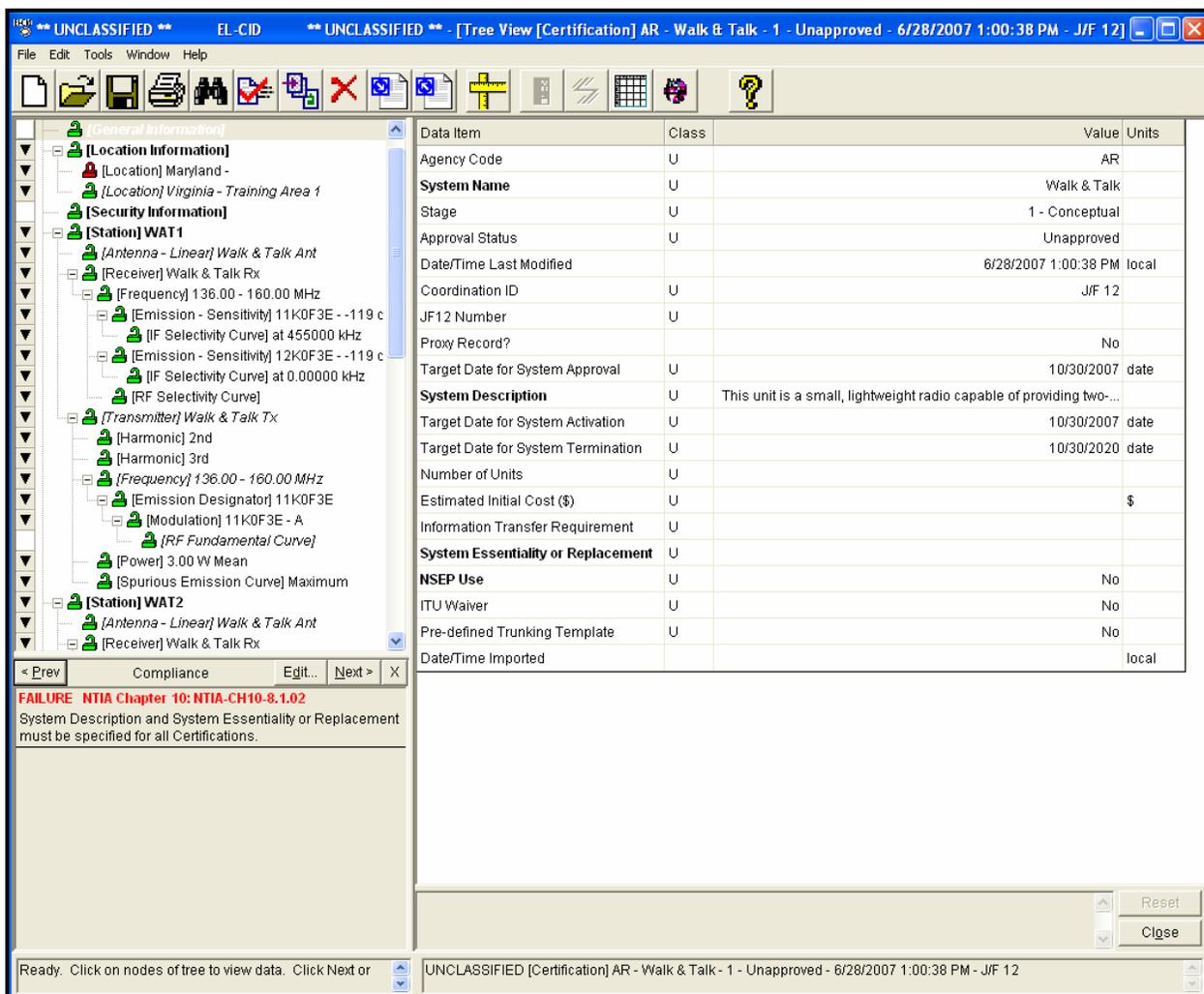
**Step 2.** Click the **Run Checks** button. The following **EL-CID Compliance Checks Running** window is displayed.



When the compliance checks have run the **Compliance** window is shown with the summary of the number of failures, warning, and notes.



**Step 3.** To see the results, **click** the **View Results** button. The screen containing the first error will be displayed and the relevant compliance message will be shown at the bottom left of the screen.

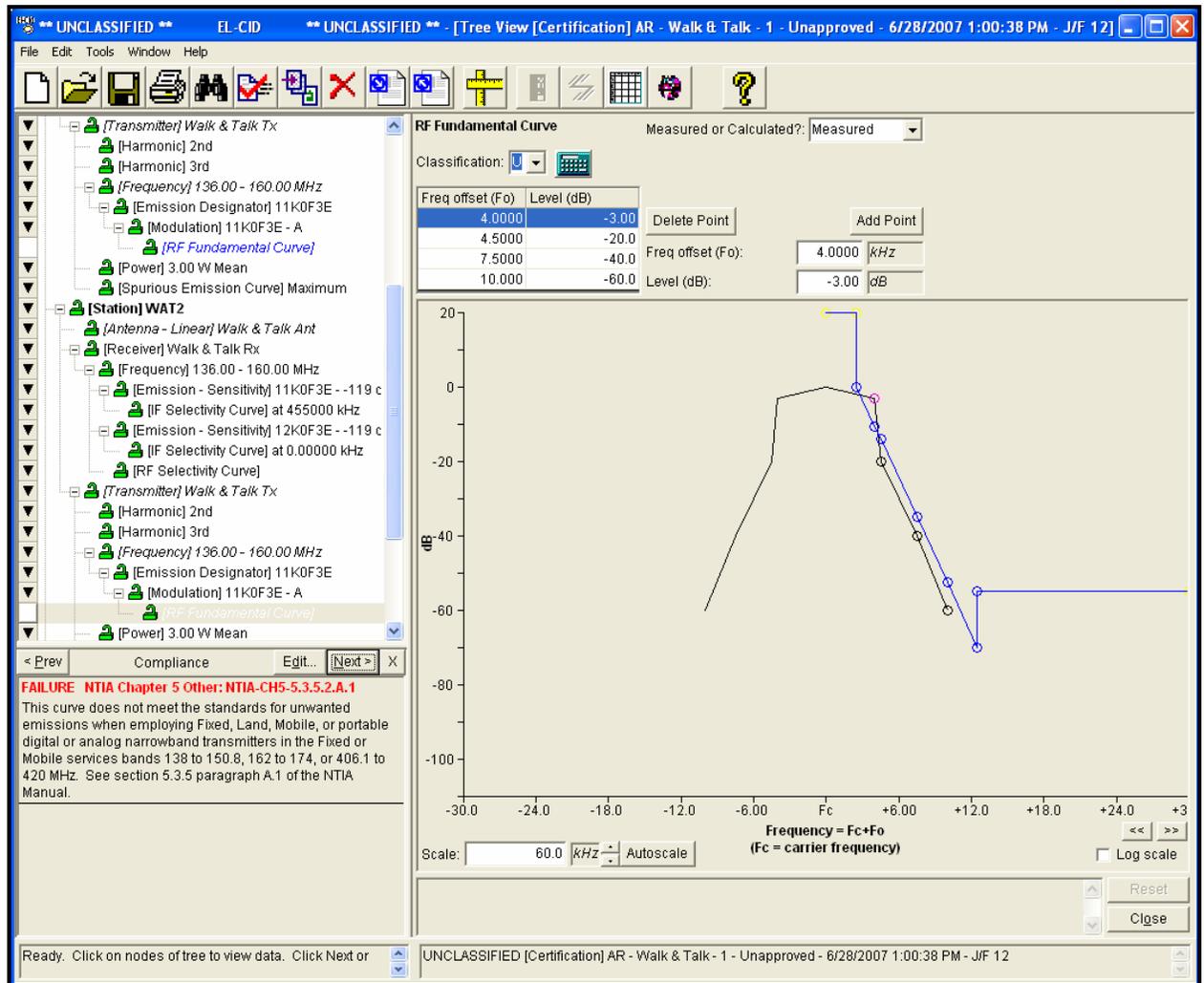


**HINT:** The **Compliance Result** window may be enlarged by dragging the divider upwards.

Notice that we did not fill out the field for **System Essentiality or Replacement**. This is a required field for a certifications.

**Step 4.** To see the remaining compliance messages **click** the **Next** button. As you can see the messages indicate the type of message (e.g., Failure, Warning, or Note), the reason for the message, and the reference document(s).

Notice in the Compliance Check that on the RF Fundamental Curve, the RF curve fails the NTIA standard curve.



Step 5. Click on the  button to close the Compliance Results window.

## 6. EXPORTING CERTIFICATION RECORDS

After you have corrected the certification error messages, you will want to export the certification so it can be forwarded to the next higher organization that will review it. The next few steps will illustrate the exporting process.

**Step 1.** Click the **Export** button on the tool bar

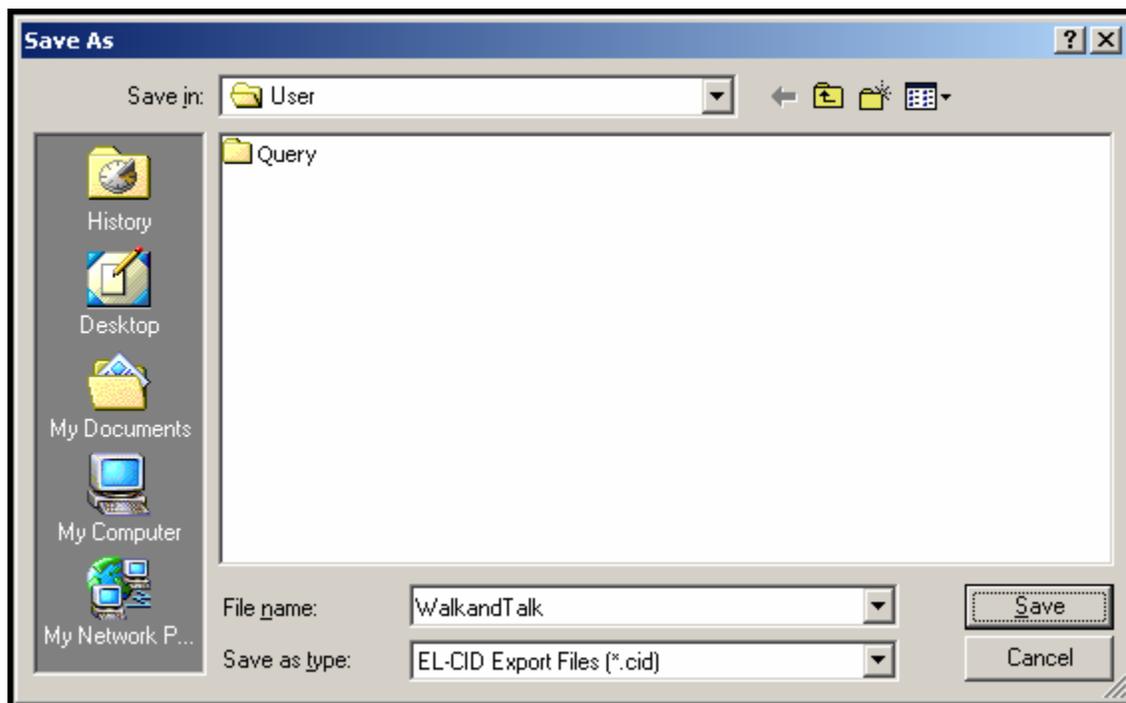


The **Export Certification** window is displayed. Navigate to your **D:** drive and select the folder **D:\ElcidData\User**



Notice that a default file name of export.cid will be entered, but you can specify a different filename.

**Step 2.** Click the **Browse** button and enter **WalkandTalk** as the filename, as shown below.



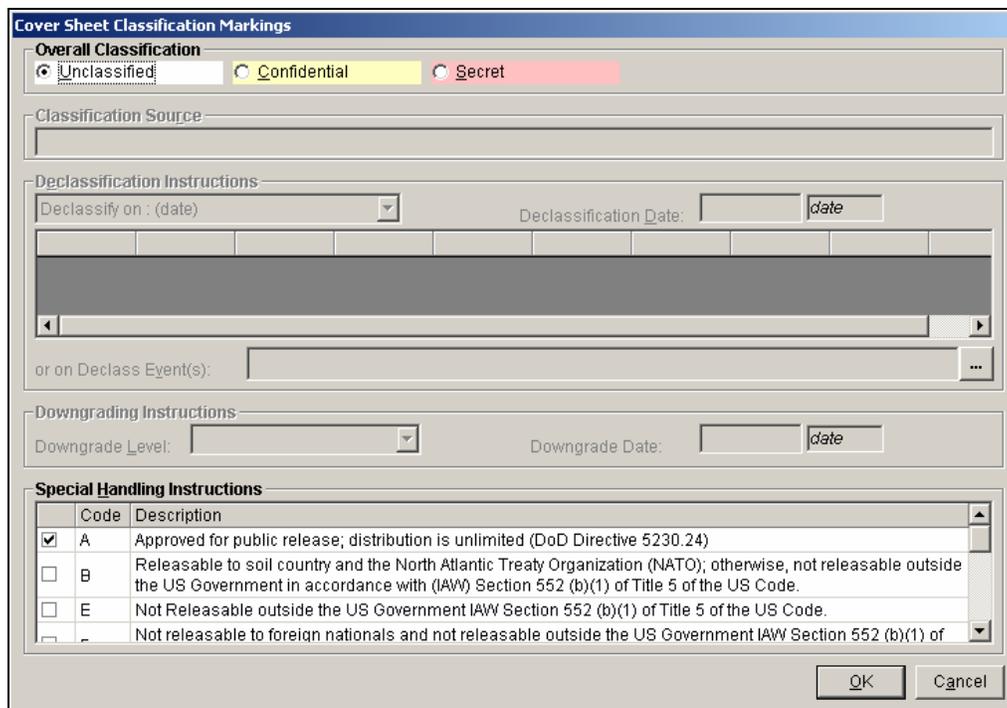
**Step 3. Click Save.** The **Export Certification** window is displayed again showing the path and filename that you selected.



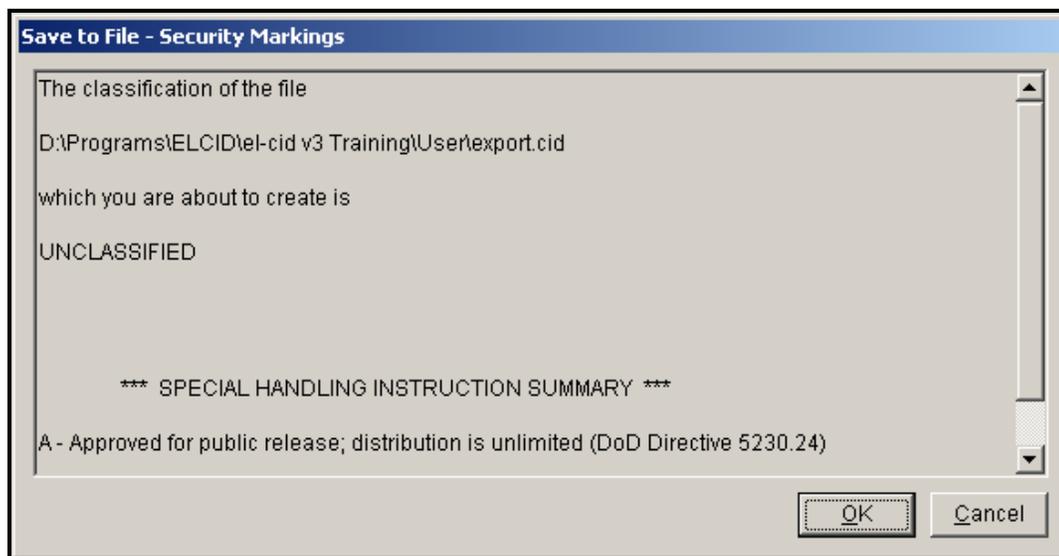
**Step 4. Type EL-CID Training** into the **Description** dialog box.



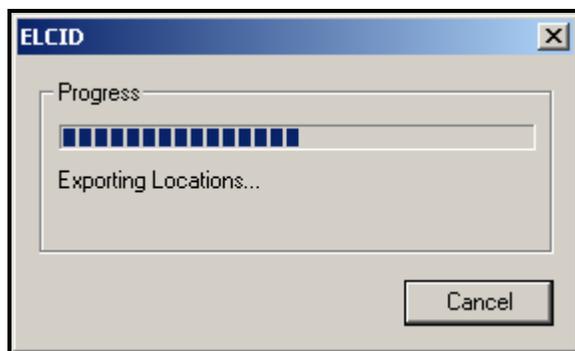
**Step 5. Click Export.** The **Cover Sheet Classification Markings** window is displayed.



**Step 6.** Click **OK**. The **Save to File – Security Markings** window is displayed.



**Step 7.** Click **OK**. A **Progress** window is displayed. When it closes, the file has been saved and the Tree View will be displayed.





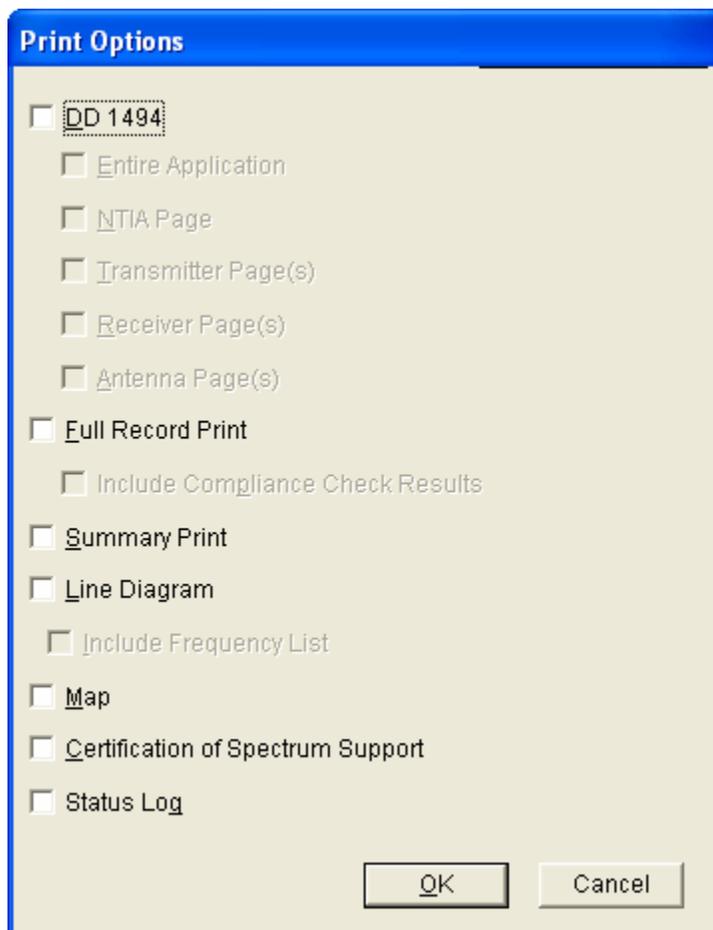
## 7. PRINTING A CERTIFICATION RECORD

If you want to print a copy of the certification record for filing, the next few steps will illustrate how this is done.

**Step 1.** Click the **Print** button on the toolbar.

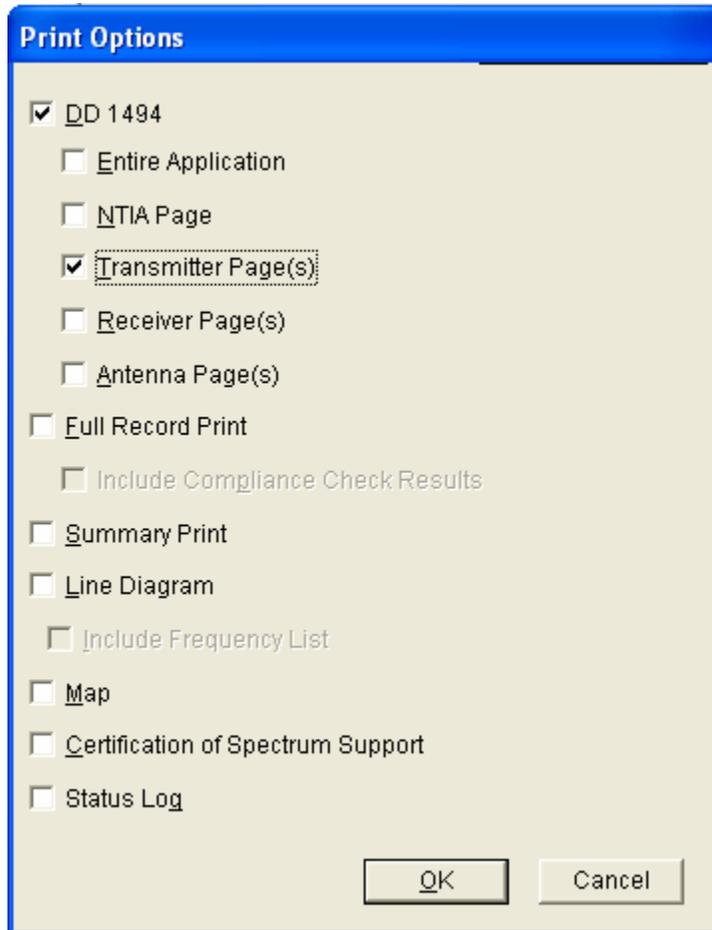


The **Print Options** window is displayed.

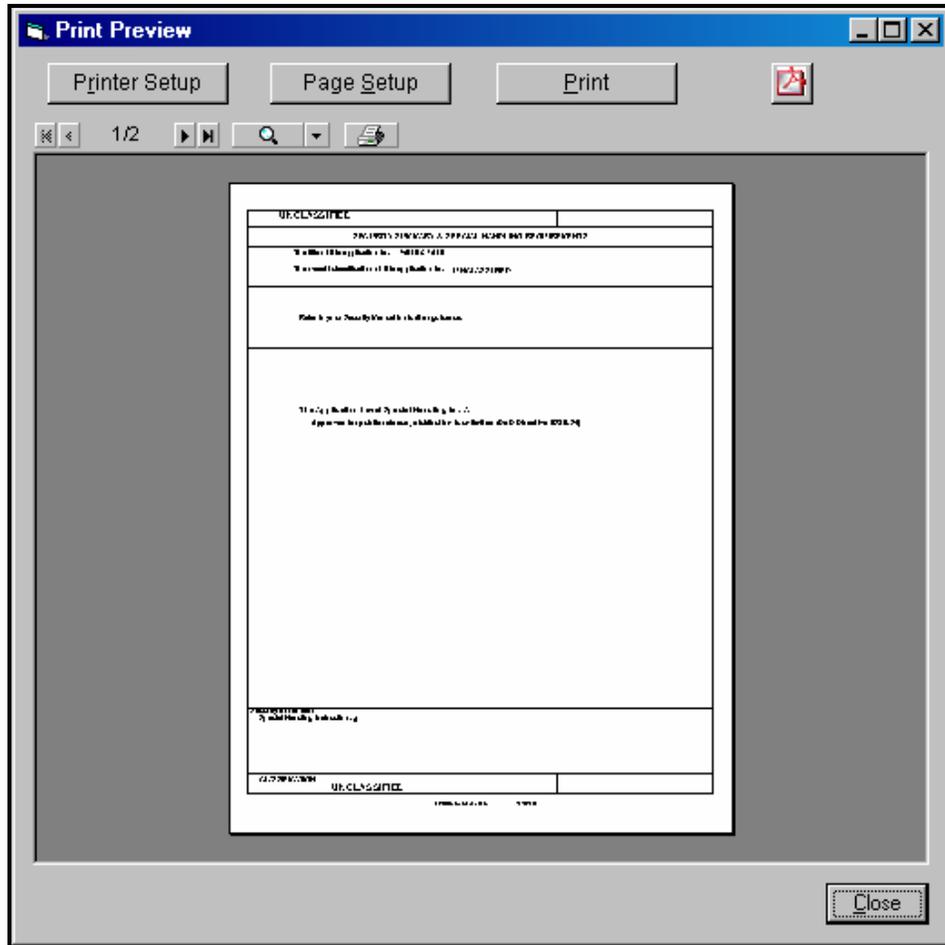


**Step 2.** Check the **DD 1494** check box and then you will see that additional options will become active for the DD 1494 output.

Step 3. Next, **Check** the **Transmitter Page(s)** check box and then **click OK**.

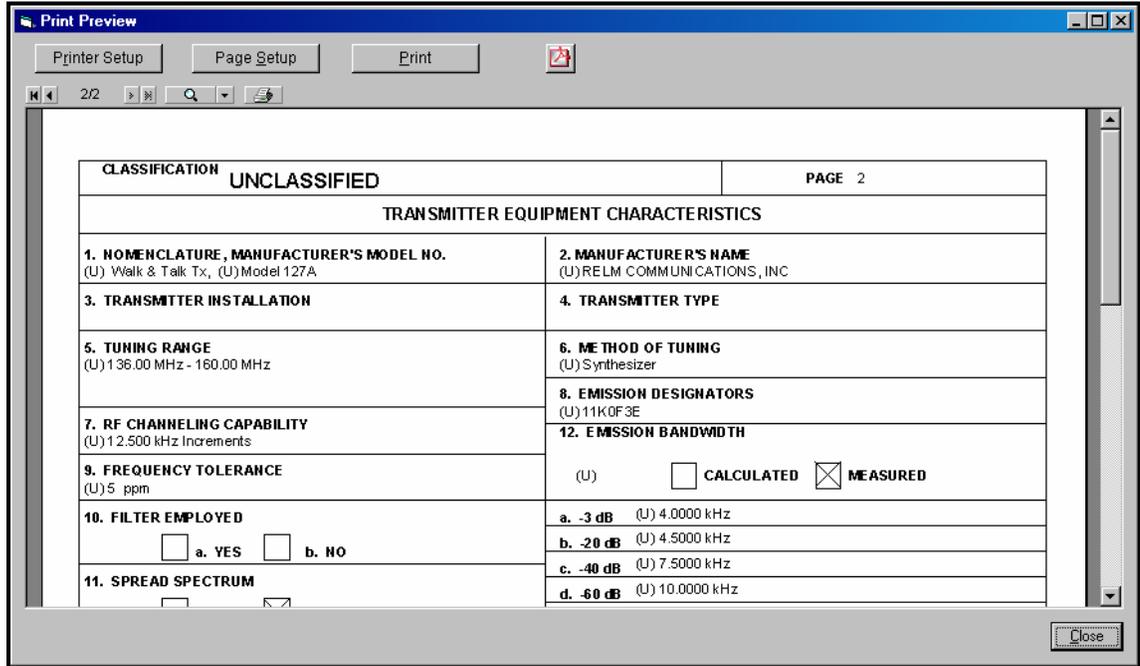


The **DOD FORM 1494** window is displayed showing the cover page.



**HINT:** It may be helpful to maximize the window.

Step 4. Click  to go to the next page. Use the **magnifying glass** icon to zoom in on the **Transmitter Equipment Characteristics** page.



The screenshot shows a 'Print Preview' window with a toolbar at the top containing 'Printer Setup', 'Page Setup', 'Print', and a magnifying glass icon. Below the toolbar is a navigation bar with page number '2/2', a search icon, and a refresh icon. The main content area displays a form with the following sections:

CLASSIFICATION UNCLASSIFIED		PAGE 2
TRANSMITTER EQUIPMENT CHARACTERISTICS		
1. NOMENCLATURE, MANUFACTURER'S MODEL NO. (U) Walk & Talk Tx, (U) Model 127A		2. MANUFACTURER'S NAME (U) RELM COMMUNICATIONS, INC
3. TRANSMITTER INSTALLATION		4. TRANSMITTER TYPE
5. TUNING RANGE (U) 136.00 MHz - 160.00 MHz		6. METHOD OF TUNING (U) Synthesizer
7. RF CHANNELING CAPABILITY (U) 12.500 kHz Increments		8. EMISSION DESIGNATORS (U) 11K0F3E
9. FREQUENCY TOLERANCE (U) 5 ppm		12. EMISSION BANDWIDTH (U) <input type="checkbox"/> CALCULATED <input checked="" type="checkbox"/> MEASURED
10. FILTER EMPLOYED <input type="checkbox"/> a. YES <input type="checkbox"/> b. NO		a. -3 dB (U) 4.0000 kHz
11. SPREAD SPECTRUM <input type="checkbox"/> <input checked="" type="checkbox"/>		b. -20 dB (U) 4.5000 kHz
		c. -40 dB (U) 7.5000 kHz
		d. -60 dB (U) 10.0000 kHz

A 'Close' button is located in the bottom right corner of the window.

Step 5. Click the **Close** button.

Step 6. Click the **Print** button again, and then **select** the **Full Record Print** check box and the **OK** button.

Step 7. **Review the various pages** of the output. If you want to actually print the document you would click the **Print** button (but don't actually print the document.)

Step 8. **Click Close**

Step 9. Click the **Print** button again, and then **select** the **Summary Print** check box and the **OK** button.

Step 10. **Review the various pages** of the output.

Step 11. **Click Close.**

Step 12. **Click File | Close** or use the  button to close the current certification application.

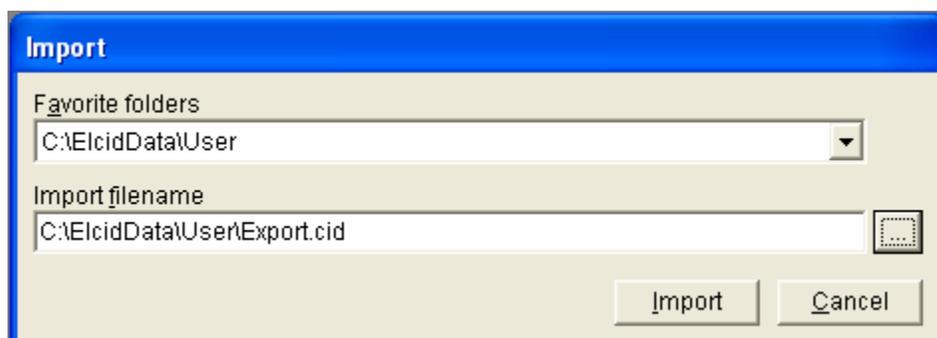
## 8. IMPORTING A CERTIFICATION APPLICATION

You may need to import a certification application that was prepared by someone else. The following steps will illustrate how to perform this import.

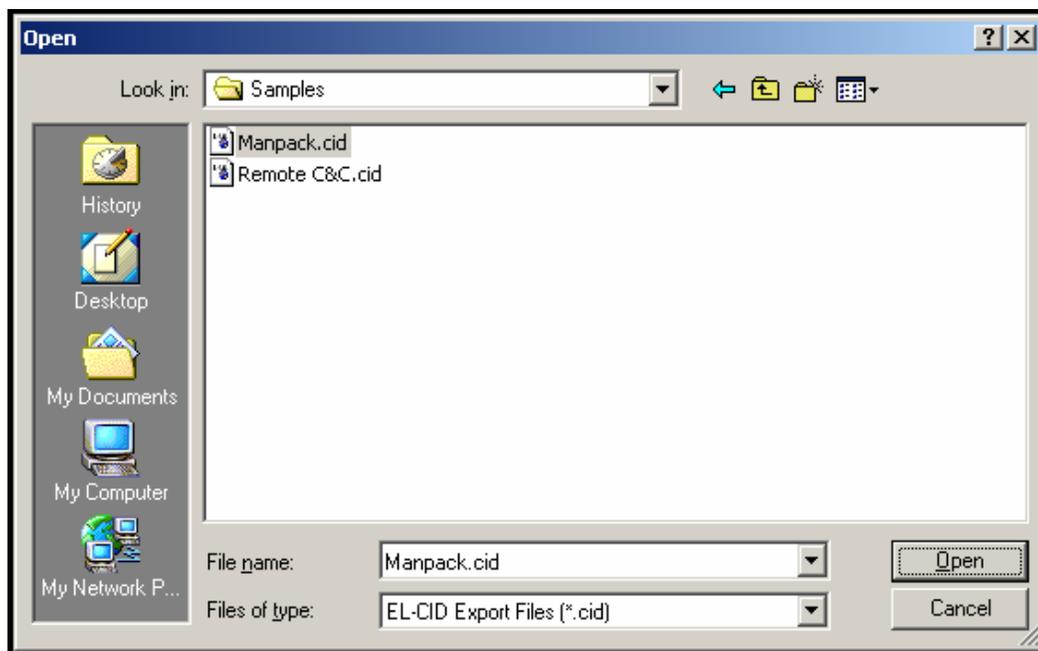
**Step 1.** Click the **Import** button.



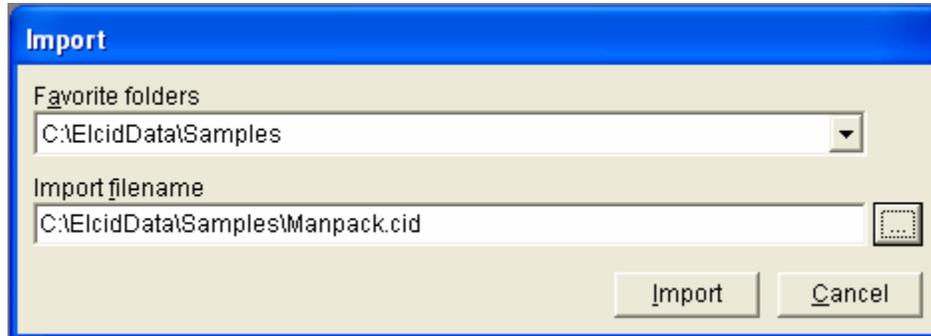
The **Import** window is displayed.



**Step 2.** Click the **browse** button to select the file to import. The folder we are using for training is **D:/ElcidData/Samples**. Highlight the filename **Manpack.cid** and then click **Open**.



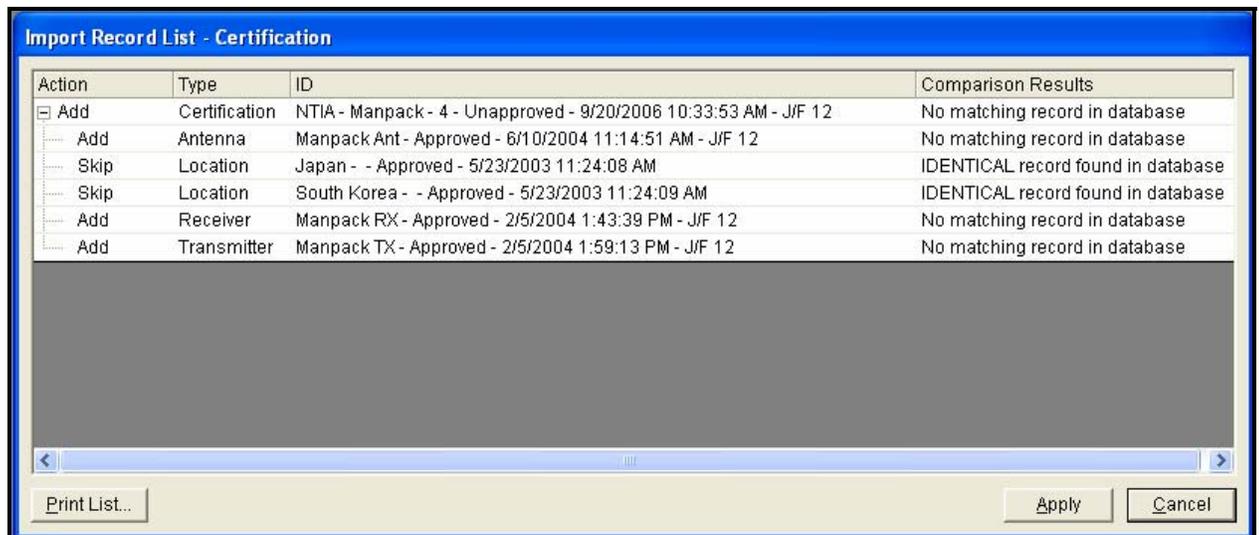
The **Import** window displays the selection.



**Step 3.** **Click Import.** The **File Description** window is displayed.



**Step 4.** **Click OK.** The **Import Record List - Certification** window is displayed.



Notice the locations are marked Skip because identical Location records already exist in the database. There is no point in importing such records and creating duplicates. Instead, when the Manpack certification is imported, it will be associated with the existing Location records already in the database.

**Step 5.** **Click Apply.** The **Progress** window is briefly displayed and then the **Import Record List - Certification** window is again displayed.

**Step 6.** **Click OK** to close the window.

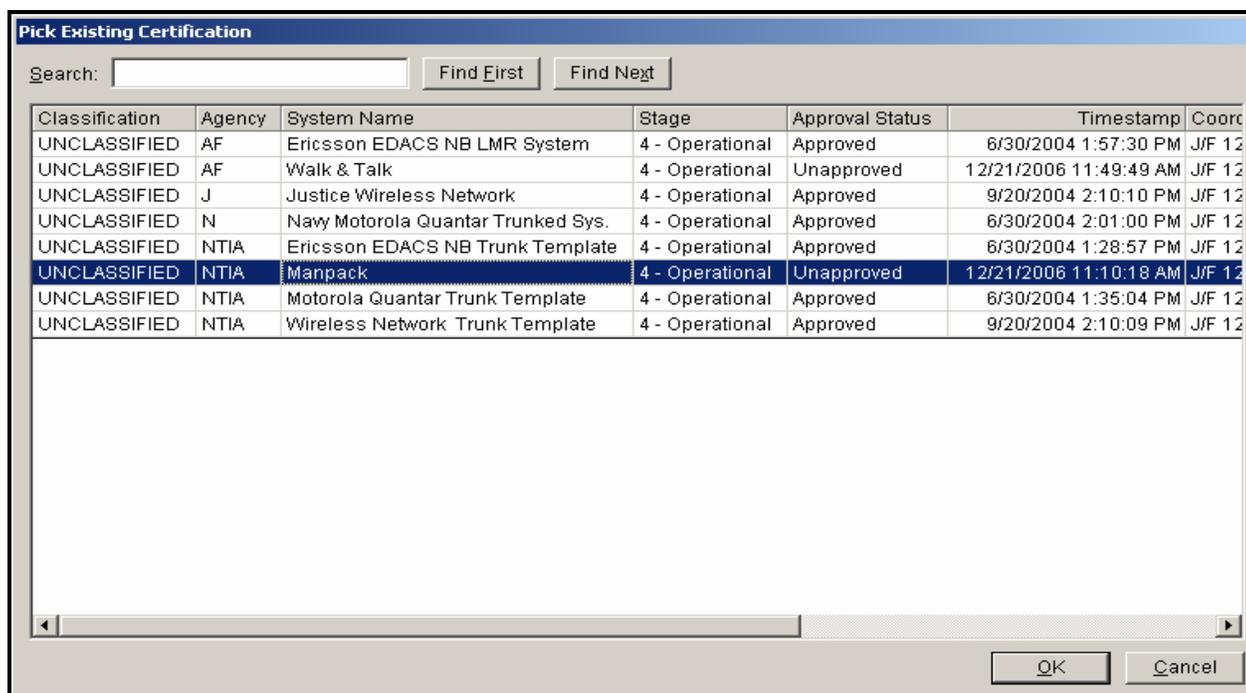
## 9. OPENING AND EDITING AN UNAPPROVED CERTIFICATION RECORD

Once you have saved or imported a certification application that has not been approved you can open it and then edit it. The following steps show how you can do this.

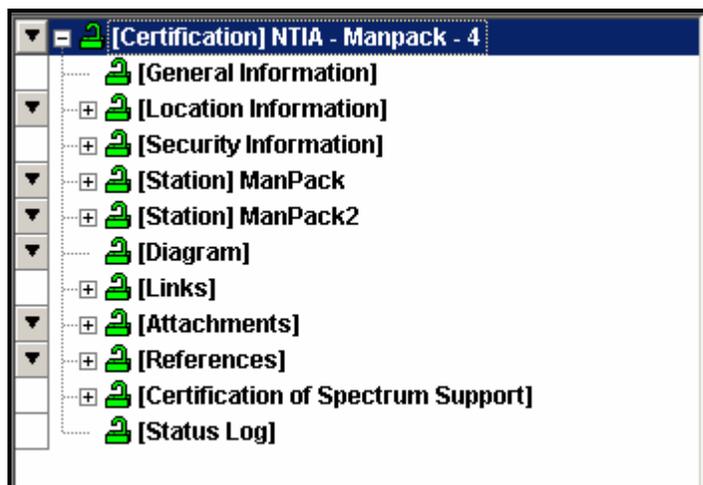
Step 1. Click the **Open** button to open a certification.



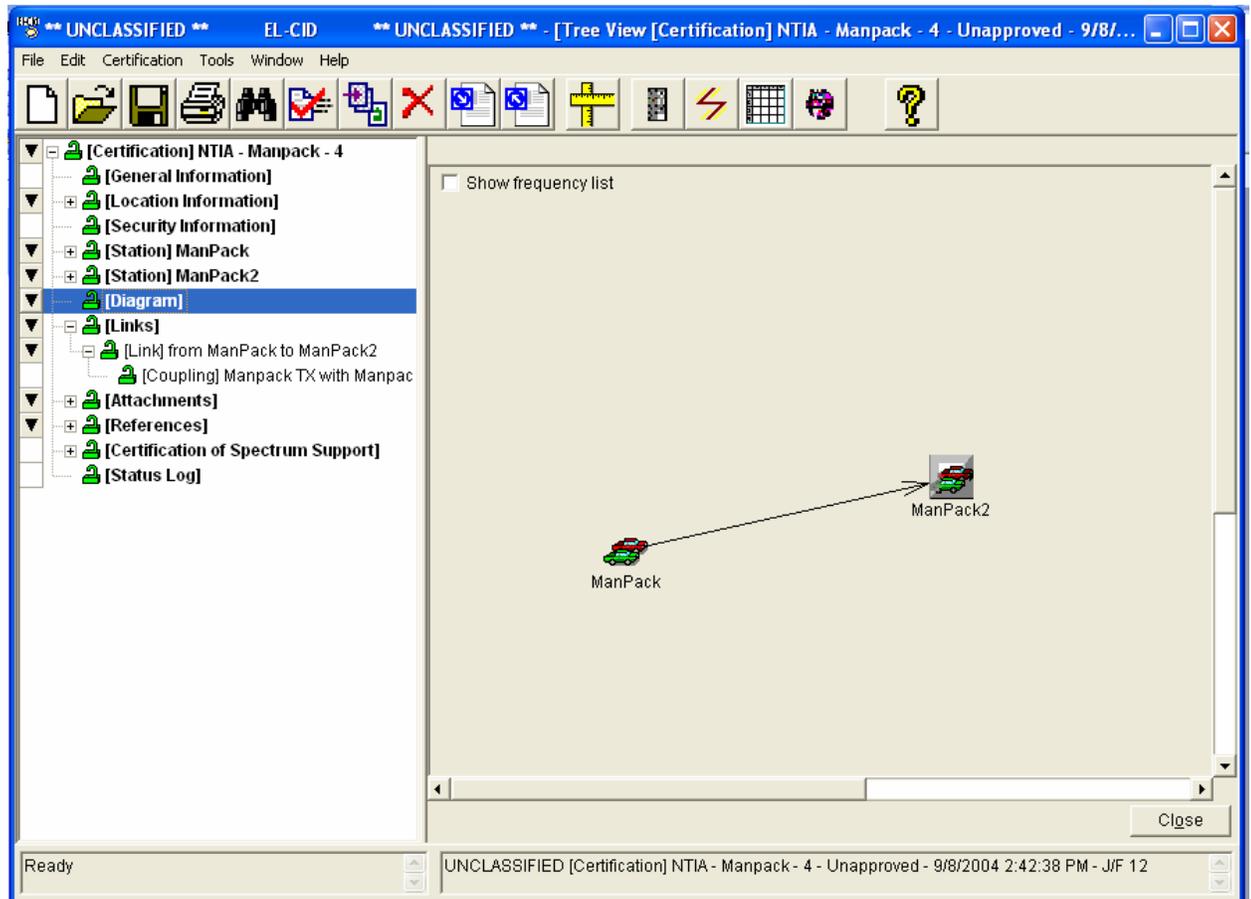
The **Pick Existing Certification** window is displayed.



Step 2. Highlight the **Manpack** system and then **click OK**. The Certification's tree view is open.



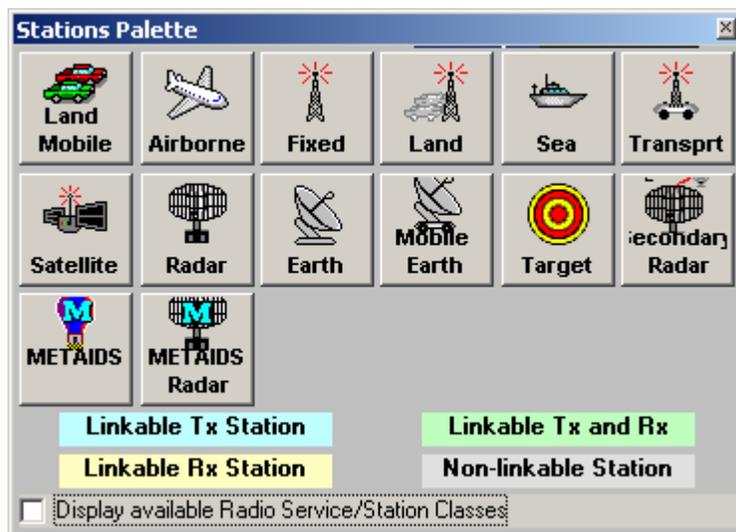
Step 3. Click **[Diagram]**. The **Diagram** node is open.



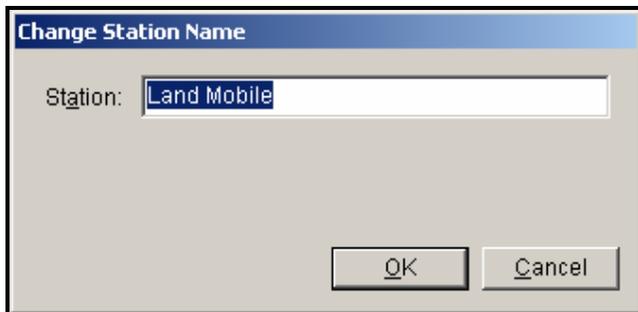
Step 4. Click the **Show/hide Stations Palette** button.



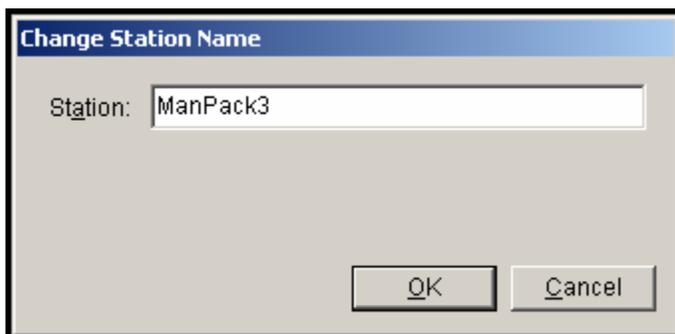
The **Stations Palette** window is displayed.



**Step 5.** Click on the **Land Mobile** icon and drag to the drawing area.



**Step 6.** Change the name to **ManPack3** and click **OK**. The new icon will be displayed on the graphic screen with the new name.

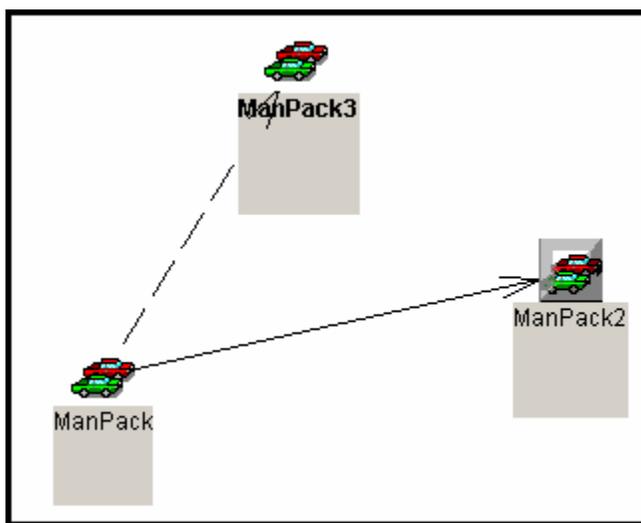


**Step 7.** Click the **Stations Palette** button again to close the Station Palette window.

**Step 8.** Click the **Create New Links** button to switch to Link mode.



**Step 9.** Click on the **ManPack** icon, and then click on the **ManPack3** icon. A link from the ManPack station to the ManPack3 station will be drawn, as shown below.

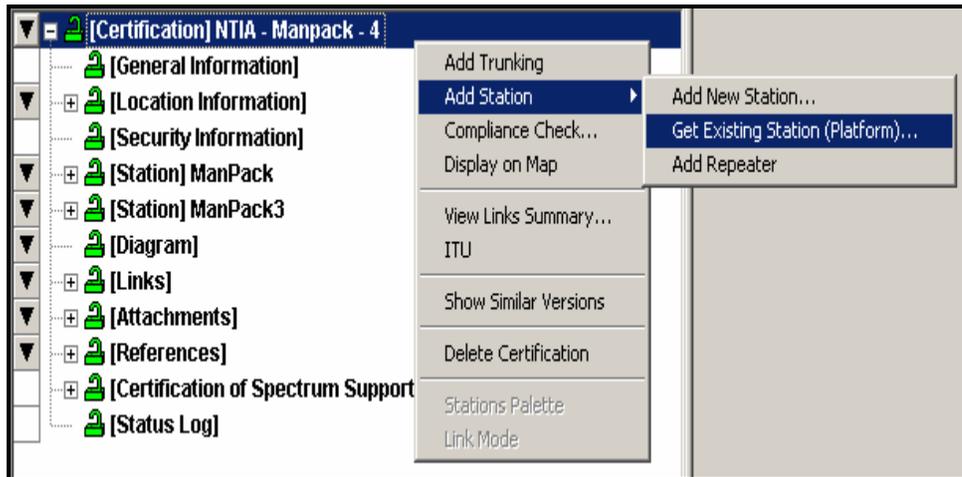


**Step 10.** Click on the **ManPack3** icon, and then click on the **ManPack** icon. A link from the ManPack3 station to the ManPack station will be drawn (i.e., the link will be drawn with arrows at both ends of the link).

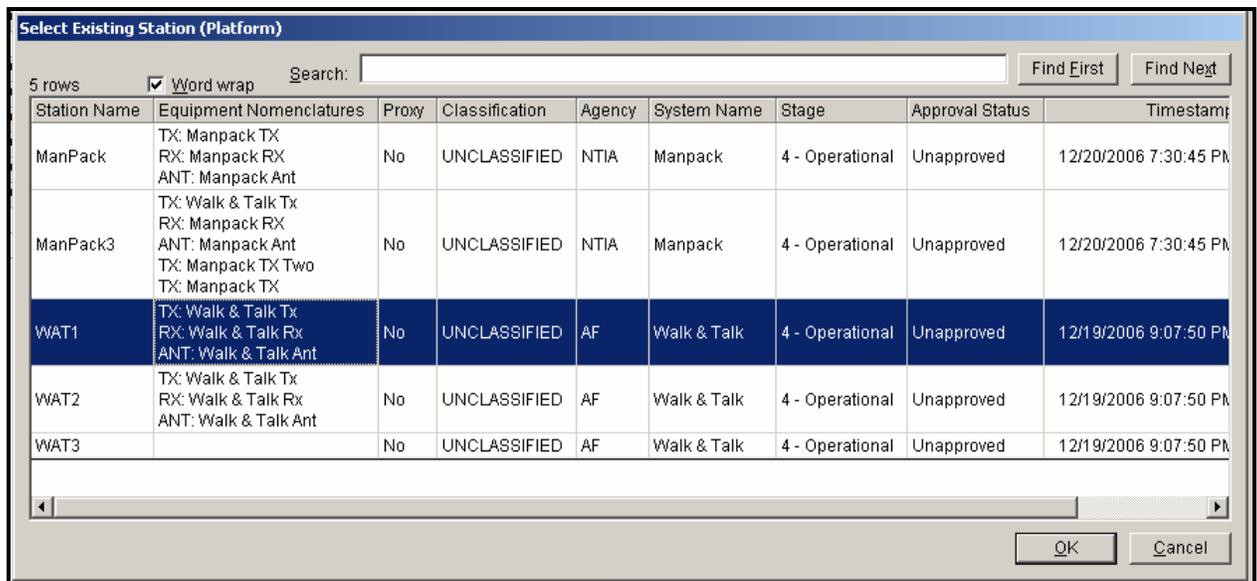
Step 11. Click the **Create New Links** button again to turn the link mode off.

Step 12. To add an existing station to the certification Click the **Certification** (top) node.

Step 13. Then right-click on **[Certification] NTIA – Manpack – 4** and select **Add Station | Get Existing Station (Platform) ...**

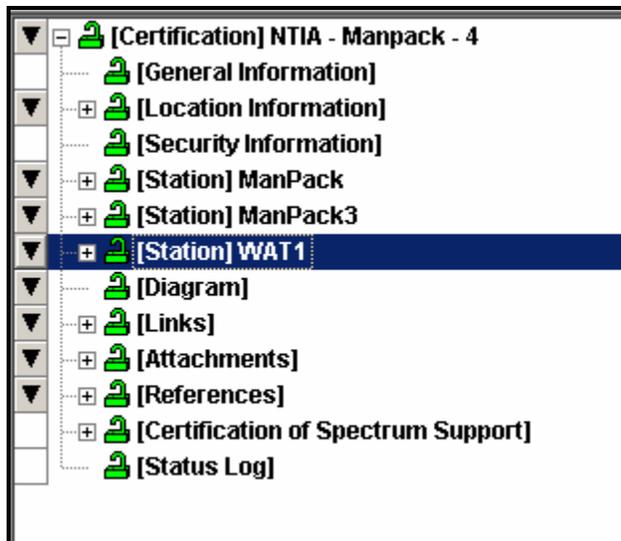


The Select Existing Station (Platform) window is displayed.



Step 14. Select station WAT1, then click **OK**.

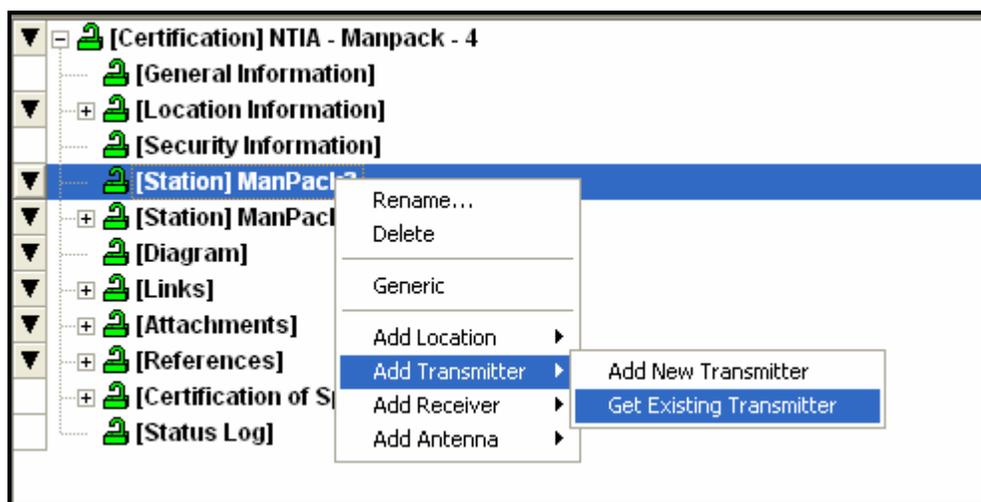
The station is added to the certification treeview.



Step 15. **Expand** the station node to see that all equipment from the WAT1 station was copied as well.

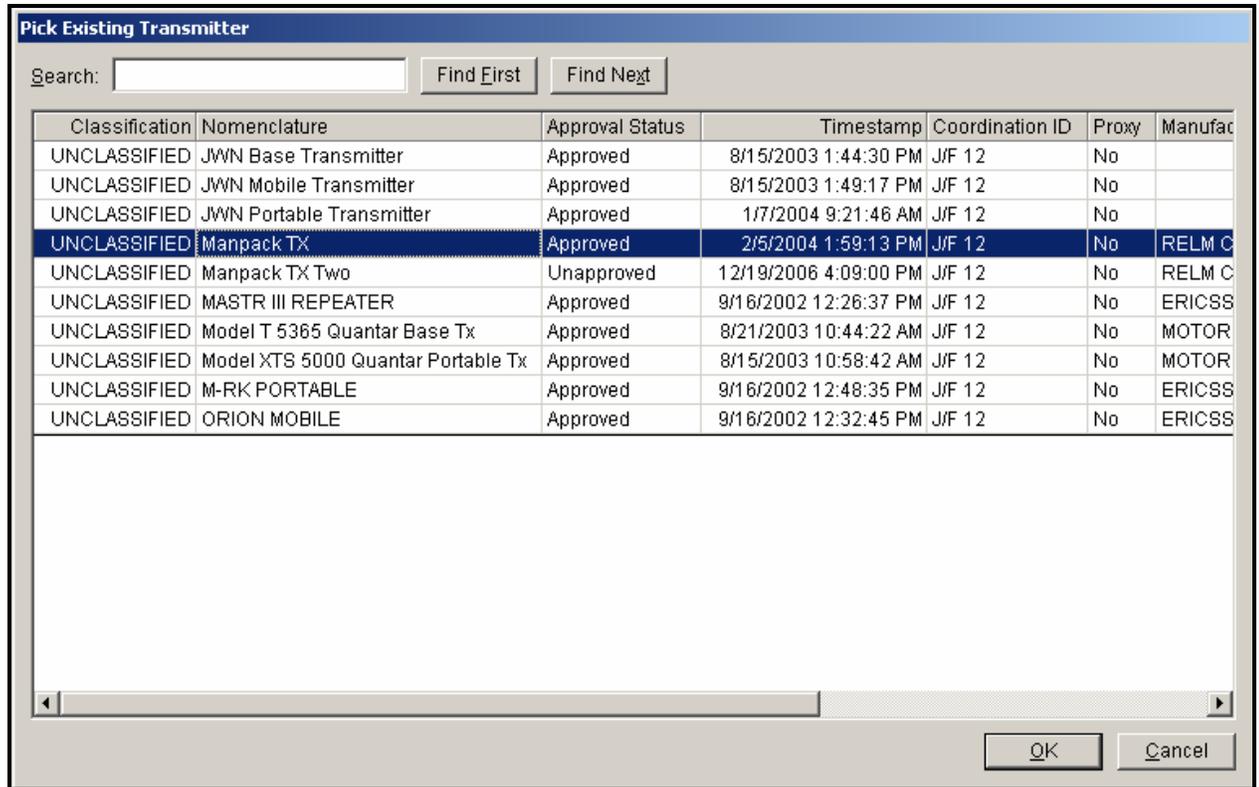
Step 16. **Right click** on station WAT1 and select **Delete**.

Step 17. **Right-click** on **[Station] Manpack3 | Add Transmitter | Get Existing Transmitter**.

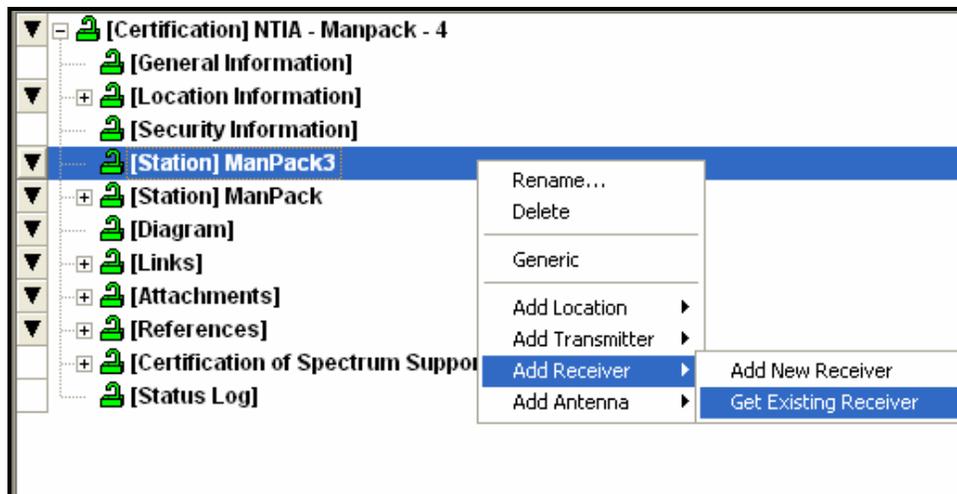


The **Pick Existing Transmitter** window is displayed.

Step 18. Highlight **Manpack TX** and then **click OK**.



Step 19. **Right-click** on **[Station] ManPack3 | Add Receiver | Get Existing Receiver**.



The **Pick Existing Receiver** window is displayed.

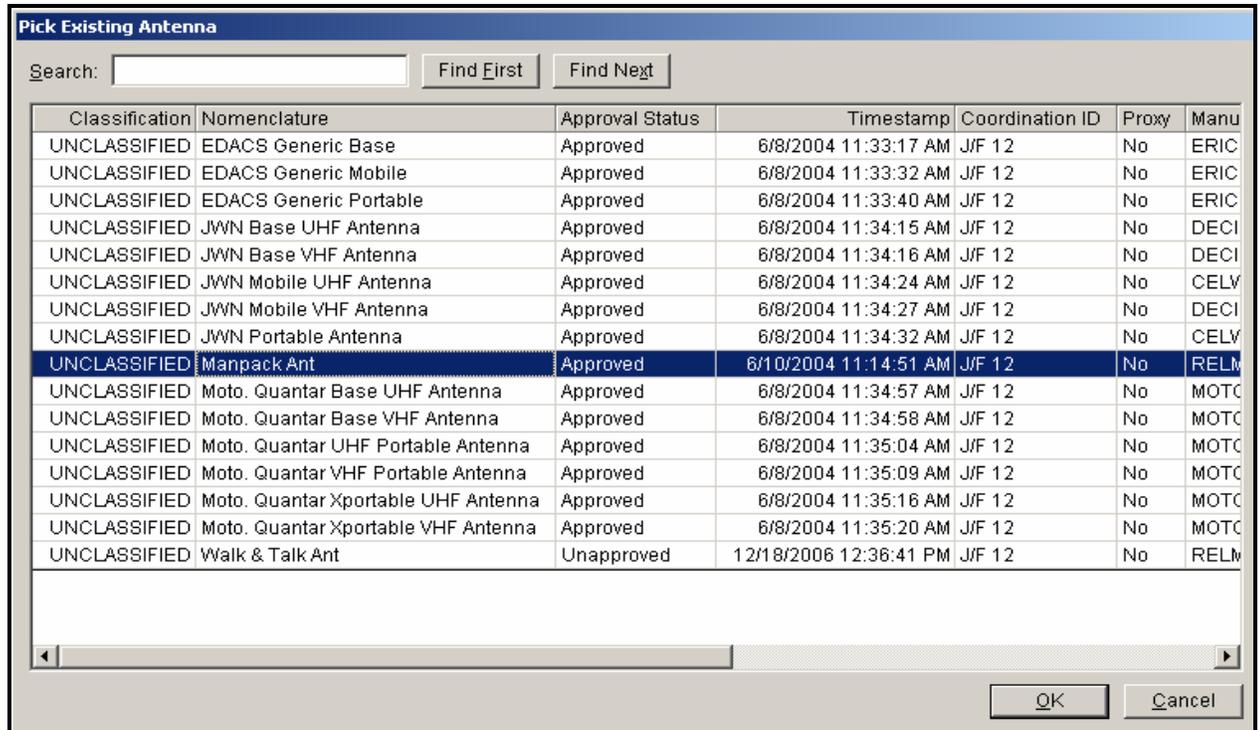
**Pick Existing Receiver**

Search:

Classification	Nomenclature	Approval Status	Timestamp	Coordination ID	Proxy	Manufacturer
UNCLASSIFIED	JWN Base Receiver	Approved	9/20/2004 2:08:39 PM	J/F 12	No	
UNCLASSIFIED	JWN Mobile Receiver	Approved	9/20/2004 2:09:33 PM	J/F 12	No	
UNCLASSIFIED	JWN Portable Receiver	Approved	9/20/2004 2:10:10 PM	J/F 12	No	
UNCLASSIFIED	Manpack RX	Approved	2/5/2004 1:43:39 PM	J/F 12	No	RELM COMMU
UNCLASSIFIED	MASTR III REPEATER	Approved	8/5/2003 2:05:01 PM	J/F 12	No	ERICSSON, L.
UNCLASSIFIED	Model T 5365 Quantar Receiver	Approved	8/11/2003 4:35:05 PM	J/F 12	No	MOTOROLA C
UNCLASSIFIED	Moto. Portable UHF Receiver	Approved	6/6/2003 1:29:47 PM	J/F 12	No	MOTOROLA C
UNCLASSIFIED	Moto. Portable VHF Receiver	Approved	6/6/2003 1:14:43 PM	J/F 12	No	MOTOROLA C
UNCLASSIFIED	M-RK PORTABLE	Approved	8/5/2003 2:14:39 PM	J/F 12	No	ERICSSON, L.
UNCLASSIFIED	ORION MOBILE	Approved	8/5/2003 2:11:38 PM	J/F 12	No	ERICSSON, L.

Step 20. Highlight Manpack RX and then click OK.

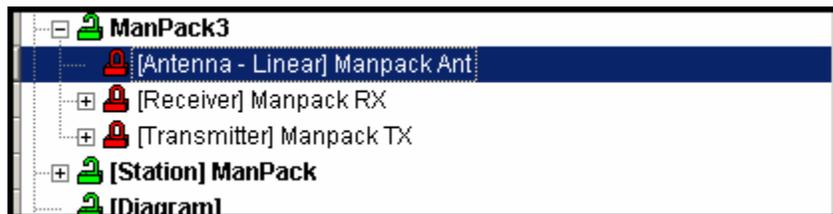
Step 21. **Right-click** on the **[Station] ManPack3 | Add Antenna | Get Existing Antenna**.



The **Pick Existing Antenna** window is displayed.

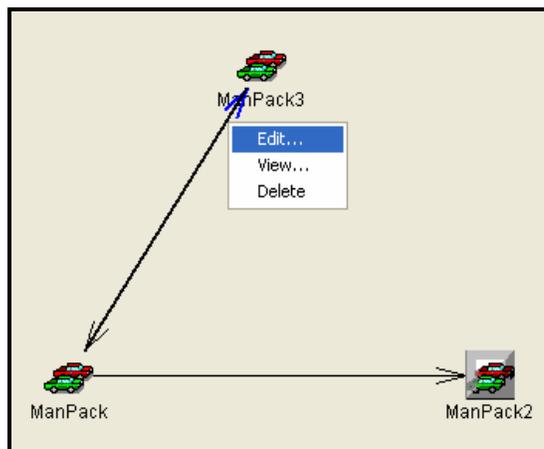
Step 22. **Highlight Manpack Ant**, and then **click OK**.

The equipment has been added to the station ManPack3.

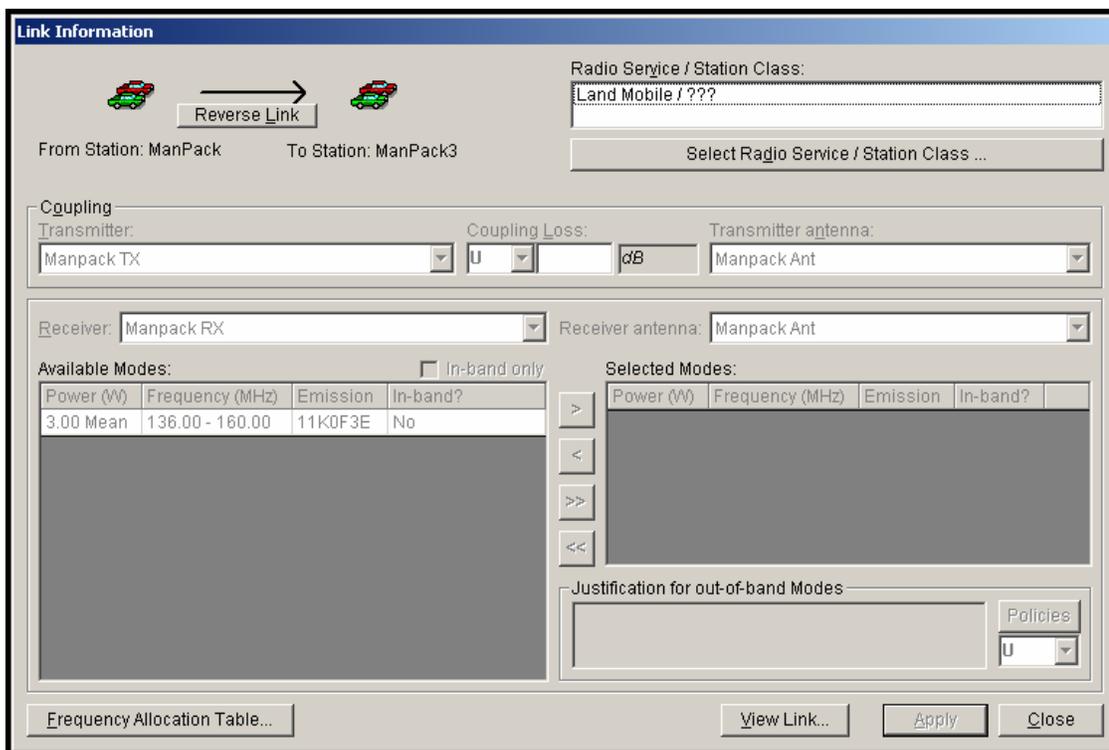


Step 23. **Click** on the **[Diagram]** node to switch to the diagram mode.

Step 24. **Right-click** on the **link line and arrow next to the Manpack3** icon and **select Edit**.



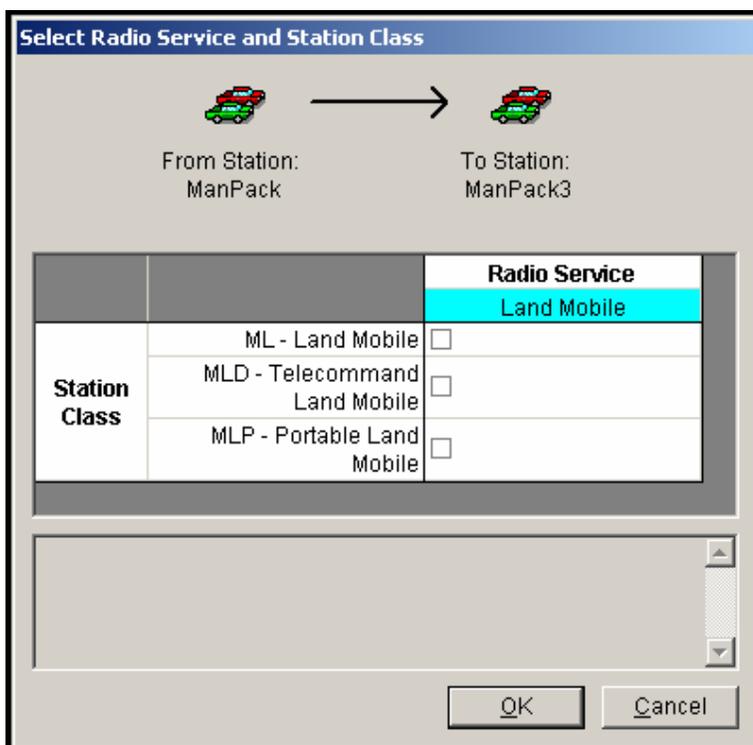
The **Link Information** window is displayed.



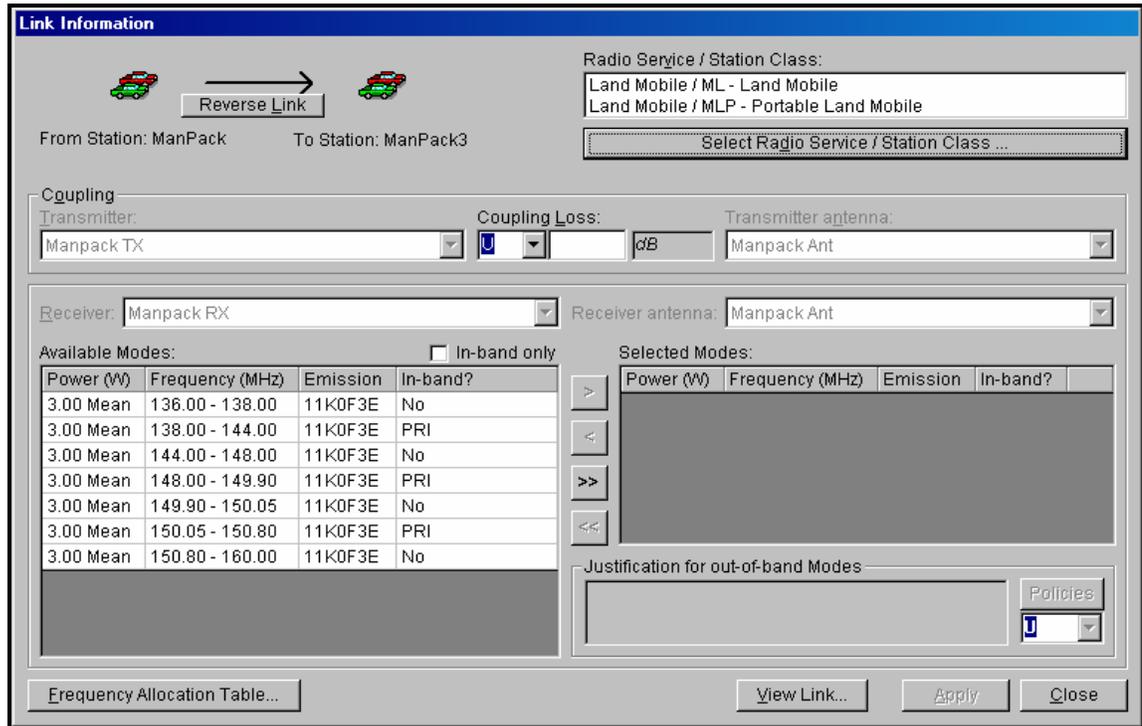
**Step 25.** Click the **Select Radio Service / Station Class** button.



The **Select Radio Service and Station Class** window is displayed.



Step 26. Select station class **ML** and **MLP** by checking the respective check boxes, and then click **OK**. The **Link Information** window now becomes active.



Since we only have one transmitter, receiver, and only one antenna each station all the pick lists are disabled. If you had more than one to choose from you could select from the lists by using the down arrow button beside each field. Notice that you could change the classification and coupling loss fields.

Step 27. Select from the available modes the modes that you want to certify. Hold down the **Ctrl key** and then click the 3 rows of available mode that have a **PRI** in the **In-band?** column.

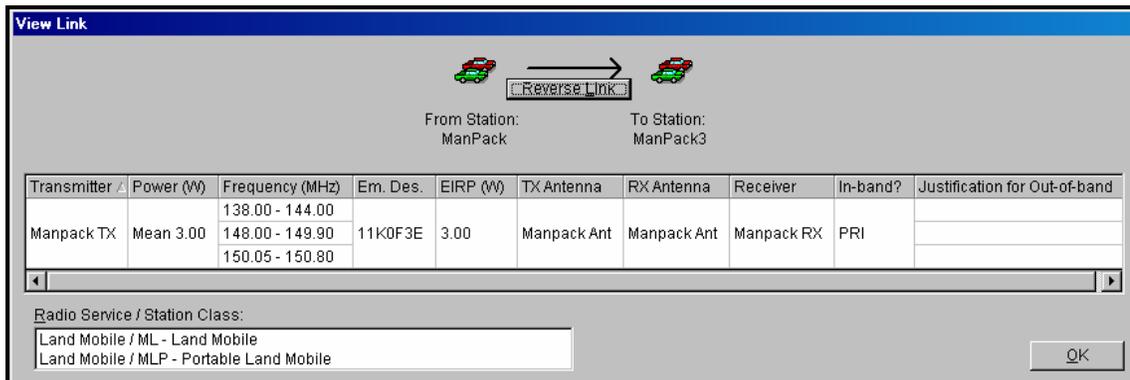
Available Modes:				<input type="checkbox"/> In-band only
Power (W)	Frequency (MHz)	Emission	In-band?	
3.00 Mean	136.00 - 138.00	11K0F3E	No	
3.00 Mean	138.00 - 144.00	11K0F3E	PRI	
3.00 Mean	144.00 - 148.00	11K0F3E	No	
3.00 Mean	148.00 - 149.90	11K0F3E	PRI	
3.00 Mean	149.90 - 150.05	11K0F3E	No	
3.00 Mean	150.05 - 150.80	11K0F3E	PRI	
3.00 Mean	150.80 - 160.00	11K0F3E	No	

Step 28. Click the **right arrow** button to transfer the highlighted mode to the **Selected Modes** list.

Selected Modes:			
Power (W)	Frequency (MHz)	Emission	In-band?
3.00 Mean	150.05 - 150.80	11K0F3E	PRI
3.00 Mean	148.00 - 149.90	11K0F3E	PRI
3.00 Mean	138.00 - 144.00	11K0F3E	PRI

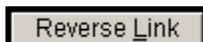
Step 29. Click **Apply** to save your choices, and then **click OK** to acknowledge that the changes have been saved.

Step 30. Click the **View Link** button to see the link information that you have saved.

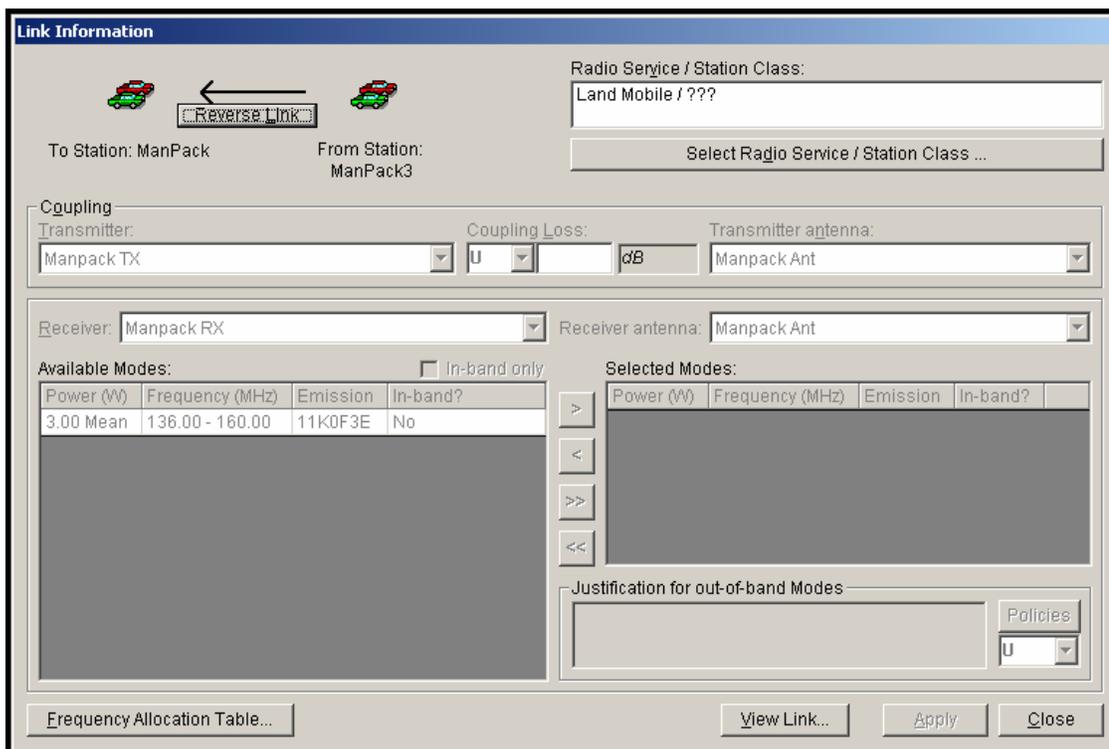


Step 31. Click **OK** to close the window.

Step 32. Click the **Reverse Link** button to edit the reverse link data.



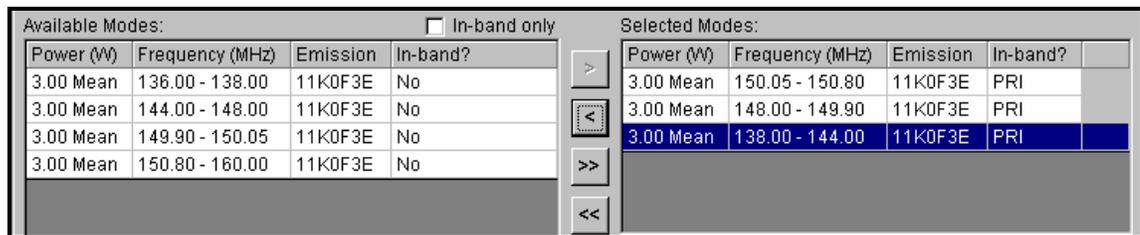
The reverse link information will appear.



Step 33. Click the **Select Radio Service / Station Class** button.

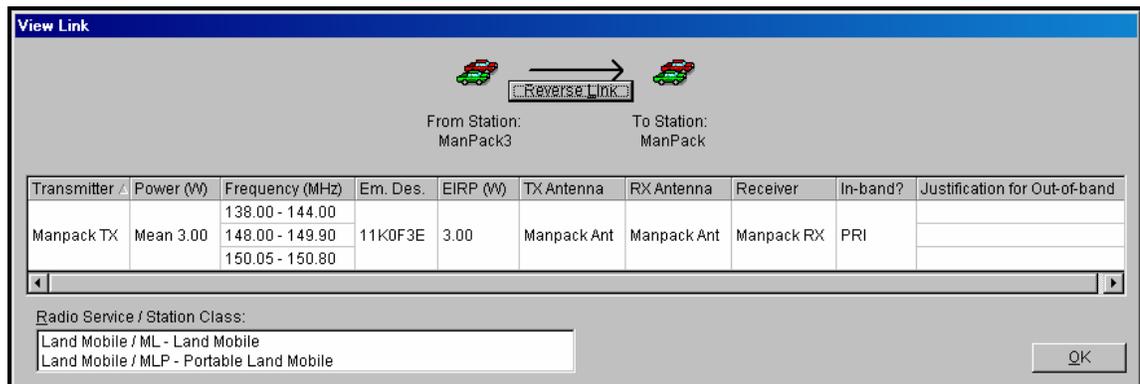
Step 34. On the **Select Radio Service and Station Class** window **select** station classes **ML** and **MLP** and then **click OK**.

**Step 35.** On the **Link Information** window, **select the 3 available modes with the word PRI in the In-band? column. Move them to the Selected Modes list.**



**Step 36.** **Click Apply** to save your choices, and then **click OK** to acknowledge that the data has been saved.

**Step 37.** **Click** the **View Link** button to see the link information that you have saved.



**Step 38.** **Click OK** to close the **View Link** window.

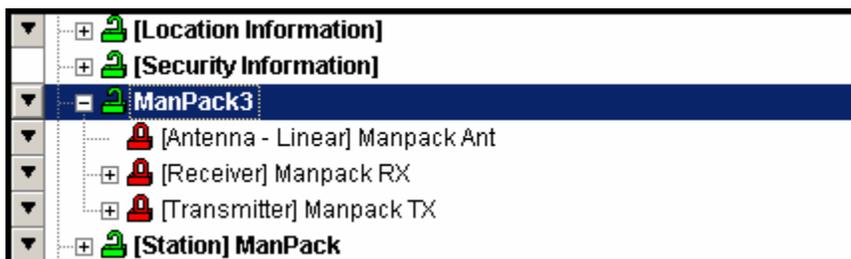
**Step 39.** **Click Close** to close the **Link Information** window.

## 10. CLONING RECORDS

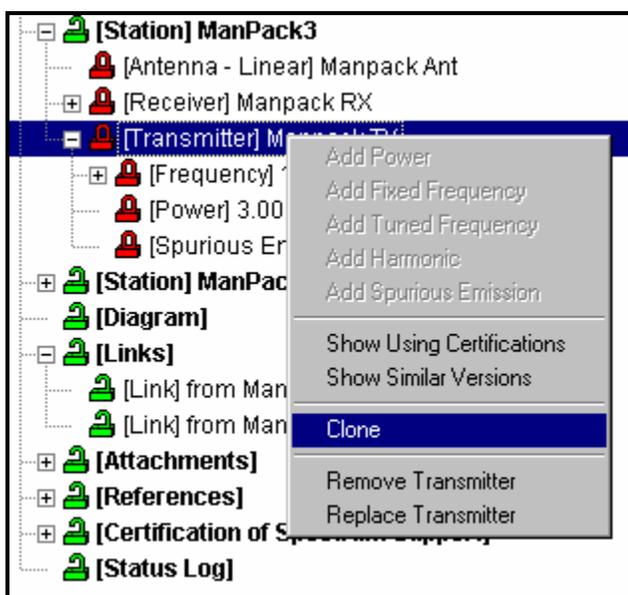
You can clone a Certification, Transmitter, Receiver, Antenna, or Location from the **Tree View**.

**Hint:** You can also clone a Certification, Transmitter, Receiver, Antenna, Location, or Compliance Check record from the **Query Results** window.

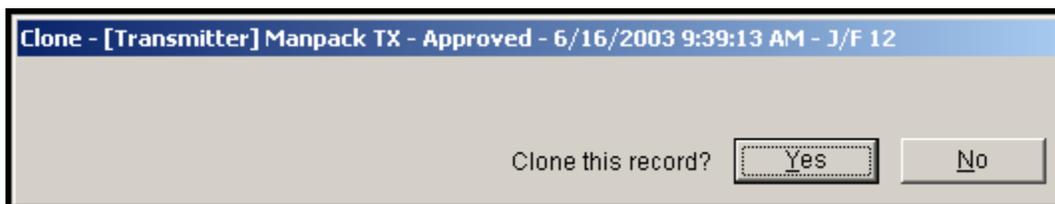
**Step 1.** **Expand** the **[Station] ManPack3** node.



**Step 2.** **Click** on the **[Transmitter] Manpack TX** node to expand it. Next, **right-click** the node, and **click** on **Clone**.



The **Clone** window is displayed.



Step 3. Click **Yes** to clone the record. The cloned transmitter is displayed.

Data Item	Class	Value	Units
<b>Nomenclature</b>	U	Manpack TX	
Manufacturer	U	RELM COMMUNICATIONS, INC	
Model Name and Number	U		
Approval Status	U	Unapproved	
Date/Time Last Modified		12/19/2006 10:01:15 AM	local
Coordination ID	U	J/F 12	
Proxy Record?		No	
FCC Acceptance Number	U		
Frequency Stability (+/-)	U	2.5	
Frequency Stability Units		ppm	
<b>Output Device</b>	U	Si Bipolar Transistor	
Tuning Method	U	Synthesizer	
<b>Suppression of Harmonic</b>	U	No	
Radar or Communications?	U	Communications	
Date/Time Imported		12/19/2006 8:50:42 AM	local

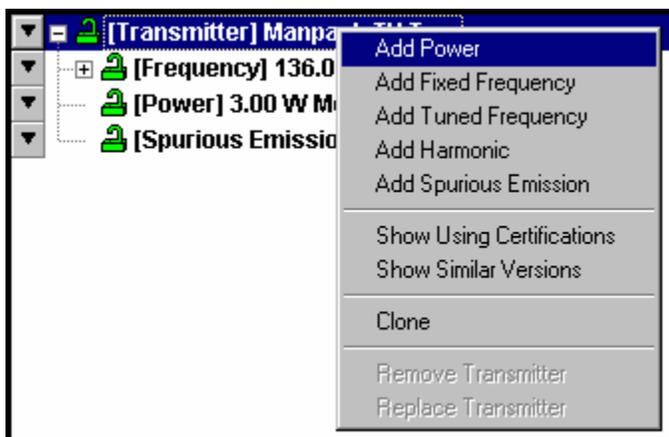
**Hint::** When you clone a record you are adding it to the database and not to the active certification. Notice that the **Red** locks have turned to **Green** locks. When you close this window you will return to the active application.

Step 4. Click on the **Nomenclature** field, and change the name to **Manpack TX Two**.

Data Item	Class	Value	Units
<b>Nomenclature</b>	U	Manpack TX Two	
Manufacturer	U	RELM COMMUNICATIONS, INC	
Model Name and Number	U		
Approval Status	U	Unapproved	
Date/Time Last Modified		12/19/2006 10:01:15 AM	local
Coordination ID	U	J/F 12	
Proxy Record?		No	
FCC Acceptance Number	U		
Frequency Stability (+/-)	U	2.5	
Frequency Stability Units		ppm	
<b>Output Device</b>	U	Si Bipolar Transistor	
Tuning Method	U	Synthesizer	
<b>Suppression of Harmonic</b>	U	No	
Radar or Communications?	U	Communications	
Date/Time Imported		12/19/2006 8:50:42 AM	local

**HINT:** Click on the [Transmitter] Manpack Tx node and note that the name will change to Manpack Tx Two.

Step 5. Now we are going to edit the new transmitter. Save the transmitter. **Right-click** on **[Transmitter] Manpack TX Two** and **select Add Power**.



The **Power** data grid is displayed.

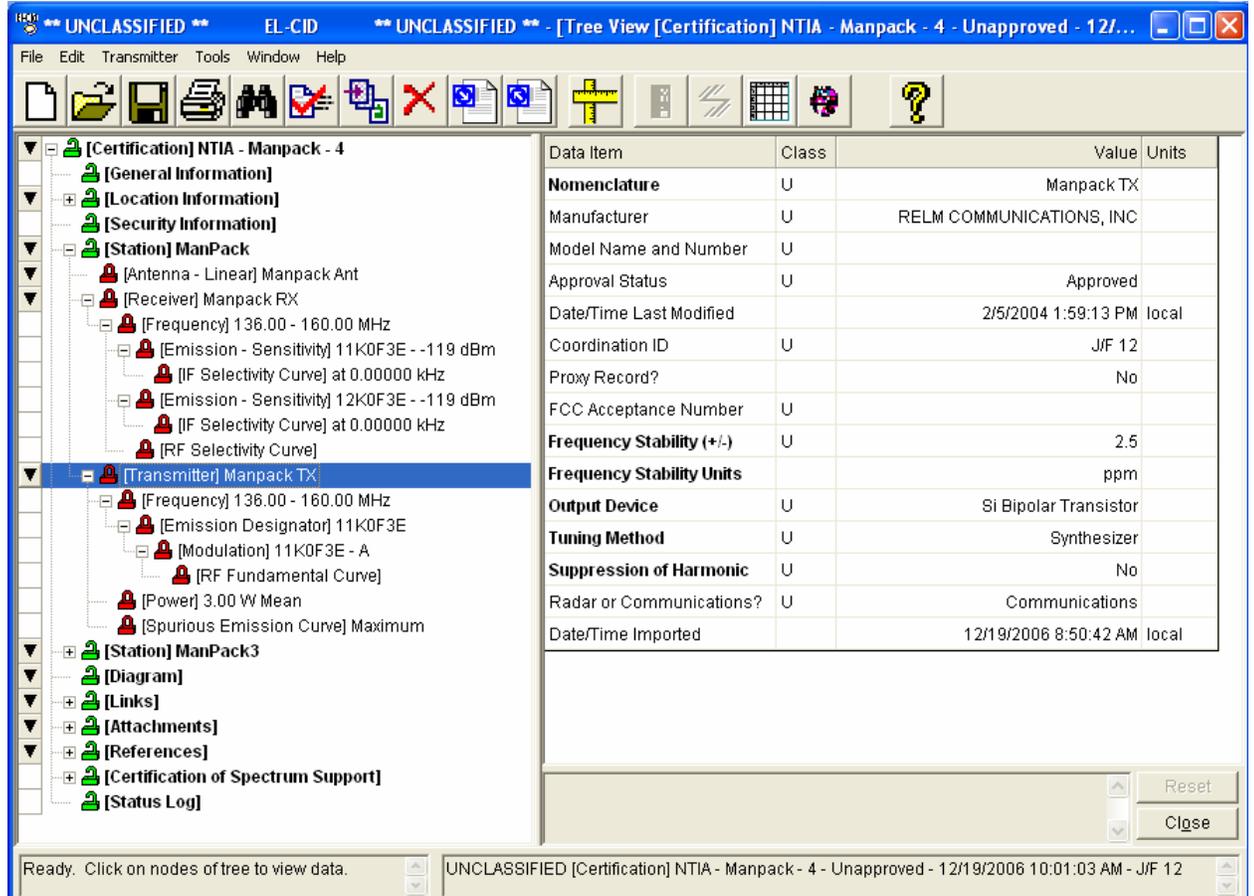
Data Item	Class	Value	Units
<b>Power Type</b>			
<b>Power</b>	U		W

Step 6. **Enter** the following data.

Field	Value
<b>Power Type</b>	<b>Mean</b>
<b>Power</b>	<b>50</b>

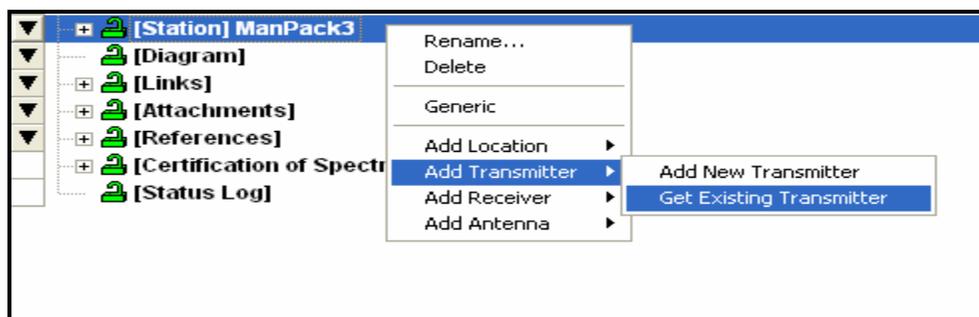
Step 7. **Save** the data.

Step 8. Click the **Close** button. The **Original Certification** window is displayed.

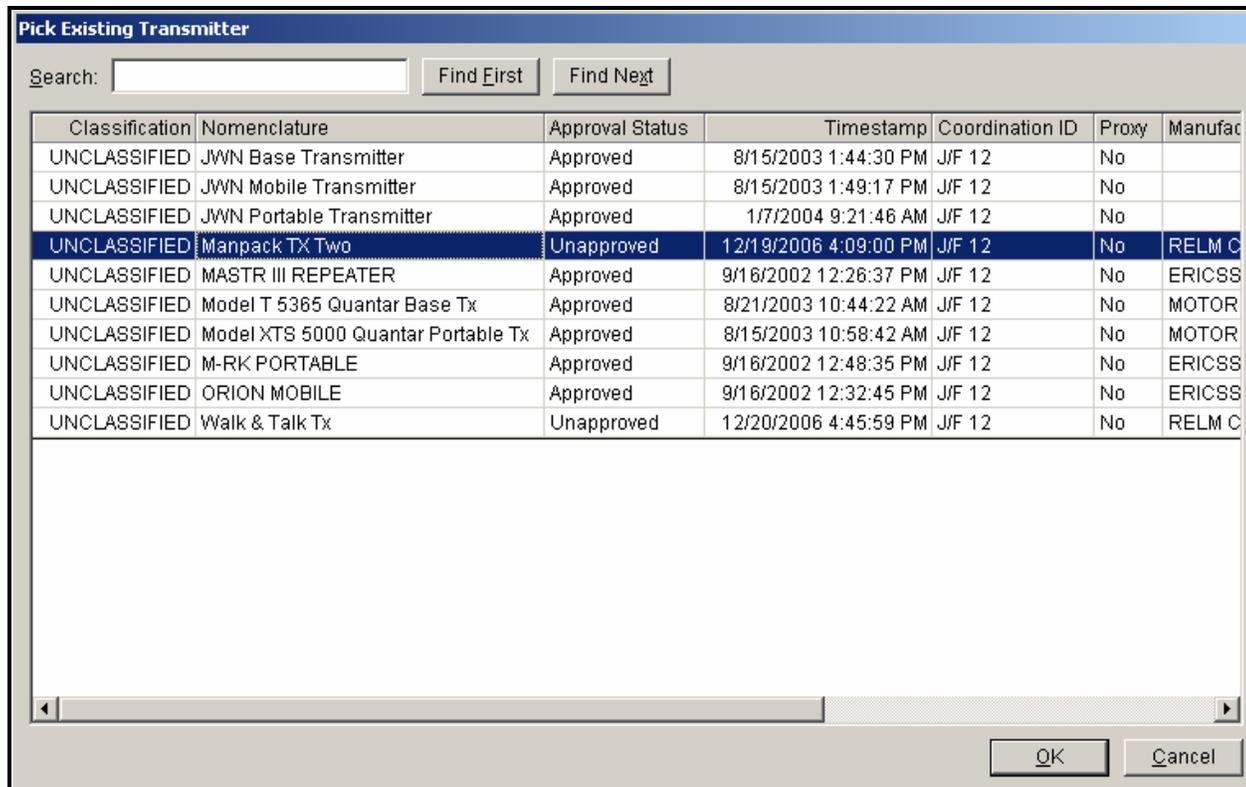


Now that we have a new transmitter record which was cloned (or copied) from an existing transmitter. We are going to add this new transmitter to our ManPack3 station.

Step 9. Right-click on the **[Station] ManPack3 | Add Transmitter | Get Existing Transmitter**.

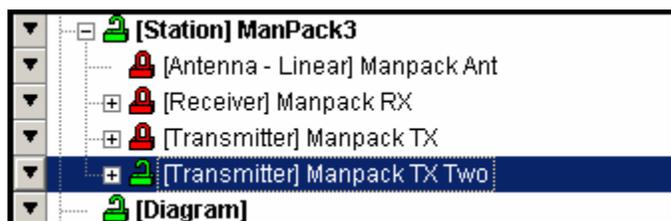


The **Pick Existing Transmitter** window is displayed.



**Step 10.** Highlight **Manpack TX Two** and then **click OK**.

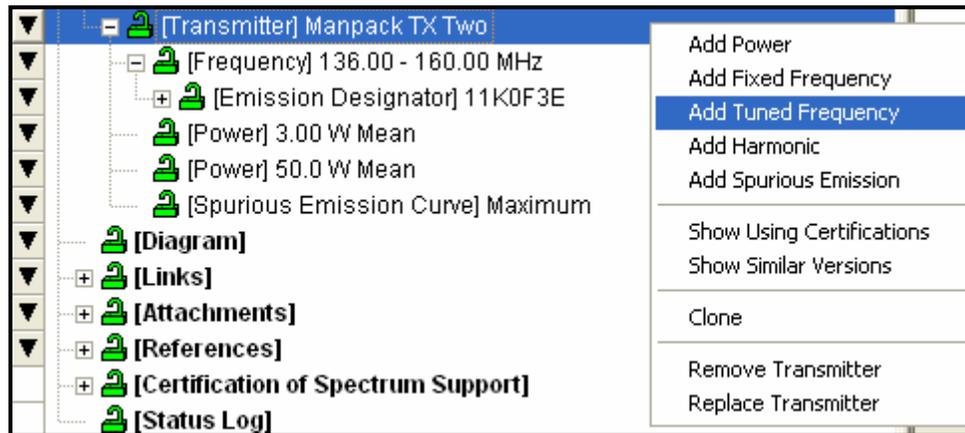
The **Manpack TX Two** transmitter is added to your certification for the **Station ManPack3**.



**Step 11.** **Save** the data.

Next we will use the Cut and Paste capability of EL-CID.

Step 13. Click on **[Station] ManPack3 | [Transmitter] ManPack Tx Two | Add Tuned Frequency**



The Frequency data grid will be displayed.

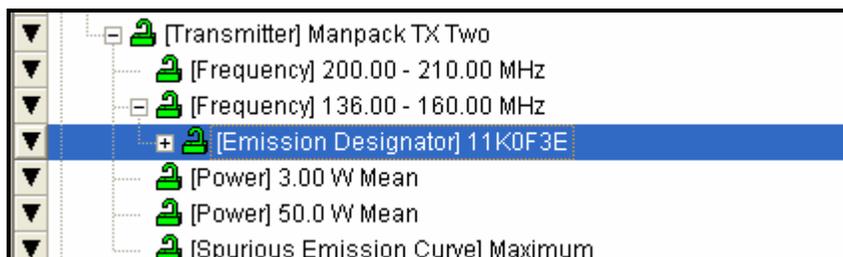
Data Item	Class	Value	Units
+ Fixed Frequency?		No	
<b>Lowest Tuned Frequency</b>	U		MHz
<b>Highest Tuned Frequency</b>	U		MHz
<b>Tuning Increment</b>	U		kHz
<b># of Frequencies Required for Operation</b>	U		
<b>Minimum Required Frequency Separation</b>	U		MHz

Step 14. Enter the following data.

Field	Value
Fixed Frequency?	No
Lowest Tuned Frequency	200 MHz
Highest Tuned Frequency	210 MHz
Tuning Increment	5 kHz
# of Frequencies Required for Operation	3
Minimum Required Frequency Separation	1 kHz

Step 15. Save the data.

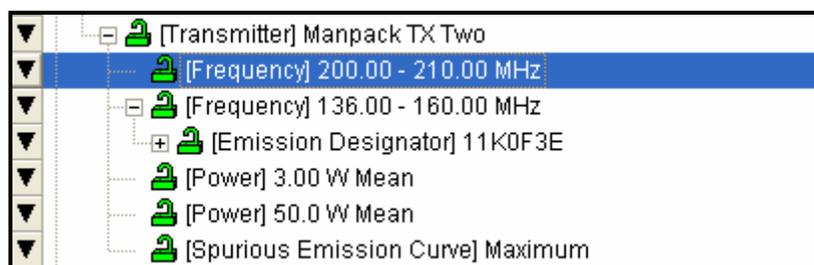
Step 16. Click on [Station] ManPack3 | [Transmitter] ManPack Tx Two | [Frequency] 136 – 160 MHz | [Emission Designator] 11K0F3E



Step 17. Hold down the CTRL key and hit the "C" key

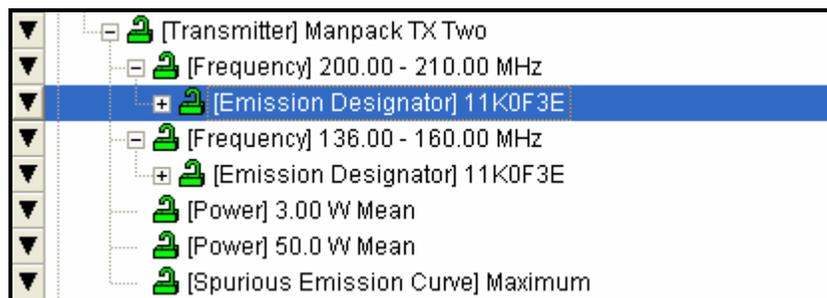
*Hint:* There will be no feedback on the screen.

Step 18. Click on [Station] ManPack3 | [Transmitter] ManPack Tx Two | [Frequency] 200 MHz.



Step 19. Hold down the CTRL key and hit the "V" key.

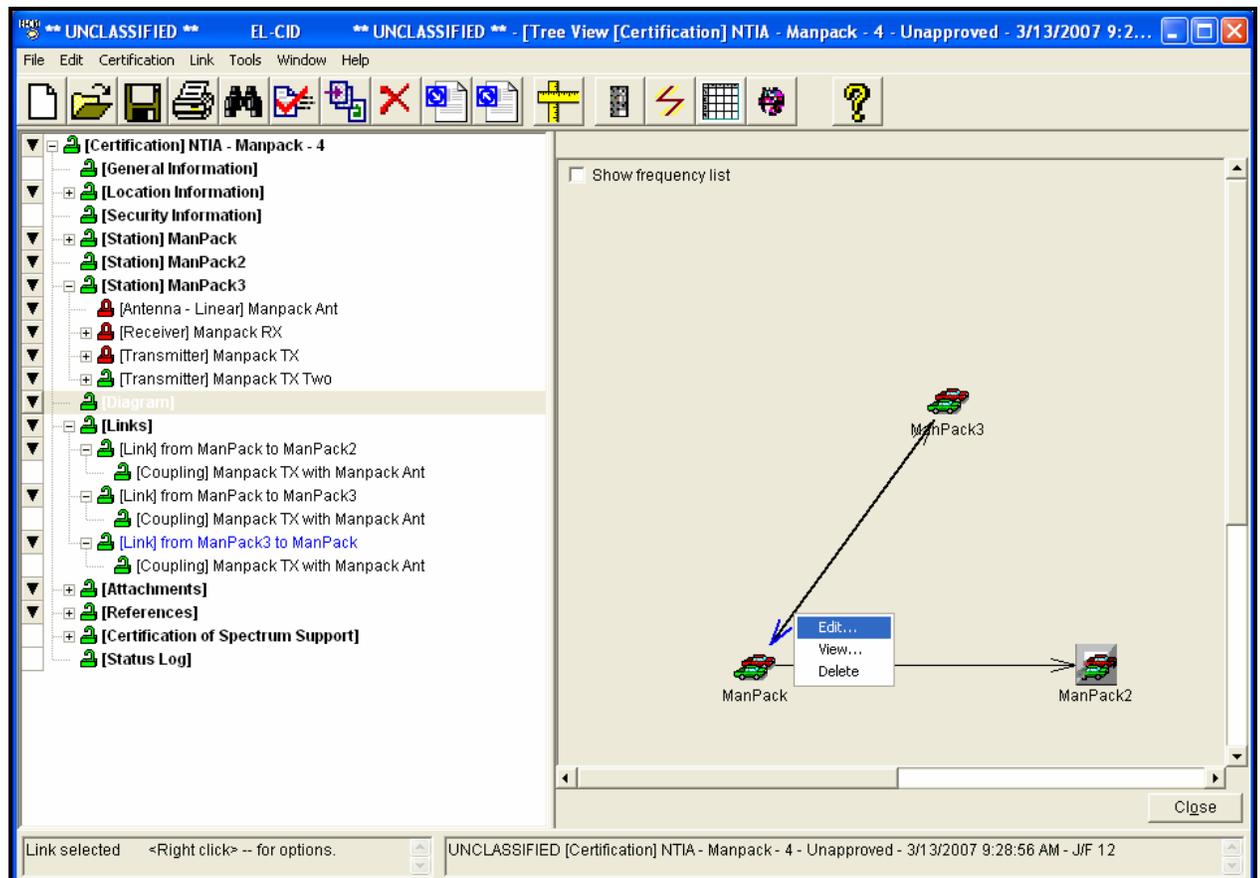
The emission designator 11K0F3E will be copied to the 200 MHz frequency node.



*Hint:* Expand the emission node to see that the modulation was also copied.

This concludes the Cut and Paste introduction.

Step 20. **Click** on the Diagram node. **Highlight** the link from Manpack3 to Manpack. **Right-click** and choose **Edit**



**Step 21.** Click the  button on the transmitter and notice that two transmitters are now shown for this link.

**Link Information**


→

  
 From Station: ManPack3      To Station: ManPack

Radio Service / Station Class:  
 Land Mobile / ML - Land Mobile  
 Land Mobile / MLP - Portable Land Mobile  
 Select Radio Service / Station Class ...

Transmitter: Manpack TX Two      Transmitter antenna: Manpack Ant  
 Coupling Loss: 0 dB

Receiver: Manpack RX      Receiver antenna: Manpack Ant

Available Modes:  In-band only      Selected Modes:

Power (W)	Frequency (MHz)	Emission	In-band?
50.0 Mean	150.05 - 150.80	11K0F3E	PRI
50.0 Mean	148.00 - 149.90	11K0F3E	PRI
50.0 Mean	138.00 - 144.00	11K0F3E	PRI
3.00 Mean	150.05 - 150.80	11K0F3E	PRI
3.00 Mean	148.00 - 149.90	11K0F3E	PRI
3.00 Mean	138.00 - 144.00	11K0F3E	PRI

Justification for out-of-band Modes  
 Policies: 0

Frequency Allocation Table...      View Link...      Apply      Close

**Choose** the ManPack Tx Two transmitter. Complete this link, **select the 6 available modes with the word PRI in the In-band? column. Move them to the Selected Modes list**

**Hint:** The link for each Transmitter, Receiver, and Antenna combination must be defined.

**Step 22.** Click **Apply** to save your choices, and then **click OK** to acknowledge that the data has been saved.

Step 23. Click the **View Link** button to see the link information (*two transmitters*) that you have saved.

The screenshot shows the 'View Link' window with the following details:

From Station: ManPack3  
To Station: ManPack

Transmitter /	Power (W)	Frequency (MHz)	Em. Des.	EIRP (W)	TX Antenna	RX Antenna	Receiver	In-band?	Justification for Out-of-band
Manpack TX	Mean 3.00	138.00 - 144.00	11K0F3E	3.00	Manpack Ant	Manpack Ant	Manpack RX	PRI	
		148.00 - 149.90							
		150.05 - 150.80							
Manpack TX Two	Mean 50.0	138.00 - 144.00	11K0F3E	50.0	Manpack Ant	Manpack Ant	Manpack RX	PRI	
		148.00 - 149.90							
		150.05 - 150.80							

Radio Service / Station Class:  
Land Mobile / ML - Land Mobile

Step 24. Click **OK** to close the **View Link** window.

Step 25. Click **Close** to close the **Link Information** window.

Step 26. Click **Close** to close the current certification application.

## 11. OPENING AND VIEWING AN APPROVED CERTIFICATION RECORD

Approved records can be opened but they cannot be changed.

Step 1. Click the **Open** button.



The **Pick Existing Certification** window is displayed.

Step 2. Highlight **Ericsson EDACS NB LMR System**, and then **click OK**.

**Pick Existing Certification**

Search:  Find First Find Next

Classification	Agency	System Name	Stage	Approval Status	Timestamp	C
UNCLASSIFIED	AF	Ericsson EDACS NB LMR System	4 - Operational	Approved	6/30/2004 1:57:30 PM	J/
UNCLASSIFIED	AF	Walk & Talk	4 - Operational	Unapproved	12/21/2006 11:49:49 AM	J/
UNCLASSIFIED	J	Justice Wireless Network	4 - Operational	Approved	9/20/2004 2:10:10 PM	J/
UNCLASSIFIED	N	Navy Motorola Quantar Trunked Sys.	4 - Operational	Approved	6/30/2004 2:01:00 PM	J/
UNCLASSIFIED	NTIA	Ericsson EDACS NB Trunk Template	4 - Operational	Approved	6/30/2004 1:28:57 PM	J/
UNCLASSIFIED	NTIA	Manpack	4 - Operational	Unapproved	12/21/2006 1:05:33 PM	J/
UNCLASSIFIED	NTIA	Motorola Quantar Trunk Template	4 - Operational	Approved	6/30/2004 1:35:04 PM	J/
UNCLASSIFIED	NTIA	Wireless Network Trunk Template	4 - Operational	Approved	9/20/2004 2:10:09 PM	J/

OK Cancel

The approved certification is displayed.

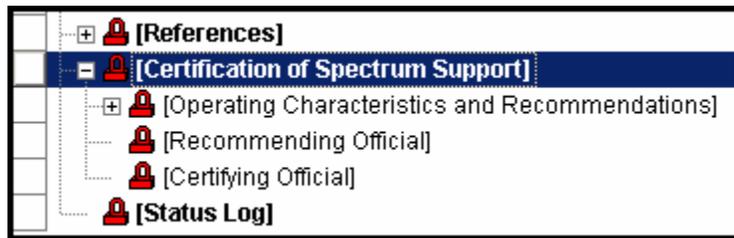
UNCLASSIFIED \*\* EL-CID \*\* UNCLASSIFIED \*\* - [Tree View [Certification] AF - Ericsson EDACS NB LMR System - 4 - ...]

File Edit Certification Tools Window Help

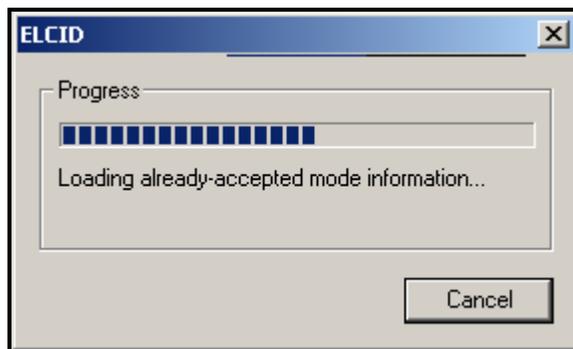
[Certification] AF - Ericsson EDACS NB LMR Syste

- [General Information]
- [Location Information]
- [Security Information]
- [Station] Base MASTR III
- [Station] Mobile Orion
- [Station] Portable M-RK
- [Station] Repeater MASTR III
- [Trunking Information]
- [Diagram]
- [Links]
- [Attachments]
- [References]
- [Certification of Spectrum Support]
- [Status Log]

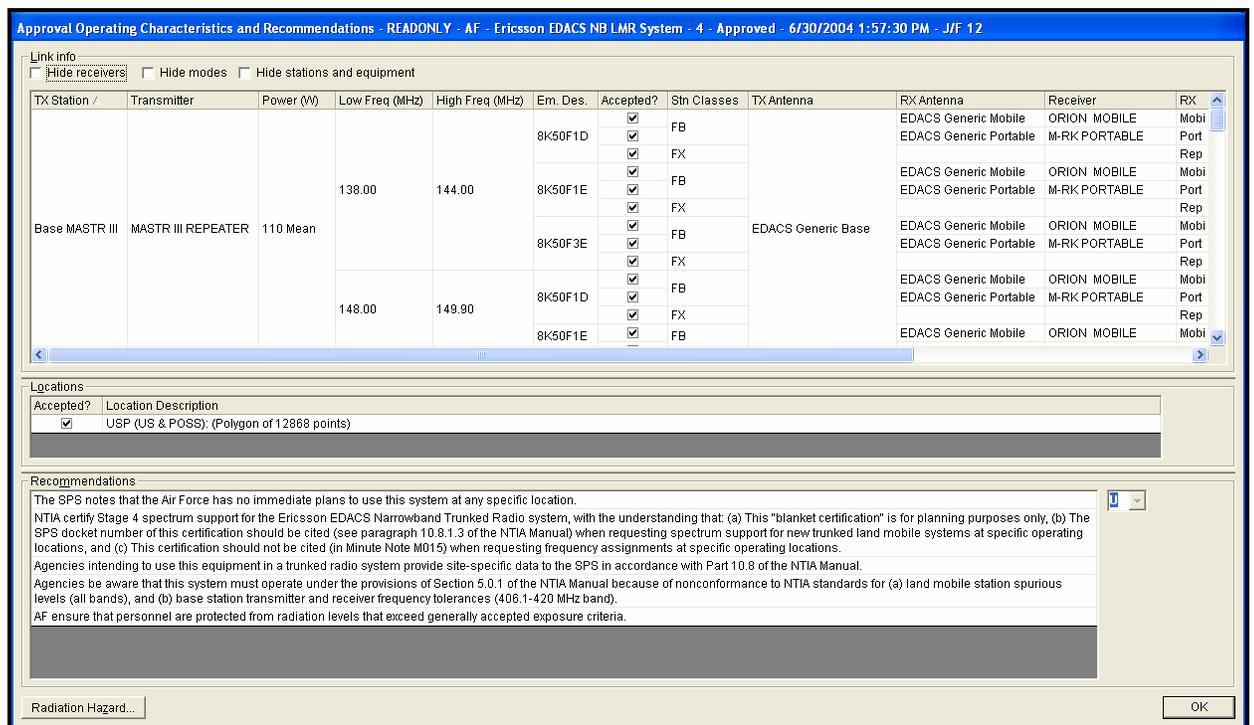
Step 3. Highlight the **[Certification of Spectrum Support]** node. Expand this node by clicking the **+** button on the node.



Step 4. Click on the **[Operating Characteristics and Recommendations]** node. The Progress window is displayed.



The Approval Operating Characteristics and Recommendations window is displayed.



Step 5. Click **OK** to close the screen.

Step 6. Expand the **Attachments** node using the  button, and then click on **Attachment EDACS\_Original\_Paper\_Cert.pdf**. The Attachment data grid is displayed.

Data Item	Class	Value	Units
Attachment	U	EDACS_Original_Paper_Cert.pdf	
SPS Application Number		10942/2	
Date of Attachment			date

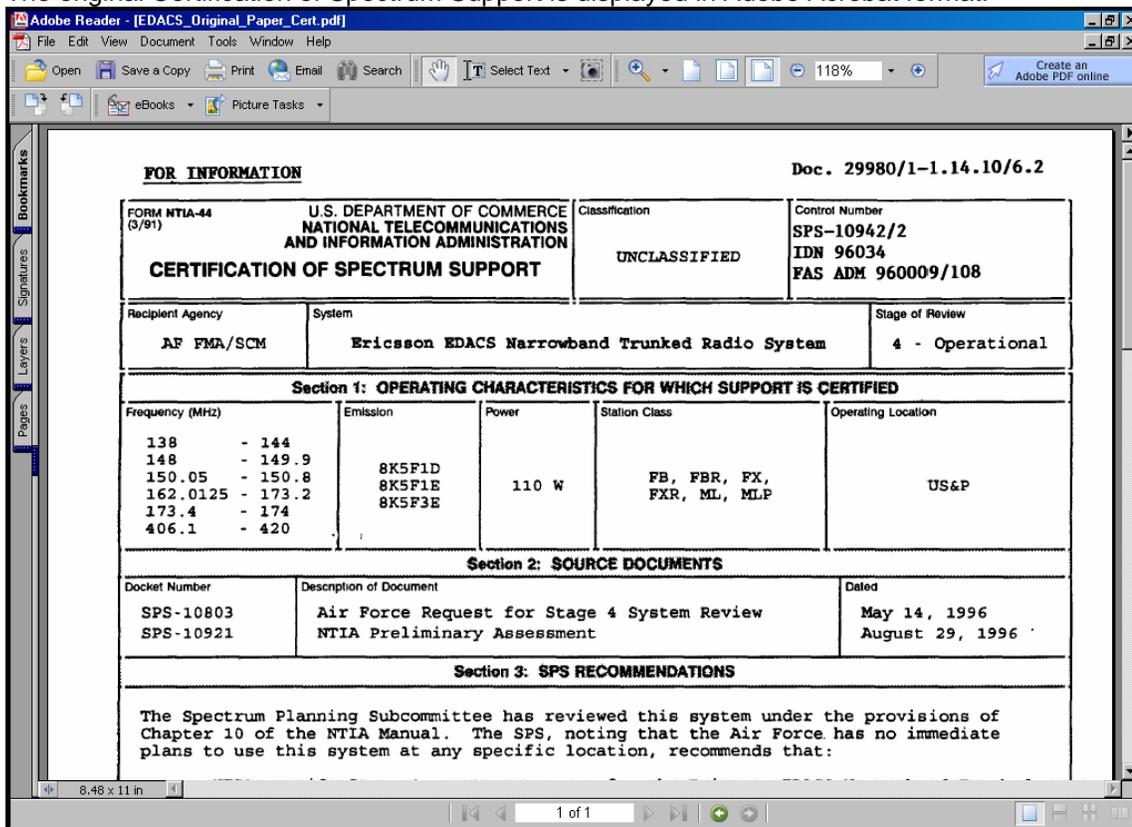
Step 7. Click in the **Attachment Value** cell.

Data Item	Class	Value	Units
Attachment	U	 EDACS_Original_Paper_Cert.j ...	
SPS Application Number		10942/2	
Date of Attachment			date

Step 8. Click the **Format** button for the PDF format.



The original Certification of Spectrum Support is displayed in Adobe Acrobat format.



**FOR INFORMATION** Doc. 29980/1-1.14.10/6.2

FORM NTIA-44 (3/91)	U.S. DEPARTMENT OF COMMERCE NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION	Classification <b>UNCLASSIFIED</b>	Control Number <b>SPS-10942/2 IDN 96034 FAS ADM 960009/108</b>
Recipient Agency <b>AF FMA/SCM</b>	System <b>Ericsson EDACS Narrowband Trunked Radio System</b>	Stage of Review <b>4 - Operational</b>	

**Section 1: OPERATING CHARACTERISTICS FOR WHICH SUPPORT IS CERTIFIED**

Frequency (MHz)	Emission	Power	Station Class	Operating Location
138 - 144	8K5F1D 8K5F1E 8K5F3E	110 W	FB, FBR, FX, FXR, ML, MLP	US&P
148 - 149.9				
150.05 - 150.8				
162.0125 - 173.2				
173.4 - 174				
406.1 - 420				

**Section 2: SOURCE DOCUMENTS**

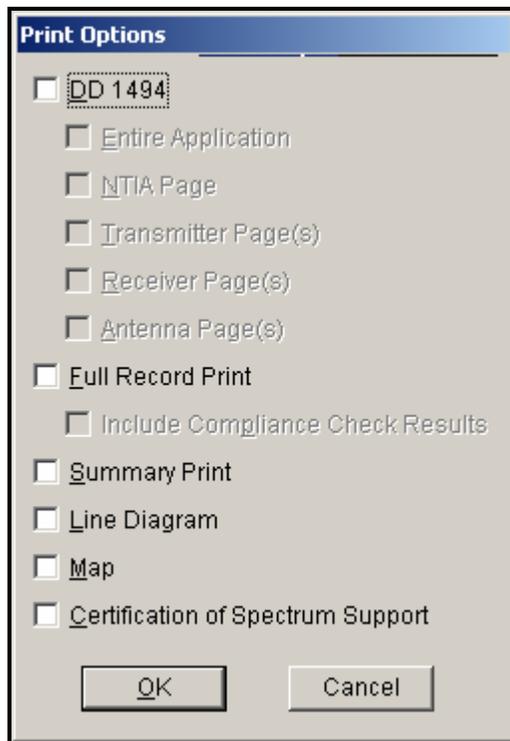
Docket Number	Description of Document	Dated
SPS-10803	Air Force Request for Stage 4 System Review	May 14, 1996
SPS-10921	NTIA Preliminary Assessment	August 29, 1996

**Section 3: SPS RECOMMENDATIONS**

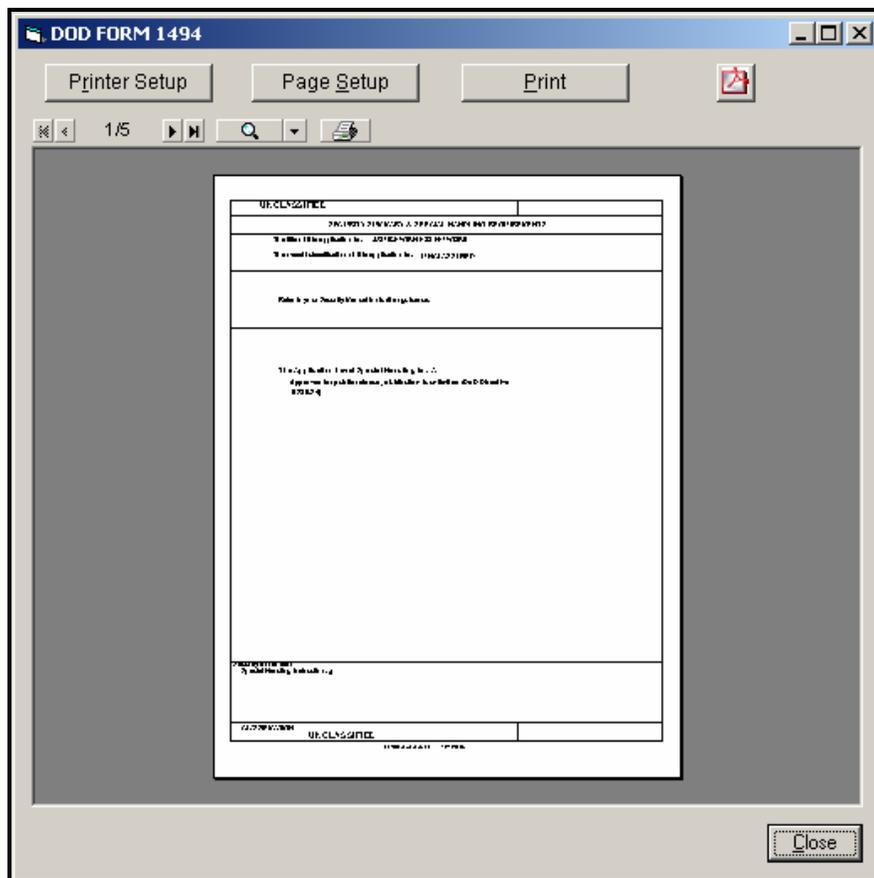
The Spectrum Planning Subcommittee has reviewed this system under the provisions of Chapter 10 of the NTIA Manual. The SPS, noting that the Air Force has no immediate plans to use this system at any specific location, recommends that:

Step 9. Close the Adobe window by clicking the **X** in the top right-corner of the screen.

Step 10. Click the **Print** button. The **Print Options** window is displayed.



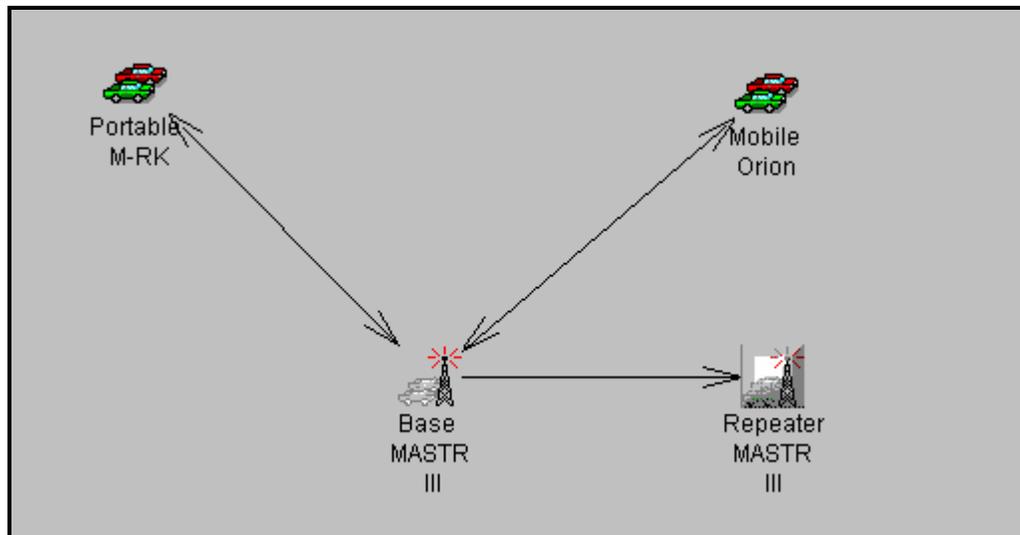
Step 11. Check **Certification of Spectrum Support** and then click **OK**. The print preview window is displayed showing the cover page.



**Step 12.** Click  to go to the next few pages. You can also use the **zoom** button to make the size such that you can read the data.

**Step 13.** To close the print preview, click **Close**.

**Step 14.** To see the links and stations on the graphical display, click on the **[Diagram]** node.



**Step 15.** Click **Close** to close this certification.

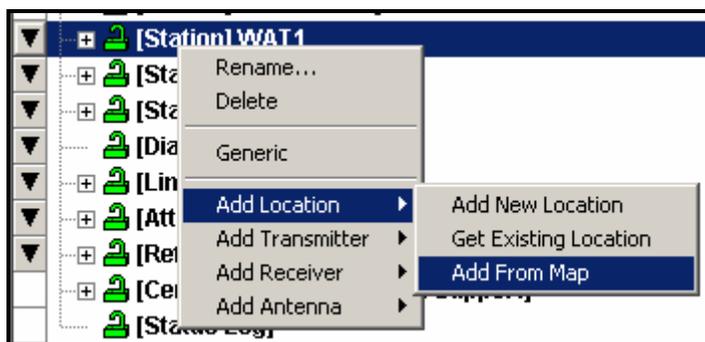


## 12. ADDING LOCATIONS FROM THE MAP

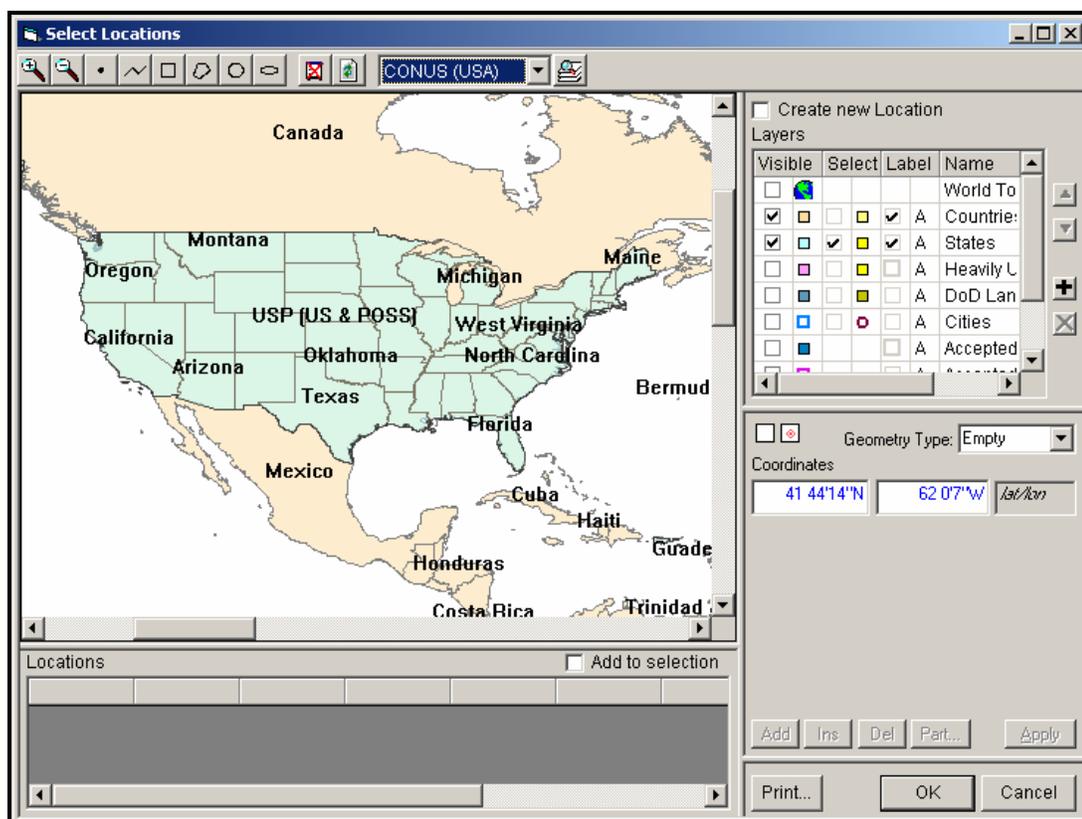
If you want to add a location to your certification record but do not know the detailed information, you may be able to find the location by using the Map to find the desired location. If it is a city already in the database, follow the steps below to select the city and add its location data to your certification.

**Step 1.** **Open** the Walk & Talk certification.

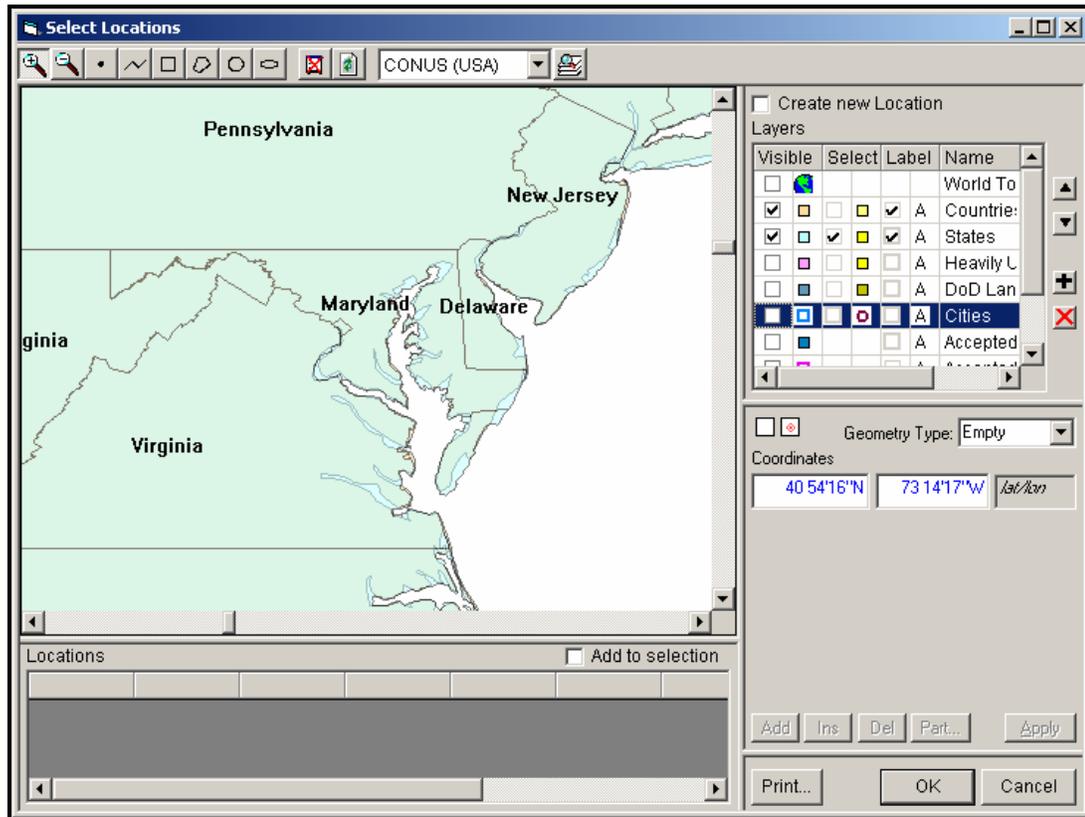
**Step 2.** **Right-click** [Station] WAT1 and then **click Add Location | Add From Map**.



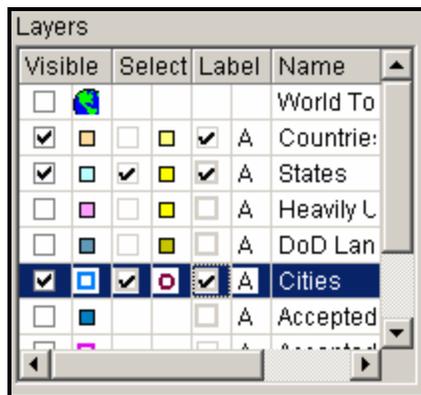
The **Select Locations** window is displayed.



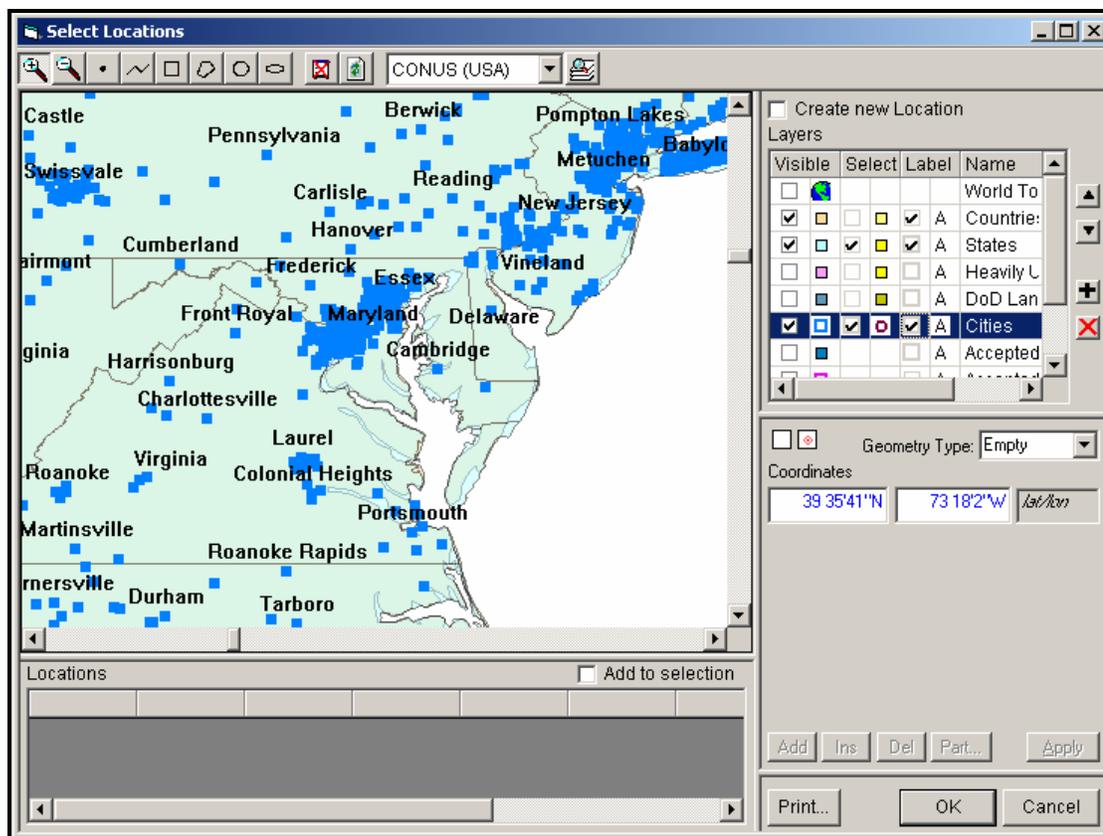
Step 2. Click on the **Magnify** button  and then click in the **Maryland region** several times. You will zoom in on the Maryland area.



Step 3. Highlight the **Cities** Name in the **Layers** window. Click the check boxes for **Visible**, **Select**, and **Label**.

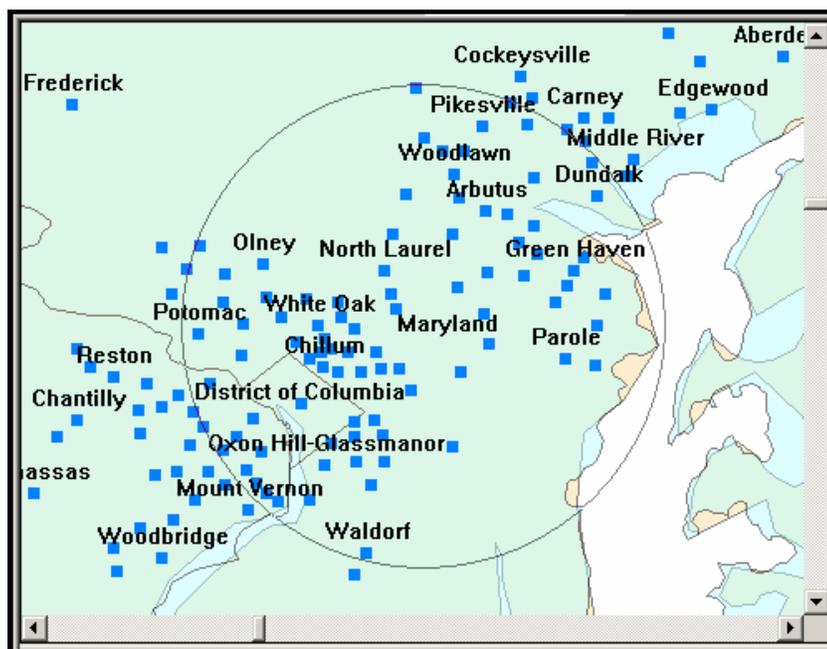


The **Select Locations** window will be displayed as shown below.

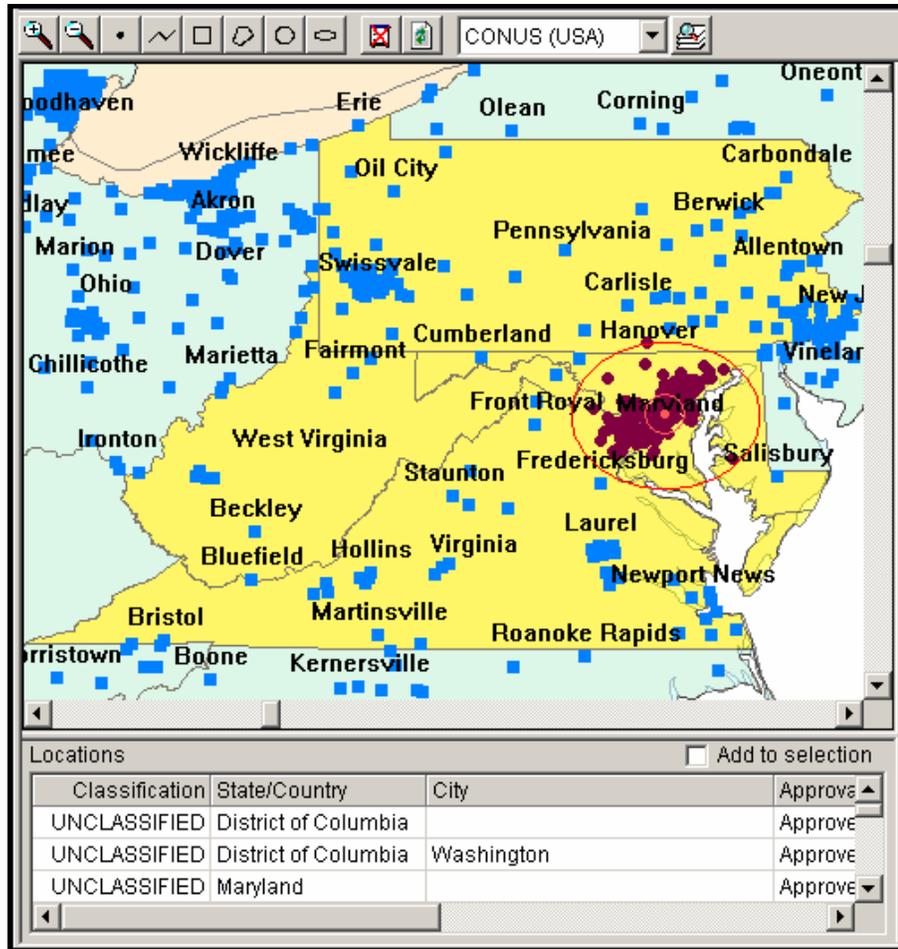


Step 4. **Zoom in** on the word **Maryland** several times.

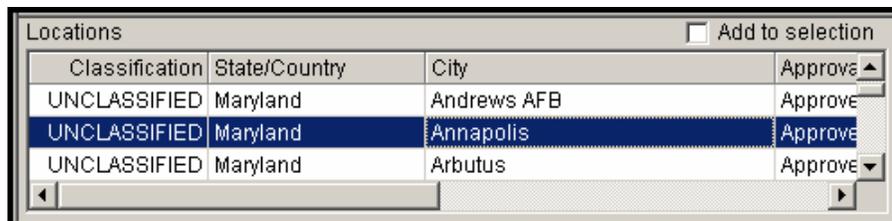
Step 5. Click the **Circle**  button. Place the cursor over the "a" in Maryland and drag the mouse while holding down the left mouse button to create a small circle. Release the mouse button. Make sure the circle is big enough to encircle Annapolis, MD.



The **Select Locations** window displays the selections



**Step 6.** Highlight **Maryland | Annapolis** in the location box and then **click OK**.



The Annapolis, MD location information is added to your repeater record.

Data Item	Class	Value	Units
<b>Approval Status</b>	U	Approved	
<b>State, Country, or Location Name Part 1</b>	U	Maryland	
City or Location Name Part 2	U	Annapolis	
<b>Date/Time Last Modified</b>		5/23/2003 10:08:12 AM	local
<b>+ Location Type</b>	U	Single Point	
Geographic Coordinates	U	385818N0763010W	lat/lon
Map Layer		Cities	
Date/Time Imported		5/23/2003 11:27:47 AM	local

**Step 7.** Click the **Close** button.

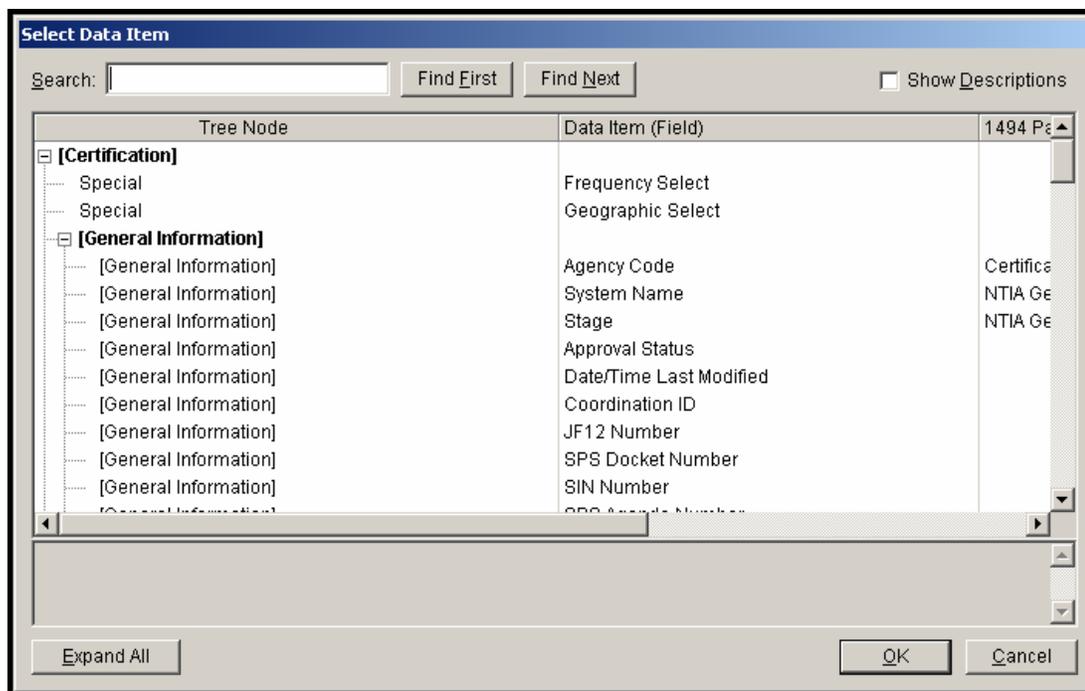
## 13. PERFORMING QUERIES

You can select records (Certifications, Equipments, Locations, Policies, Transmitters, Compliance Checks, and etc.) from the database using any of the database fields.

**Step 1.** Click the **query** button on the tool bar.

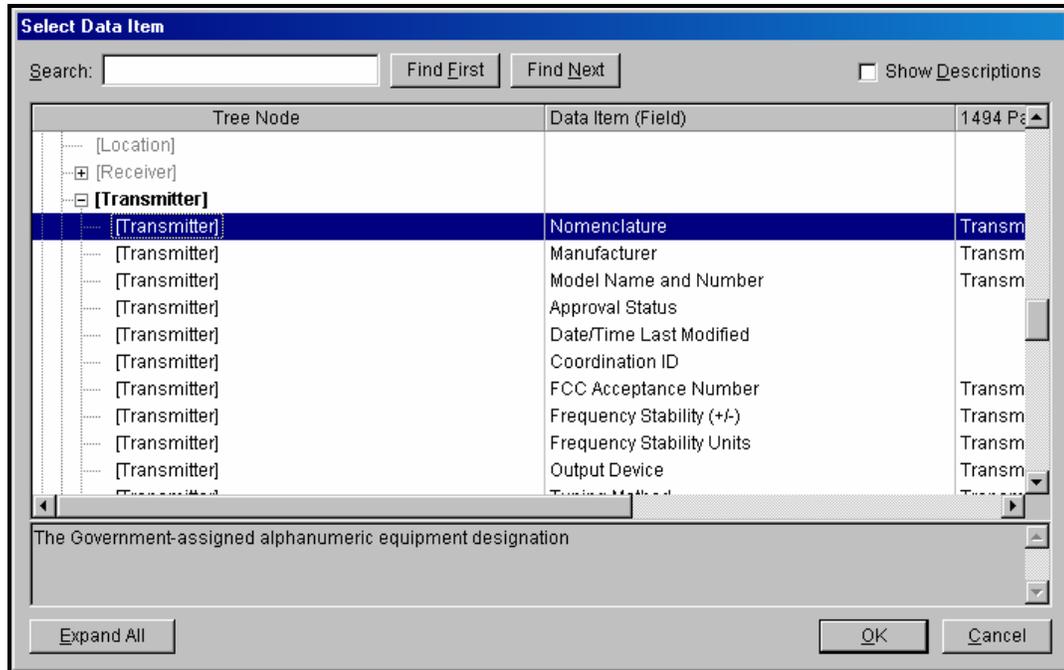


The **Query** window opens with the **Select Data Item** window



**HINT:** If the **Select Data Item** window does not automatically appear. Click the  button at the end of the Field Row.

Step 2. Highlight Transmitter Nomenclature and click OK.



Step 2. Select \$\$Contains using the dropdown list button  for the Operator field

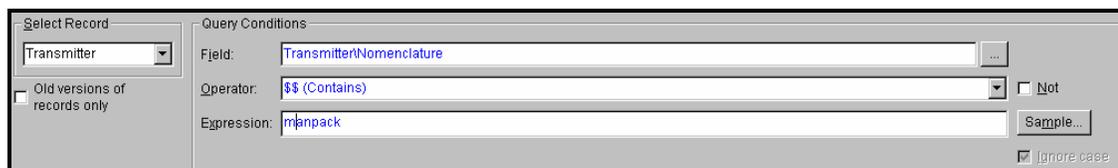
Step 3. Type manpack in the Expression field.

**Hint:** You can use the  button to get a listing of the entries in this field from the database.

Step 4. Select Transmitter using the dropdown list button  for the Select Record.



The select screen should resemble the following:



Step 5. Click the  to execute the query.

**HINT:** You can also click the  tab to run the query

Two records were found.

Classification	Nomenclature	Approval Status	Timestamp	Coordination ID	Proxy	Manufacturer	Model
UNCLASSIFIED	Manpack TX	Approved	2/5/2004 1:59:13 PM	J/F 12	No	RELM COMMUNICATIONS, INC	
UNCLASSIFIED	Manpack TX Two	Unapproved	12/19/2006 4:09:00 PM	J/F 12	No	RELM COMMUNICATIONS, INC	

Step 6. **Highlight** the two rows and **right-click**

The screenshot shows the same table as above, but with the two rows highlighted in blue. A context menu is open over the second row, listing options such as 'Edit in Tree View...', 'Display/Edit...', 'Export...', 'Print...', 'Clone...', 'Delete...', 'Replace...', 'Show Using Certifications', 'Show Similar Versions', 'Compare...', and 'Compliance Check...'.

Step 7. **Click** on **Compare**.

Step 8. The **Comparison Details** window will be displayed showing the differences in the two records.

Comparison Details - Transmitter		
Search:	<input type="text"/>	Find First Find Next
Entity/Data Item	Source: Manpack TX - Approved - 2/5/2004 1:59:13 PM - J/F 12	Target: Manpack TX Two - Unapproved - 12/19/2006 4:09:00 PM - J/F 12
<input checked="" type="checkbox"/> [Transmitter]	[Transmitter] Manpack TX	[Transmitter] Manpack TX Two
<input type="checkbox"/> Nomenclature	Manpack TX	Manpack TX Two
<input type="checkbox"/> Approval Status	Approved	Unapproved
<input type="checkbox"/> Date/Time Last Modified	2/5/2004 6:59:13 PM	12/19/2006 9:09:00 PM
<input checked="" type="checkbox"/> [Frequency]	[Frequency] 136.00 - 160.00 MHz	[Frequency] 136.00 - 160.00 MHz
<input checked="" type="checkbox"/> [Emission Designator]		[Emission Designator] 20K0A1A
<input checked="" type="checkbox"/> [Power]		[Power] 50.0 W Mean
<input type="checkbox"/> Power Type		M
<input type="checkbox"/> Power		50
Expand All Print.. OK		



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## Student Information Sheet

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Date: \_\_\_\_\_ Training Location: \_\_\_\_\_

Name: \_\_\_\_\_ Grade/Rank: \_\_\_\_\_  
(Last) (First) (MI)

Organization: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip: \_\_\_\_\_

E-mail NIPRNET: \_\_\_\_\_

E-mail SIPRNET: \_\_\_\_\_

Telephone: \_\_\_\_\_

Voice: CML: \_\_\_\_\_ DSN: \_\_\_\_\_

Fax: CML: \_\_\_\_\_ DSN: \_\_\_\_\_

Secure: CML: \_\_\_\_\_ DSN: \_\_\_\_\_

Access to: SIPRNET  STU-III/STE

Area Hotel: \_\_\_\_\_

Room Number: \_\_\_\_\_



## STUDENT CRITIQUE SHEET

Dates of Training: From: \_\_\_\_\_ To: \_\_\_\_\_

Training Location: \_\_\_\_\_

Name & Grade: \_\_\_\_\_

Job Title: \_\_\_\_\_

Unit/Organization: \_\_\_\_\_

### Course Material

- Information Received:  Great Help       Some Help       No Help
- Technical Value:       About Right       Too Hard       Too Easy
- Course Is:       Too Long       Too Short       Long Enough
- Course Material:       Outstanding       Adequate       Not Adequate

### Course Presentation

- Lessons:       Well Presented       Adequate       Poor
- Instructor's Presentation:       Easy to Follow       Difficult to Follow
- Instructor's Presentation:       Easy to Understand       Difficult to Understand
- Instructors:       Time to Ask Questions       No Time to Ask Questions
- Practice:       Too Much       About Right       Not Enough

### Value of Training Aids

- Training Aids:       Very Good       Good       Fair       Poor

### Opinion

- Opinion Overall:       Very Good       Good       Fair       Poor

Remarks/Recommendations: \_\_\_\_\_

\_\_\_\_\_

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\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



## APPENDIX A - QUICK REFERENCE GUIDE















## APPENDIX B – INSTALLING EL-CID AND NTIA DATA

**Please Note:** Users must have read and write privileges to the EICidData directory and ALL its subdirectories

- Step 1.** **Insert** the CD labeled “Equipment Location – Certification Information Database” into your CD drive. The “Welcome” window will appear. (If the “Welcome” window does not appear, use Windows Explorer to find your CD drive. Then **double click** the file Setup.exe.)
- Step 2.** **Click** the **Next >** button . The “Software License Agreement” window will appear.
- Step 3.** **Click** the **Next >** button. The “Choose Program Folder” window will appear. The Destination Folder should default to C:\Program Files\EL-CID. If it does not, use the Browse button  to select this directory.
- Step 4.** **Click** the **Next >** button. The “Select Program Folder” window will appear. The Destination Folder should default to **ELCID**.
- Step 5.** **Click** the **Next >** button. The “Choose Data Folder” window will appear. The Destination Folder should default to C:\ElcidData. Erase the drive letter C: and replace it with D: as we will be installing to D:\ElcidData. (Do NOT select the D: drive from the drive letter combo box!)
- Step 6.** **Click** the **Next >** button. The “Start Copying Files: window will appear. Confirm that the correct Destination Folders are selected.
- Step 7.** **Click** the **Next >** button. Progress bars will be displayed during the install. When the install is complete you will be prompted to make sure the system date, time and time zone are correct.
- Step 8.** **Click Ok**. The “Setup Complete” window will appear.
- Step 9.** Make sure the “Yes, I want to launch ELCID now” checkbox is NOT checked. Then **click** the **Finish** button. You have completed installing the ELCID program. Next we will install data from NTIA.
- Step 10.** **Remove** the ELCID installation CD from your drive and **insert** the CD labeled ELCID NTIA DATA. (If the CD does not auto-launch, use Windows Explorer to find your CD drive, then **click** on the file Setup.exe.) The “Information” window will appear.
- Step 11.** **Click** the **Next >** button. The “Start Copying Files” window appears with the data directory displayed.
- Step 12.** **Click** the **Next >** button. ELCID will launch, import the records and close. The “Setup Complete” window will appear.
- Step 13.** **Click** the **Finish** button.
- Step 14.** **Proceed to Appendix C** to import updated compliance checks.



## APPENDIX C - IMPORTING UPDATED COMPLIANCE CHECKS

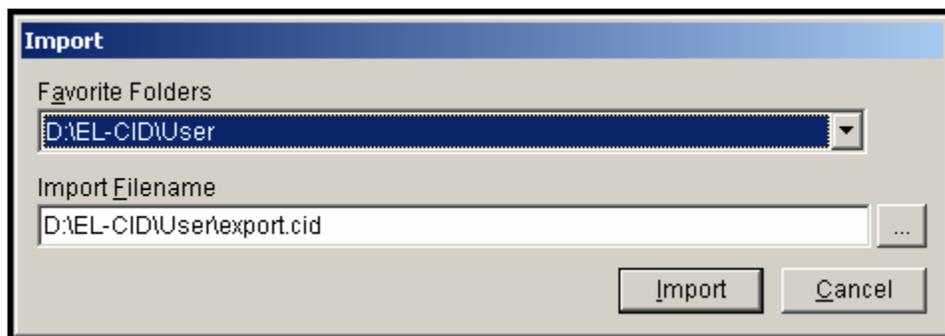
(Before importing the updated Compliance Checks, log out as Administrative user. Then login as a regular user. Go to page 9 and follow steps 1 through 5 to start the EL-CID program. Then proceed as below.)

The following steps will illustrate how to perform the import of the updated Compliance Checks in the purge and replace mode. The updates are in two parts Compliance Checks, and Snippets.

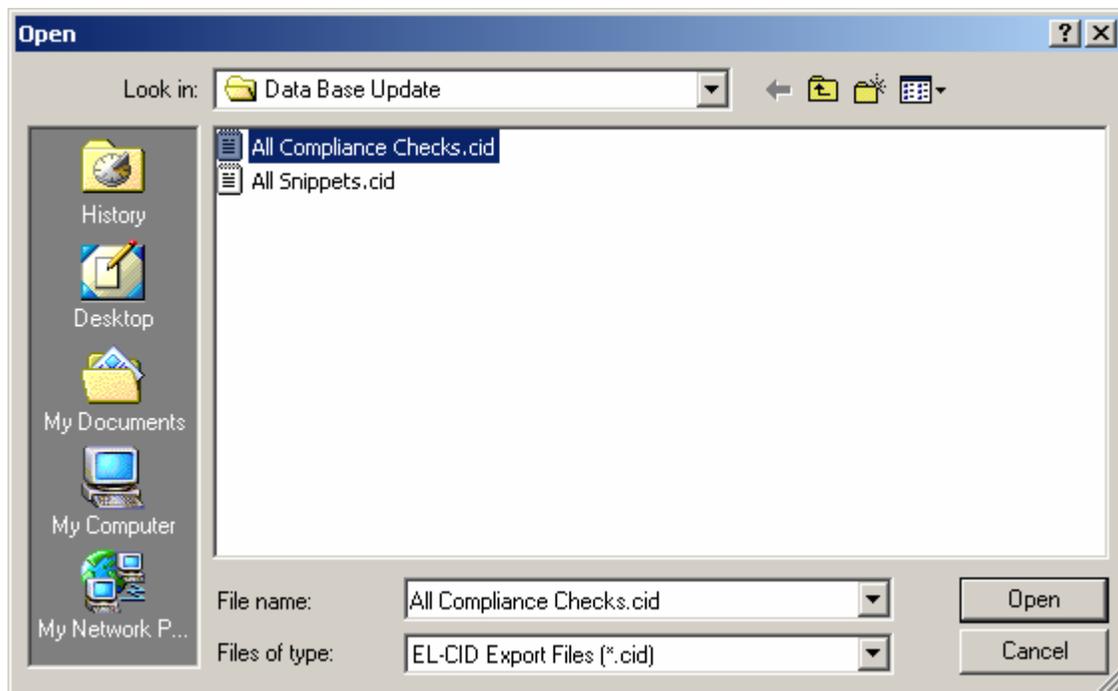
**Step 1.** Click the **Import** button.



The **Import** window is displayed. (This illustration uses the same default folders that were shown during the training class. You may have loaded the EL-CID program using a different path name. You should use the path name where you loaded your EL-CID software.)

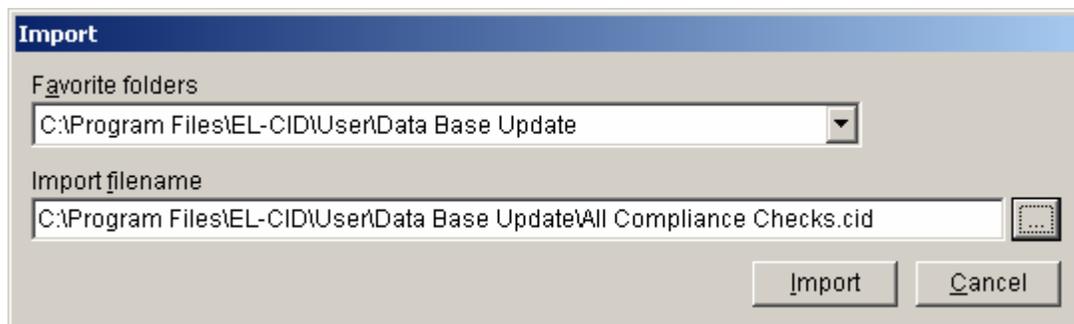


**Step 2.** Click the **browse** button to select the file to import. The folder we are using is on the EL-CID Training CD (labeled "Training Version 5 Rev. 3.0). Go to **E:\Data Base Update**. Highlight the filename **All Compliance Checks.cid** and then **click Open**.

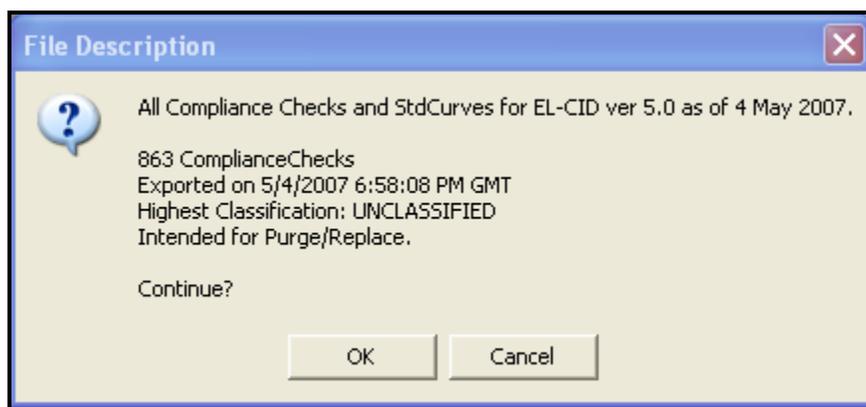




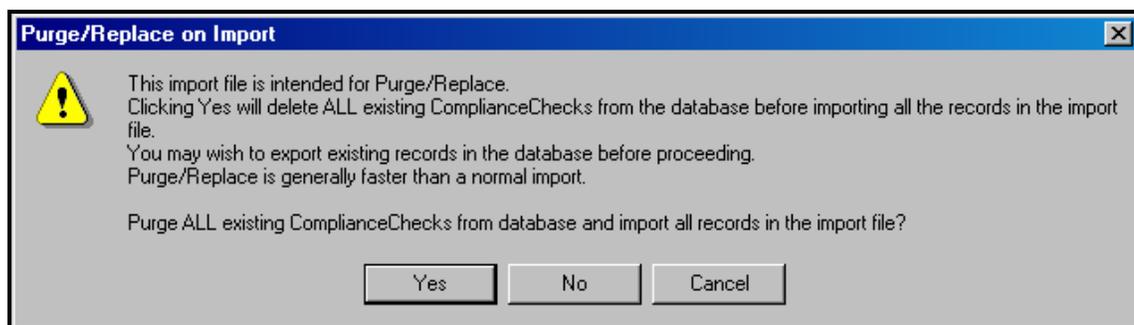
The **Import** window displays the selection.



**Step 3.** Click **Import**. The **File Description** window is displayed.



**Step 4.** Click **OK**. The **Purge/Replace on Import** window is displayed.



**Step 5.** Click **Yes**. The **Progress** window is briefly displayed and then disappears.

**Step 6.** Repeat the process, but this time choose **All Snippets.cid** from the import location.

## APPENDIX D - FREQUENTLY ASKED QUESTIONS

### D.1 What do the non-compliance messages mean when running compliance checks?

There are three levels of non-Compliance:````````````````````

- Failure** – The record is not compliant and must be fixed, or a waiver must be obtained.
- Warning** – The record may not be compliant or there may be some other inconsistency or error in the data.
- Note** – These are messages to help you build more complete or more accurate data, but do not indicate a compliance failure.

### D.2 I have failed a compliance check, what do I do?

Determine the cause of the failure. If the failure cannot be rectified, attach a document to the application to explain to NTIA why you should be granted a waiver from the standard.

### D.3 I think that a compliance check is incorrect.

Send an email to the EL-CID Help Desk. Give the compliance check number and include a description of the problem. If possible, send the unclassified certification to the Help Desk. The Help Desk will notify NTIA that a potential problem exists. The Help Desk will further coordinate with NTIA to determine if the compliance check is accurate. If the compliance check is found to be inaccurate, a new one will be issued. If the user must submit the application before resolution of the issue, indicate to NTIA that a compliance check is in question and under review (you can do this by using an attachment document). The user will be notified of the action taken.

### D.4 I just have one radio, how do I draw a link?

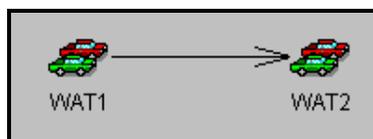
The link information that is gathered on the link node is most beneficial to NTIA. The link information gives the relationship between the transmitter, the transmitting antenna, transmitter power, and emission code. The applicable frequency bands are also listed.

The link can be drawn in three different ways.

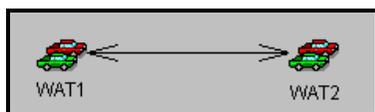
1. Terminate the link with a generic icon. This allows the link to be drawn and the transmitter information to be entered with no receiver information. This represents that you are probably communicating with similar equipment in the same frequency range.



2. Drag an identical icon to the screen and put the radio receiver characteristics on the second icon. This will allow you to give the receiver and receiver antenna data in the link.

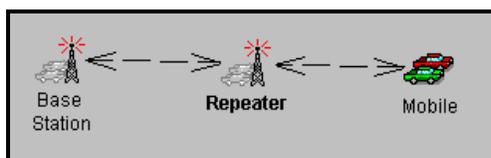


3. Drag an identical icon to the screen and put the full radio characteristics on the second icon. This will allow you to draw a link in the opposite direction. This represents that the radio will communicate with identical models of this radio.

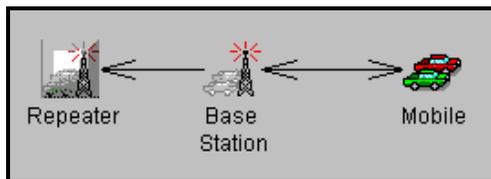


## D.5 I don't understand how repeaters are represented on the trunking diagram.

The typical trunking system consists of a base station communicating through a repeater to the mobile.



Since the repeater is usually the same radio equipment as the base station we have decided to ease the burden of repeating the transmitter information by calling it a generic station. Including the repeater icon is important, since the requirement exists to give the geographical location for each repeater; therefore we make a placeholder of the repeater stations in order that they may be assigned geographic locations.



## D.6 I have a change that I would like to be made to the EL-CID model.

In the documents directory under the EL-CID directory, you will find an EL-CID PCR (Program Change Request) Form. Fill this form out and email it to the EL-CID Help Desk. The Help Desk will coordinate the change with NTIA to determine if it is appropriate for use in EL-CID. If it is appropriate, the change will be included on the development schedule.

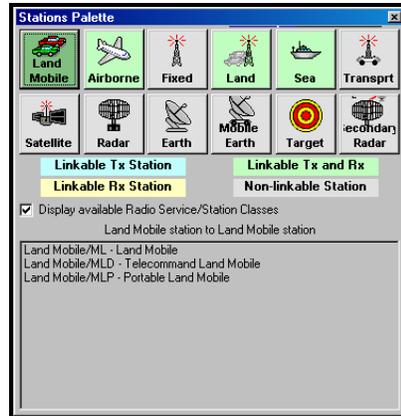
## D.7 The frequency allocation table does not list the operating frequencies of my transmitter as being valid.

This situation can be caused by several reasons:

1. The frequency allocation table frequencies are linked to the service station and radio class. Check to see if you have the correct icon on the diagram. The radio class is set on the link information page.
2. Changes may have been made to the frequency allocation table and not updated in the EL-CID Model. If you see the frequency band for which you are interested and it is marked as being not in-band, you may still choose the band and give a reason for wanting to use the frequency band.

## D.8 Why can't I draw links between some of the station icons?

The station icons represent Radio Service/Station Classes and according to NTIA rules only certain Radio Service/Station Classes may communicate with each other. The station icons are color coded to show which icons can be linked together. The radio service and station classes are listed in the expanded station palette.



## D.9 What Frequency Range Do I Use For The Transmitter, The Operating Range Or The Range I Want To Use?

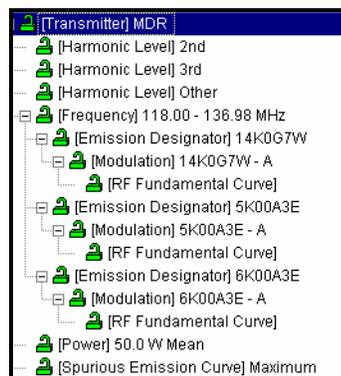
You should enter the operating range of the transmitting equipment. EL-CID will scan the frequency allocation table using the station class and radio service and display on the link information window the applicable frequency ranges that are available to use.

## D.10 I have a range of power values, what do I do?

Enter the maximum power value.

## D.11 May I have multiple emission codes for a single transmitter?

Yes, you can. You may also have multiple power values, and harmonic levels.



## D.12 When is NTIA going to require the use of EL-CID?

Certifications using EL-CID can be submitted to NTIA immediately. NTIA has already received several submissions from agencies. NTIA currently plans during the calendar year 2007 to require the use of the EL-CID format for submission of certifications to NTIA.

## D.13 How can I get any data that NTIA has in EL-CID format?

EL-CID files are FOR U.S. GOVERNMENT USE ONLY. The National Telecommunications and Information Administration (NTIA), U.S. Department of Commerce, authorizes only Government frequency assignment personnel (including Spectrum Planning Subcommittee representatives) and approved supporting contractors to have access to and utilize the EL-CID files pursuant to the following limitations.

The EL-CID files are authorized for U.S. Government Use Only. Reproduction of the EL-CID files is prohibited without the prior written approval of NTIA. The EL-CID files shall not be sold or otherwise made available for commercial purposes. If an authorized user needs additional copies of the EL-CID files, requests should be directed to:

Department of Commerce  
NTIA  
ATTN: C. Scammon, Room 4600  
1401 Constitution Avenue, N.W.  
Washington, DC 20230

Or

email: [cscammon@ntia.doc.gov](mailto:cscammon@ntia.doc.gov)

Government frequency assignment personnel (including Spectrum Planning Subcommittee representatives) are authorized to distribute the EL-CID files to supporting contractors only with the prior approval of the controlling U.S. Government Contracting Officer and only for the stated purposes of the contract. All copies of the EL-CID files must be returned to the Contracting Officer or NTIA at the conclusion of the work or the contract. Any other use of the EL-CID files by the supporting contractor is prohibited. The EL-CID files are intended for domestic U.S. Government use only. The EL-CID files shall not be made available to foreign governments or used in any contract with a foreign government without prior written approval by NTIA. An authorized user shall immediately notify NTIA or the controlling U.S. Government Contracting Officer of any violation of these limitations on the use of the EL-CID files.

## D.14 How can I represent an antenna that has multiple gains or multiple frequencies?

EL-CID only allows one gain and one frequency range in an antenna record. You can create several antenna records with a different name showing the explicit data (i.e. myantenna 136-160, myantenna 180-200, myantenna 3db, myantenna 5db).

## D.15 Why is it possible to put location data on a station node?

NTIA requires that for satellite and trunking systems, you provide location data for each station.

## **D.16 Do I have to draw the line diagram first?**

No. You may create equipment records first (file|new|transmitter, receiver, antenna). You can export these equipment records and send them to someone else. When you create the new certification, you can draw the line diagram, right click on the tree view station node and (add ...| get existing ...) from the data base.

## **D.17 What receiver IF data do I put in the model?**

NTIA is interested in the most restrictive (narrowest) IF curve data. Only one set of IF data is needed for each emission-sensitivity node.

## **D.18 How do I assign multiple radio services to a station icon?**

EL-CID only allows one radio service to be assigned to a station icon, except for Space which allows multiple radio services to be assigned to the Space Station Icon. If you need to represent more than one radio service for your station, drag the appropriate station icon to the diagram and indicate that it is the same transmitter (through the station name (i.e. my transmitter/1, my transmitter/2)). You can then add the appropriate equipment data to the new station and update the link information. Additional information can be represented in the attachment node using additional text or diagrams.

## **D.19 How do I represent a ship board mobile earth station?**

When you drag out the mobile earth station icon you have the choice of ship, air, or land based.

## **D.20 How do I represent an airborne radar station?**

When you drag out the radar station icon you have the choice of ship, air, or land based.



## APPENDIX E – SAMPLE SATELLITE SYSTEM

**Step 1.** Draw a diagram and enter the following data to create a sample satellite system.

This example is a description of a system that has two way communications between an earth station (named “Earth” and a satellite (named “Satellite”). Each station transmits and receives through a different antenna. This is a developmental system (stage 3) called “Sample Satellite”.

<b>General Data</b>	
<b>Field</b>	<b>Value</b>
Target date for System Approval	6/30/2006
System Description	The sample satellite will provide a platform for scientific data collected by onboard experiments
Target date for System Activation	6/30/2006
Target date for System Termination	6/30/2010
Number of Units	1
Estimated Initial Cost (\$)	260000
Information Transfer Requirement	Telemetry data GMSK/9.6 kbps ; Experiment data BPSK/38.4 kbps
System Essentiality or Replacement	System is designed to detect and characterize plasma bubbles in the atmosphere

## Earth Station



Earth Station	
Field	Value
Minimum Pointing Angle	0.0 Degrees

Antenna – Aperture	
Field	Value
Nomenclature	Earth Antenna Receiving
Manufacturer	Direction Corp
Model Name and Number	DC-Aperture-1
Antenna Horizontal Beamwidth	4 Degrees
Antenna Vertical Beamwidth	4 Degrees
Antenna Lower Frequency Limit	2200 MHz
Antenna Upper Frequency Limit	2290 MHz
Polarization	Righthand Circular
Antenna Main Beam Gain	26 dBi
1 <sup>st</sup> Sidelobe Level Plane Attenuation Rel/Act	Actual dBi
1 <sup>st</sup> Sidelobe Level Plane Attenuation Horizontal	8 dB
1 <sup>st</sup> Sidelobe Level Plane Attenuation Vertical	8 dB
First Sidelobe Plane Position Horizontal	32 Degrees
First Sidelobe Plane Position Vertical	32 Degrees
Horizontal Rotation Type	None
Antenna Vertical Scan	Yes
Antenna Vertical Scan Rate	2.0
Antenna Vertical Scan Maximum Elevation	90 Degrees
Antenna Vertical Scan Minimum Elevation	0 Degrees
Vertical Scan Characteristics Type	Electrical

Antenna – Linear	
Field	Value
Nomenclature	Earth Antenna Transmitting
Manufacturer	Mirage System
Model Name and Number	MS-Linear-1
Antenna Horizontal Beamwidth	34 Degrees
Antenna Vertical Beamwidth	78 Degrees
Antenna Lower Frequency Limit	144 MHz
Antenna Upper Frequency Limit	150 MHz
Polarization	Linear
Antenna Main Beam Gain	3 dBi
1 <sup>st</sup> Sidelobe Level Plane Attenuation Rel/Act	Actual dBi
1 <sup>st</sup> Sidelobe Level Plane Attenuation Horizontal	6 dB
1 <sup>st</sup> Sidelobe Level Plane Attenuation Vertical	6 dB

Location	
Field	Value
State, Country, or Location Name Part 1	Colorado
City or Location Name Part 2	Colorado Springs-USAF Academy
Location Type	Single Point
Geographic Coordinates	390021N 1043534W
Map Layer	Cities

Earth Receiver	
Field	Value
Nomenclature	Earth Receiver
Manufacturer	Kenwood
Model Name and Number	K-Ground-Rx
Frequency Stability	15
Frequency Stability Units	ppm
Image Rejection Level	60 dB
Local Oscillator Tuned Indicator	Below
Tuning Method	Synthesizer

Earth Receiver Frequency	
Field	Value
Lowest Tuned Frequency	2200 MHz
Highest Tuned Frequency	2290 MHz
Tuning Increment	5.0 kHz

Earth Receiver Frequency Emission Sensitivity	
Field	Value
Emission Designator	80K0G2D
Necessary Bandwidth	80 kHz
Performance Criteria	BER – Bit Error Rate
Performance Value	0.0001
Sensitivity	-124 dBm
Noise Figure	4.0 dB
Spurious Rejection Level	50 dB

Earth Receiver Frequency Emission Sensitivity IF Selectivity Curve	
Field	Value
Measured or Calculated	Measured
IF Frequency	70 MHz
3 dB Bandwidth / (Frequency Offset)	130 kHz / (65 kHz)*
20 dB Bandwidth / (Frequency Offset)	210 kHz / (105 kHz)*
60 dB Bandwidth / (Frequency Offset)	1380 kHz / (690 kHz)*

**\*Remember that the curve editor wants frequency offset as an input (frequency offset = ½ bandwidth)**

Earth Receiver Frequency RF Selectivity Curve	
Field	Value
Measured or Calculated	Measured
3 dB Bandwidth / (Frequency Offset)	5 MHz / (2.5 MHz)*
20 dB Bandwidth / (Frequency Offset)	20 MHz / (10 MHz)*
60 dB Bandwidth / (Frequency Offset)	30 MHz / (15 MHz)*

**\*Remember that the curve editor wants frequency offset as an input (frequency offset = ½ bandwidth)**

Earth Transmitter	
Field	Value
Nomenclature	Earth Transmitter
Manufacturer	Kenwood
Model Name and Number	K-Ground-Tx
Frequency Stability	3
Frequency Stability Units	ppm
Output Device	Transistor
Tuning Method	PLL Synthesizer
Suppression of Harmonic	Yes
Radar or Communications?	Communications

Earth Transmitter Harmonic	
Field	Value
2nd Harmonic	-70 dB
3rd Harmonic	-70 dB
Other Harmonic	-80 dB

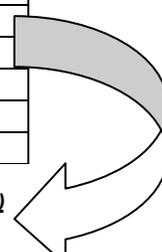
Earth Transmitter Frequency	
Field	Value
Lowest Tuned Frequency	144 MHz
Highest Tuned Frequency	152 MHz
Tuning Increment	2.0 kHz
# of Frequencies Required for Operation	2
Minimum Required Frequency Separation	10 MHz

Earth Transmitter Frequency Emission Designator	
Field	Value
Necessary Bandwidth	30 kHz
Emission Designator	30K0F2D

Earth Transmitter Frequency Emission Designator Modulation	
Field	Value
Emission Designator	30K0F2D
Occupied Bandwidth	30 kHz
Measured or Calculated	Measured
Modulation Type	Digital Modulation
Digital Modulation Type	MSK – Minimum Shift Keying
Number of Digital States	2
Transmission Bit Rate	9600 bps
Digital Peak Deviation	4.8 kHz
Digital Deviation Ratio	0.500
Digital Maximum Modulation Frequency	9.6 kHz
Digital Pulse Format	B- Non-Return to Zero (NRZ)

Earth Transmitter Frequency Emission Designator Modulation RF Fundamental Curve	
Field	Value
Measured or Calculated	Measured
-3 dB Bandwidth / (Frequency Offset)	7 kHz / (3.5 kHz)*
-20 dB Bandwidth / (Frequency Offset)	32 kHz / (16 kHz)*
-40 dB Bandwidth / (Frequency Offset)	57 kHz / (28.5 kHz)*
-60 dB Bandwidth / (Frequency Offset)	90 kHz / (45 kHz)*

***\*Remember that the curve editor wants frequency offset as an input (frequency offset = ½ bandwidth)***



Earth Transmitter Power	
Field	Value
Power Type	Mean
Power	100 Watts

Earth Transmitter Spurious Emission Curve	
Field	Value
Maximum Spurious Emission Level	Checked
	-80 dB

## Satellite Station



Antenna – Linear	
Field	Value
Nomenclature	Satellite Antenna Transmitting
Manufacturer	OMNI Tronix
Model Name and Number	OT-Linear-1
Antenna Horizontal Beamwidth	8 Degrees
Antenna Vertical Beamwidth	8 Degrees
Antenna Lower Frequency Limit	2200 MHz
Antenna Upper Frequency Limit	2290 MHz
Polarization	Lefthand Circular
Antenna Main Beam Gain	28 dBi
1 <sup>st</sup> Sidelobe Level Plane Attenuation Rel/Act	Actual dBi
1st Sidelobe Level Plane Attenuation Horizontal	6
1st Sidelobe Level Plane Attenuation Vertical	6

Antenna – Linear	
Field	Value
Nomenclature	Satellite Antenna Receiving
Manufacturer	OMERA(FRANCE)
Model Name and Number	O-Linear-1
Antenna Horizontal Beamwidth	34 Degrees
Antenna Vertical Beamwidth	78 Degrees
Antenna Lower Frequency Limit	140 MHz
Antenna Upper Frequency Limit	160 MHz
Polarization	Vertical
Antenna Main Beam Gain	4.0 dBi
1 <sup>st</sup> Sidelobe Level Plane Attenuation Rel/Act	Actual dBi
1 <sup>st</sup> Sidelobe Level Plane Attenuation Horizontal	6 dB
1 <sup>st</sup> Sidelobe Level Plane Attenuation Vertical	6 dB

Location	
Field	Value
State, Country, or Location Name Part 1	Space
City or Location Name Part 2	Sample Satellite
Location Type	Non-geostationary Satellite
Altitude at Apogee	370 km
Altitude at Perigee	375 km
Equatorial Inclination	51.6 Degrees
Period of Orbit	5520 Seconds

Satellite Receiver	
Field	Value
Nomenclature	Satellite Receiver
Manufacturer	SUR-TEC INC
Model Name and Number	S-Satellite-Rx
Frequency Stability	5
Frequency Stability Units	ppm
Image Rejection Level	60 dB
Local Oscillator Tuned Indicator	Below
Tuning Method	Fixed Crystal

Satellite Receiver Frequency	
Field	Value
Lowest Tuned Frequency	144 MHz
Highest Tuned Frequency	150 MHz
Tuning Increment	1.0 kHz

Satellite Receiver Frequency Emission Sensitivity	
Field	Value
Emission Designator	30K0F2D
Necessary Bandwidth	30 kHz
Performance Criteria	BER – Bit Error Rate
Performance Value	0.0001
Sensitivity	-130 dBm
Noise Figure	2 dB
Noise Temperature	230 Kelvin
Spurious Rejection Level	50 dB

Satellite Receiver Frequency Emission Sensitivity IF Selectivity Curve	
Field	Value
Measured or Calculated	Measured
IF Frequency	455 kHz
3 dB Bandwidth / (Frequency Offset)	60 kHz / (30 kHz)*
20 dB Bandwidth / (Frequency Offset)	80 kHz / (40 kHz)*
60 dB Bandwidth / (Frequency Offset)	120 kHz / (60 kHz)*

***\*Remember that the curve editor wants frequency offset as an input (frequency offset = ½ bandwidth)***

Satellite Receiver Frequency RF Selectivity Curve	
Field	Value
Measured or Calculated	Measured
3 dB Bandwidth / (Frequency Offset)	30 MHz / (15 MHz)*
20 dB Bandwidth / (Frequency Offset)	40 MHz / (20 MHz)*
60 dB Bandwidth / (Frequency Offset)	60 MHz / (30 MHz)*

Satellite Transmitter	
Field	Value
Nomenclature	Satellite Transmitter
Manufacturer	SUR-TEC INC
Model Name and Number	ST-Satellite-1
Frequency Stability	10
Frequency Stability Units	ppm
Output Device	Transistor
Tuning Method	Fixed Crystal

Satellite Transmitter Harmonic	
Field	Value
2nd Harmonic	-60 dB
3rd Harmonic	-60 dB
Other Harmonic	-60 dB

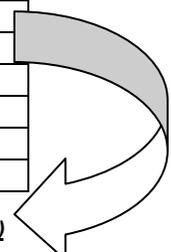
Satellite Transmitter Frequency	
Field	Value
Lowest Tuned Frequency	2200 MHz
Highest Tuned Frequency	2290 MHz
Tuning Increment	0.0 kHz
# of Frequencies Required for Operation	2
Minimum Required Frequency Separation	0.5 MHz

Satellite Transmitter Frequency Emission Designator	
Field	Value
Necessary Bandwidth	80 kHz
Emission Designator	80K0G2D

Satellite Transmitter Frequency Emission Designator Modulation	
Field	Value
Emission Designator	80K0G2D
Measured or Calculated	Measured
Occupied Bandwidth	80 kHz
Modulation Type	Digital Modulation
Digital Modulation Type	PSK – Phase Shift Keying
Number of Digital States	2
Transmission Bit Rate	38400 bps
Digital Peak Deviation	60.288 kHz
Digital Deviation Ratio	1.57
Digital Maximum Modulation Frequency	38.400 kHz
Digital Pulse Format	B- Non-Return to Zero (NRZ)

Satellite Transmitter Frequency Emission Designator Modulation RF Fundamental Curve	
Field	Value
Measured or Calculated	Measured
-3 dB Bandwidth / (Frequency Offset)	60 kHz / (30 kHz)*
-20 dB Bandwidth / (Frequency Offset)	90 kHz / (45 kHz)*
-40 dB Bandwidth / (Frequency Offset)	130 kHz / (65 kHz)*
-60 dB Bandwidth / (Frequency Offset)	188 kHz / (94 kHz)*

***\*Remember that the curve editor wants frequency offset as an input (frequency offset = 1/2 bandwidth)***



Satellite Transmitter Power	
Field	Value
Power Type	Mean
Power	0.5 Watts

Satellite Transmitter Spurious Emission Curve	
Field	Value
Maximum Spurious Emission Level	Checked
	-60 dB

Link Information: Earth to Satellite	
Field	Value
Radio Service/Station Class	Space Operation / TT - Earth Space Research / TH - Earth
Coupling Loss	0.0 dB
Selected Modes	Select the one PRI mode

Link Information: Satellite to Earth	
Field	Value
Radio Service/Station Class	Space Operation / ET - Space Space Research / EH - Space
Coupling Loss	0.0 dB
Spectral Power Density	-48.8 dBW/Hz
Selected Modes	Select the one PRI mode

**SATELLITE SYSTEM (cont.)**

**Step 2.** Run the compliance checks. A sample of compliance check results is below:

▼ [Transmitter] Earth Transmitter

**NOTE NTIA Chapter 10: NTIA-CH10-8.7.23**  
If this transmitter has been type accepted by the FCC, enter the FCC Acceptance Number.

▼ [Emission - Sensitivity] 30K0F2D --130 dBm

**WARNING NTIA General: NTIA-Gen-0083**  
Calculated Noise Figure differs from the entered Noise Figure by more than 5%. Noise Figure[dB] = 10Log( ( Noise Temperature[K] / 290 ) + 1 )

▼ [Attachments]

**NOTE NTIA Chapter 10: NTIA-CH10-8.3.05**  
Stage 2 and above space systems are generally required to submit notification to the Radiocommunication Bureau (BR). See Section 3.3 of the NTIA Manual. If not installed on your system, install the ITU software. In EL-CID Preferences, General tab, enter the path to the ITU program. Use the ITU program to prepare the notification and attach it to the EL-CID Certification. If this system is exempt from BR notification, set ITU Waiver to Yes in the General Information node.

**NOTE NTIA Chapter 10: NTIA-CH10-8.5**

For all stages, submit reports of any previous EMC studies, predictions, analyses, and prototype EMC testing that are relevant to the assessment of the system (right-click Attachments in Tree View) You may reference documents previously provided to the IRAC/SPS, including references to previous stages of this system (right-click References in Tree View).

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 [Coupling] Satellite Transmitter with Satellite Antenna Transmitting

**WARNING NTIA Chapter 8: NTIA-CH8-8.2.36.1.a-04-1-W**

This Satellite (to Earth) link exceeds the Power Flux Density Limits of Table 8.2.36 (1525-1530, 1670-1710, 1761-1842, and 2200-2300 MHz). Click the [Coupling] node to display the Link Info screen, click Power Flux Density, and click Calculate to see the calculated PFD and limits. If this is a Satellite to Earth link at 2210 MHz, and you are failing by less than 16 dB, you may request a waiver from NTIA pursuant to SPS-12308/IRAC 31015/1.

- Step 3.** Follow the instructions on the above WARNING to see why the PFD is failing. (You can do “what if” analysis to see how varying the parameters will change the PFD result.)
- Step 4.** Import the sample satellite record from the training CD (under Training Materials/Samples)
- Step 5.** Use the query on Transmitters, Receivers, and Antennas to compare the two certifications.



## APPENDIX F – SAMPLE RADAR SYSTEM

**Step 1.** Draw a diagram and enter the following data to create a sample radar system.

This example is a description of a land based radar system that has a station named “Radar” (select the Land option button) transmitting to a target named “Target”. This is a developmental system (stage 3) called “Sample Radar”.

General Data	
Field	Value
System Description	Radar to detect targets and weather
Target date for System Activation	6/30/2007
Target date for System Termination	6/30/2100
Number of Units	1
Estimated Initial Cost (\$)	1250000
Information Transfer Requirement	Unmodulated and Linear FM pulses
System Essentiality or Replacement	Replace existing system

Location	
Field	Value
State, Country, or Location Name Part 1	USP (US&POSS)
City or Location Name Part 2	
Location Type	Polygon
Map Layer	Countries



### Radar Station

Antenna – Aperture	
Field	Value
Nomenclature	Radar Antenna
Manufacturer	ANDREW ANTENNA CORPORATION LTD
Model Name and Number	A-Aperture-1
Antenna Horizontal Beamwidth	1.45 Degrees
Antenna Vertical Beamwidth	4.8 Degrees
Antenna Lower Frequency Limit	1200 MHz
Antenna Upper Frequency Limit	1400 MHz
Polarization	Right and Left Hand Circular
Antenna Main Beam Gain	34 dBi
1 <sup>st</sup> Sidelobe Level Plane Attenuation Rel/Act	Relative dBi
1 <sup>st</sup> Sidelobe Level Plane Attenuation Horizontal	21 dB
1 <sup>st</sup> Sidelobe Level Plane Attenuation Vertical	21 dB
First Sidelobe Plane Position Horizontal	3.5 Degrees
First Sidelobe Plane Position Vertical	3.5 Degrees
Horizontal Rotation Type	Horizontal Rotation 360 Degrees
Horizontal Rotation Rate	12.5 per minute
Capable of Blanking	No
Horizontal Scan Characteristics Type	Mechanical
Antenna Vertical Scan	Yes
Antenna Vertical Scan Rate	8.0
Antenna Vert. Scan Maximum Elevation	5 Degrees

<b>Antenna – Aperture</b>	
Field	Value
Antenna Vertical Scan Minimum Elevation	-3 Degrees
Vertical Scan Characteristics Type	Mechanical
Antenna Horizontal Dimension	5 meters
Antenna Vertical Dimension	2.75 meters

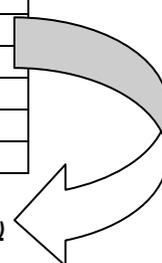
<b>Radar Receiver</b>	
Field	Value
Nomenclature	Radar Receiver
Manufacturer	RAYTHEON CO. OR RAYTHEON MANUFACTURING CO.
Model Name and Number	R-Radar-Rx
Frequency Stability	10
Frequency Stability Units	ppm
Image Rejection Level	60 dB
Local Oscillator Tuned Indicator	Above
Tuning Method	Crystal Controlled

<b>Radar Receiver Frequency</b>	
Field	Value
Lowest Tuned Frequency	1200 MHz
Highest Tuned Frequency	1400 MHz
Tuning Increment	5.0kHz

<b>Radar Receiver Frequency Emission Sensitivity</b>	
Field	Value
Emission Designator	4M20Q3N
Necessary Bandwidth	4200 MHz
Performance Criteria	S/N – Signal to Noise Ratio (dB)
Performance Value	-10
Sensitivity	-110 dBm
Noise Figure	2.90 dB
Spurious Rejection Level	65 dB

<b>Radar Receiver Frequency Emission Sensitivity IF Selectivity Curve</b>	
Field	Value
Measured or Calculated	Measured
IF Frequency	27.180 MHz
3 dB Bandwidth / (Frequency Offset)	6.4 kHz / (3.2 kHz)*
20 dB Bandwidth / (Frequency Offset)	9 kHz / (4.5 kHz)*
60 dB Bandwidth / (Frequency Offset)	18.2 kHz / (9.1 kHz)*

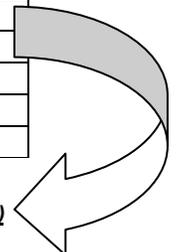
***\*Remember that the curve editor wants frequency offset as an input (frequency offset = ½ bandwidth)***



<b>Radar Receiver Frequency Emission Sensitivity</b>	
Field	Value
Emission Designator	7M30P0N
Necessary Bandwidth	7300 kHz
Performance Criteria	MDS – Minimum Discernable Signal (dB)
Performance Value	-10
Sensitivity	-109 dBm
Noise Figure	3 dB
Spurious Rejection Level	65 dB

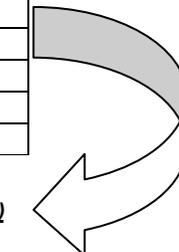
Radar Receiver Frequency Emission Sensitivity IF Selectivity Curve	
Field	Value
Measured or Calculated	Measured
IF Frequency	75 MHz
3 dB Bandwidth / (Frequency Offset)	5.8 MHz / (2.9 MHz)*
20 dB Bandwidth / (Frequency Offset)	8 MHz / (4 MHz)*
60 dB Bandwidth / (Frequency Offset)	21.8 MHz / (10.9 MHz)*

**\*Remember that the curve editor wants frequency offset as an input (frequency offset = 1/2 bandwidth)**



Radar Receiver Frequency RF Selectivity Curve	
Field	Value
Measured or Calculated	Measured
3 dB Bandwidth / (Frequency Offset)	568 MHz / (284 MHz)*
20 dB Bandwidth / (Frequency Offset)	904 MHz / (452 MHz)*
60 dB Bandwidth / (Frequency Offset)	2700 MHz / (1350 MHz)*

**\*Remember that the curve editor wants frequency offset as an input (frequency offset = 1/2 bandwidth)**



Radar Transmitter	
Field	Value
Nomenclature	Radar Transmitter
Manufacturer	RAYTHEON CO. OR RAYTHEON MANUFACTURING CO.
Model Name and Number	R-Radar-Tx
Frequency Stability	30
Frequency Stability Units	ppm
Output Device	Transistor
Tuning Method	Crystal Controlled
Suppression of Harmonic	Yes

Radar Transmitter Harmonic	
Field	Value
2nd Harmonic	-74 dB
3rd Harmonic	-80 dB
Other Harmonic	-80 dB

Radar Transmitter Frequency	
Field	Value
Lowest Tuned Frequency	1200 MHz
Highest Tuned Frequency	1390 MHz
Tuning Increment	0.0 kHz
Number of Frequencies Required for Operation	2
Minimum Required Frequency Separation	30 MHz

Radar Transmitter Frequency Emission Designator	
Field	Value
Necessary Bandwidth	4200 kHz
Emission Designator	4M20Q3N

Radar Transmitter Frequency Emission Designator Modulation	
Field	Value
Emission Designator	4M20Q3N
Occupied Bandwidth	4200 kHz
Measured or Calculated	Measured
Radar Type	FM Pulse Radar
Pulse Repetition Rate	1391 pps
Pulse Rise Time	0.000150 ms
Pulse Fall Time	0.000150 ms
Pulse Width	0.0256 ms
Pulse Duty Cycle	3.561 %
Pulse Compression Ratio	74
Radar Processing Gain	10 dB
Radar Pulse Compression Deviation	2890 kHz
Number of Radar Subpulses	5

Radar Transmitter Frequency Emission Designator Modulation RF Fundamental Curve	
Field	Value
Measured or Calculated	Measured
-3 dB Bandwidth / (Frequency Offset)	2630 kHz / (1315 kHz)*
-20 dB Bandwidth / (Frequency Offset)	4200 kHz / (2100 kHz)*
-40 dB Bandwidth / (Frequency Offset)	9500 kHz / (4750 kHz)*
-60 dB Bandwidth / (Frequency Offset)	30000 kHz / (15000 kHz)*

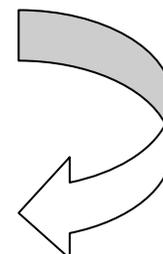
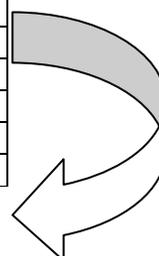
***\*Remember that the curve editor wants frequency offset as an input (frequency offset = 1/2 bandwidth)***

Radar Transmitter Frequency Emission Designator	
Field	Value
Necessary Bandwidth	7300 kHz
Emission Designator	7M30P0N

Radar Transmitter Frequency Emission Designator Modulation	
Field	Value
Emission Designator	7M30P0N
Occupied Bandwidth	7300 kHz
Measured or Calculated	Measured
Radar Type	Non-FM Pulse Radar with Freq. Hopping
Pulse Repetition Rate	1391 pps
Pulse Rise Time	0.000150 ms
Pulse Fall Time	0.000150 ms
Pulse Width	0.00200 ms
Pulse Duty Cycle	0.2782 %

Radar Transmitter Frequency Emission Designator Modulation RF Fundamental Curve	
Field	Value
Measured or Calculated	Measured
-3 dB Bandwidth / (Frequency Offset)	3500 kHz / (1750 kHz)*
-20 dB Bandwidth / (Frequency Offset)	7300 kHz / (3650 kHz)*
-40 dB Bandwidth / (Frequency Offset)	11000 kHz / (5500 kHz)*
-60 dB Bandwidth / (Frequency Offset)	150000 kHz / (75000 kHz)*

***\*Remember that the curve editor wants frequency offset as an input (frequency offset = 1/2 bandwidth)***



Radar Transmitter Power	
Field	Value
Power Type	Peak Envelope
Power	45000 Watts

Radar Transmitter Spurious Emission Curve	
Field	Value
Maximum Spurious Emission Level	Checked
	-80 dB

Link Information: Radar to Target	
Field	Value
Radio Service/Station Class	Radiodetermination / LR - Land
Available Modes	Both in-band modes

**RADAR SYSTEM (cont.)**

**Step 2.** Run the compliance checks. A sample list of compliance check results is below:

▼ [IF Selectivity Curve] at 75000 kHz

**FAILURE NTIA Chapter 5 RSEC: NTIA-CH5-5.5.3.7-1**  
 Group C radar receivers must have IF Selectivity characteristics commensurate with or narrower than the corresponding transmitter bandwidth. The receiver IF Selectivity curve is wider than the corresponding transmitter's RF Fundamental curve. See section 5.5.3 paragraph 7 of the NTIA Manual.

▼ [Transmitter] Radar Transmitter

**NOTE NTIA Chapter 10: NTIA-CH10-8.7.23**  
 If this transmitter has been type accepted by the FCC, enter the FCC Acceptance Number.

□ [RF Fundamental Curve]

**FAILURE NTIA Chapter 5 RSEC: NTIA-CH5-5.5.3.3.1-2**  
 This Group C non-FM pulsed radar transmitter does not meet the standard emission bandwidth curve as required in section 5.5.3 paragraphs 3.1 and 4.1 of the NTIA Manual. Note that  $P_{avg} = \text{Peak Power} * \text{Pulse Repetition Rate} * \text{Pulse Width}$  is used for Pt in the curve formula.

▼ [Attachments]

**NOTE NTIA Chapter 10: NTIA-CH10-8.5**  
 For all stages, submit reports of any previous EMC studies, predictions, analyses, and prototype EMC testing that are relevant to the assessment of the system (right-click Attachments in Tree View) You may reference documents previously provided to the IRAC/SPS, including references to previous stages of this system (right-click References in Tree View).

**FAILURE NTIA Chapter 5 RSEC: NTIA-AnnexJ-Radar-Non-FM-Pulse**

The necessary bandwidth (-20 dB point) on this RF Fundamental curve of this non-FM pulse radar does not meet the formula as given in ANNEX J of the NTIA Manual.

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**Step 3.** Import the sample radar record from the training CD (under Training Materials / Samples)

**Step 4.** Use the query on Certifications, Transmitters, Receivers, and Antennas to compare the two certifications.