

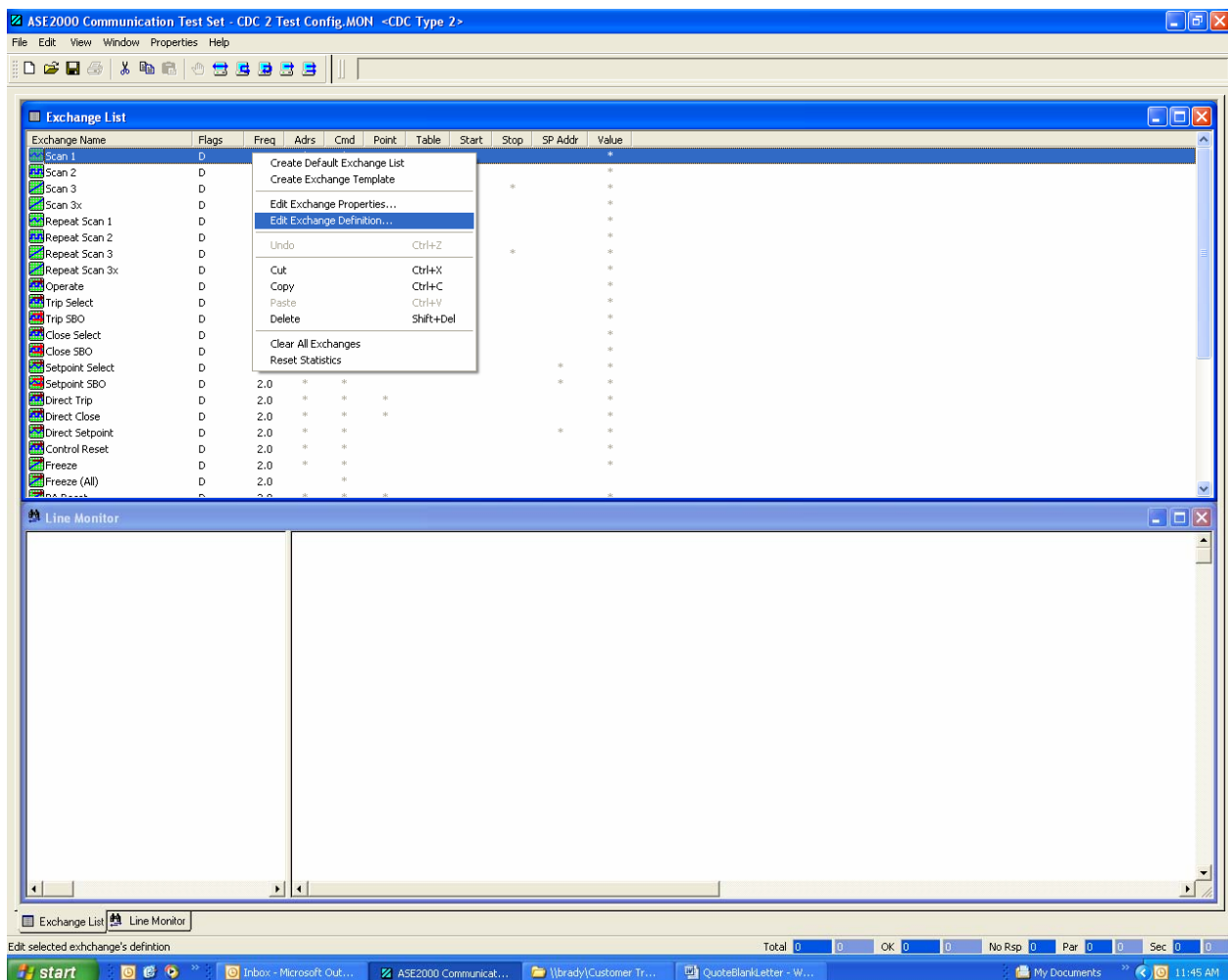
## CDC Type I and CDC Type II Configuration for ASE2000

In order for the ASE2000 to correctly parse and display data from a CDC I or CDC II RTU, it is necessary to edit the exchange definitions for the SCAN 1, SCAN 2, and SCAN 3 commands to define the point types and point counts. This configuration procedure can be used to define CDC message structures when the ASE2000 is used for Monitoring, Master Simulation, and RTU Simulation. The following example will illustrate how to configure the Test Set for an RTU configuration containing 32 Digital Input points, 16 Analog Input points, and 4 Pulse Accumulator input points. In addition the procedure for adding and customizing exchanges for party-line monitoring is described.

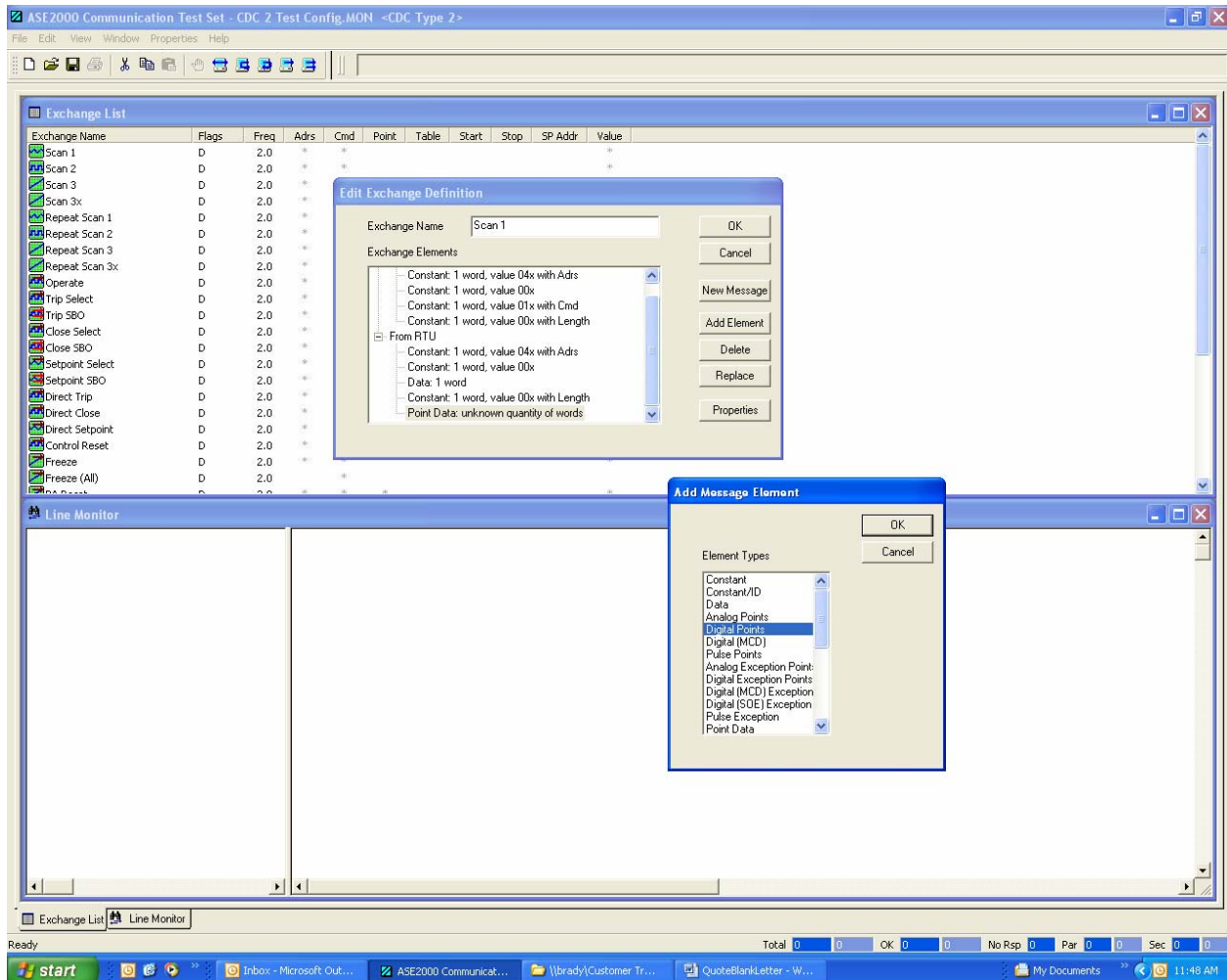
### SCAN 1 Command

The SCAN 1 command will cause the RTU to return the current value for all Digital Input (DI) and Analog Input (AI) points configured in the RTU. Since the Test Set has no way of knowing how many of each points are configured, it is necessary to specify this information.

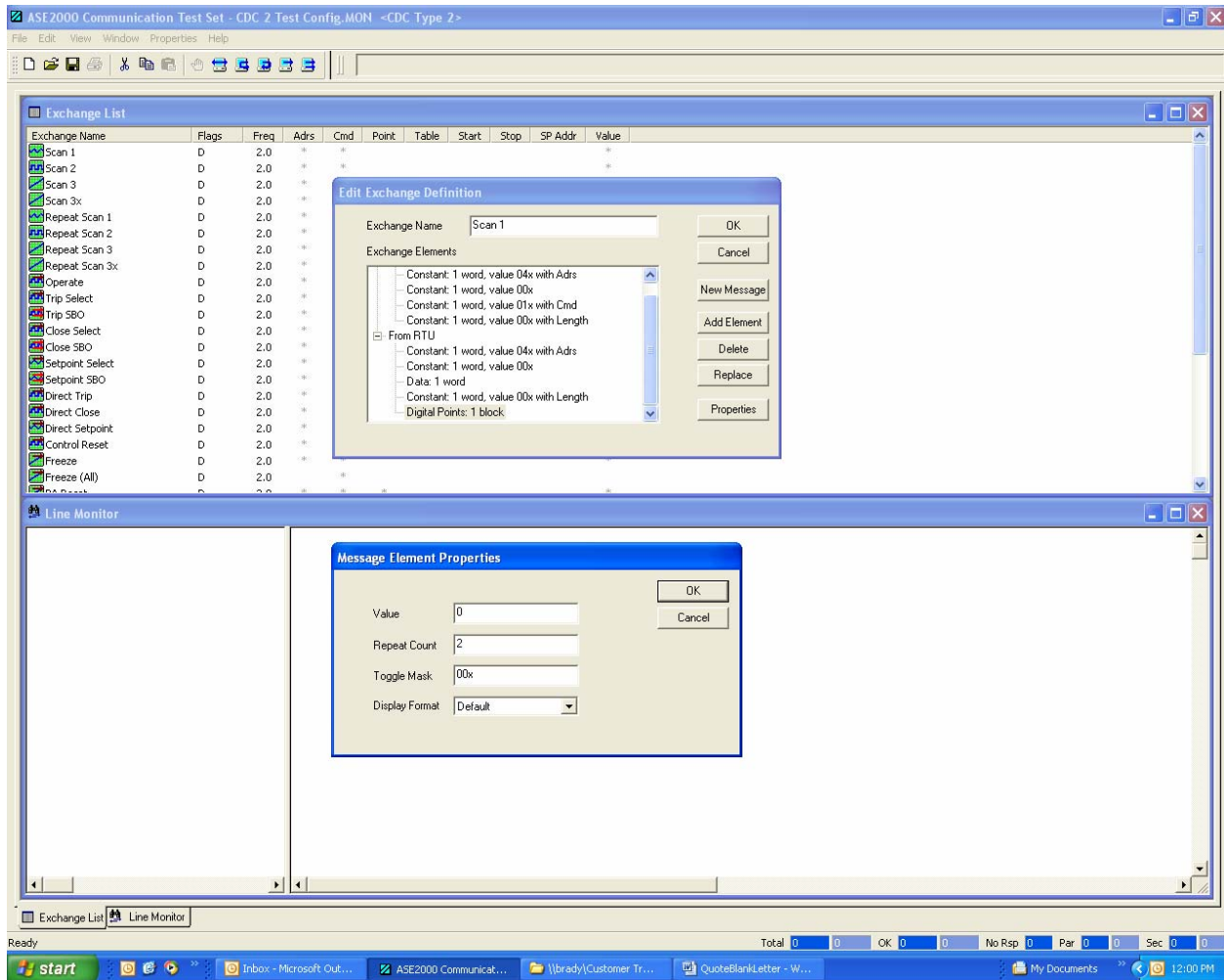
On the Exchange List View, position the pointer over Scan 1, right-click, and select Edit Exchange Definition. This will bring up the Edit Exchange Definition display.



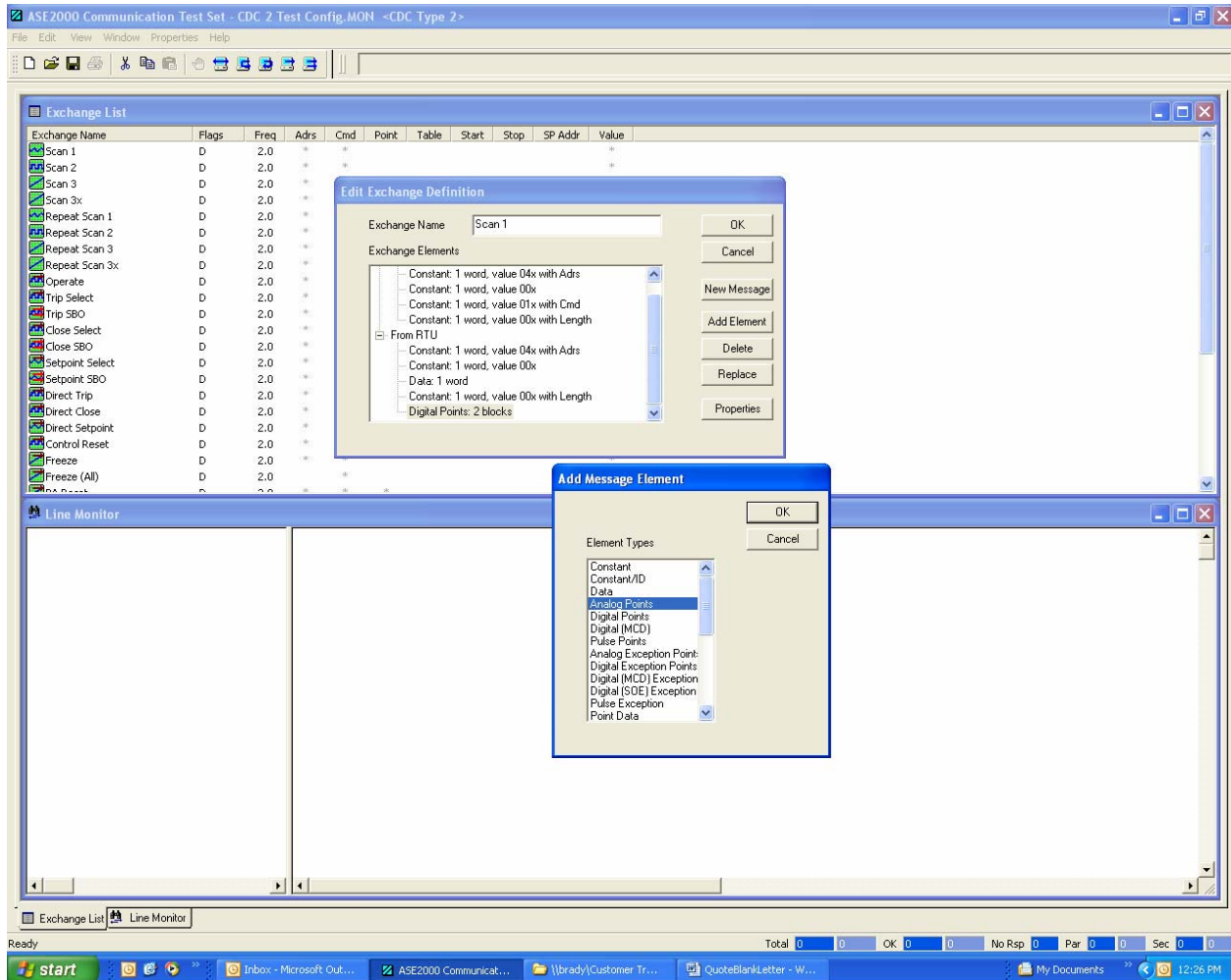
Scroll down to the last line which initially defines “Point Data: Unknown quantity of words”. Click on this entry to select and then select the Replace button. This will bring up the “Add message Element” display. Select “Digital Points” and then select the OK button.



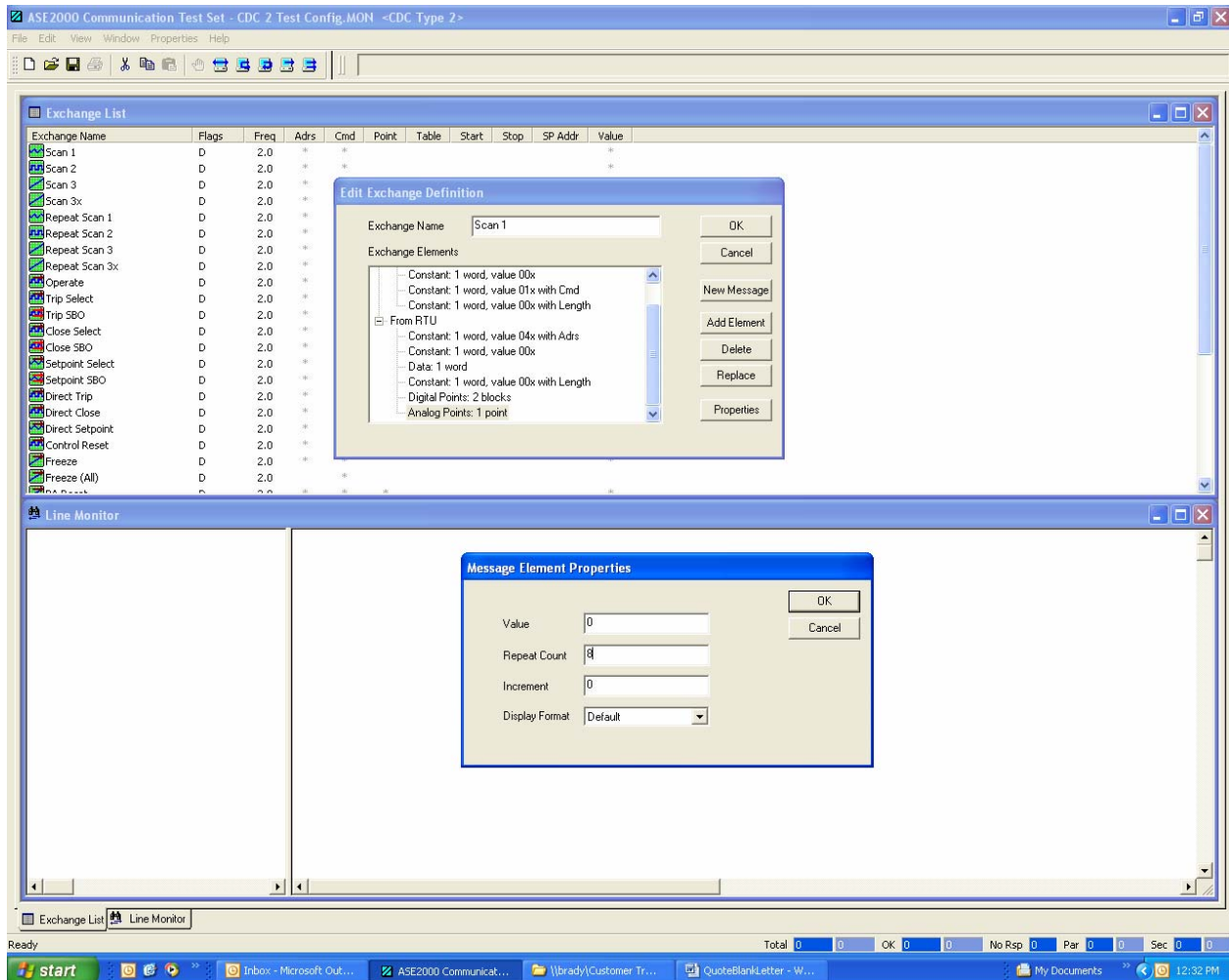
This will bring up the Message Element Properties display. Enter the value 2 in the Repeat Count field then select OK. The CDC Digital Input word contains 16 points per word so a Repeat Count of 2 defines 32 Digital Input points. The Edit Exchange Definition will now show “Digital Points: 2 blocks”



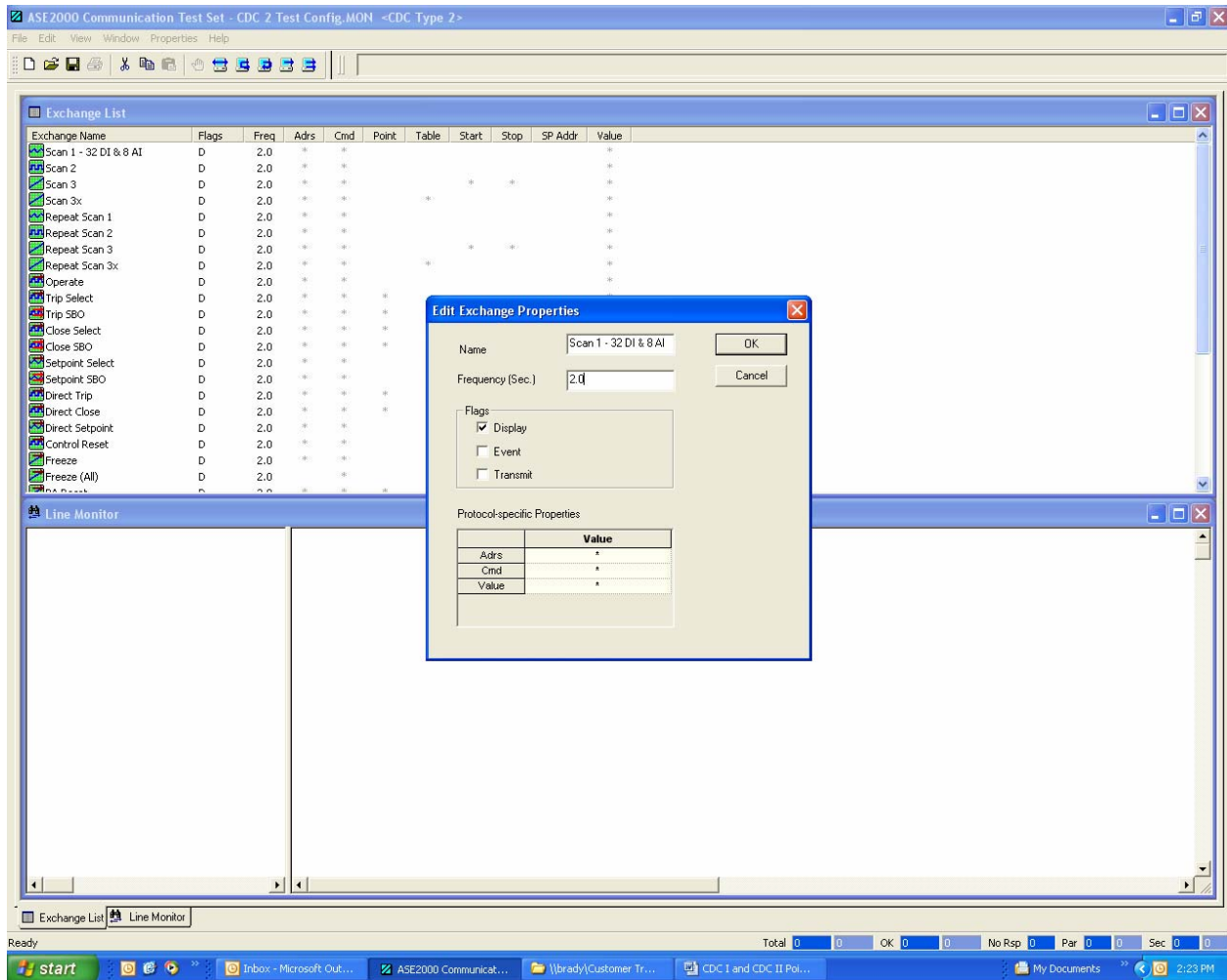
Next, the Analog Input points are configured. With the “Digital Points” line highlighted, select the Add Element button, and select Analog Points. This will bring up the Message Element Properties display.



Enter 8 in the Repeat Count field to specify 8 Analog Input points then select OK and select OK on the Edit Exchange Definition display. The Value and Increment fields are only used when the test set is used for RTU simulation. This completes configuration for the SCAN 1 command.



As a means to document the configuration, double click on the Scan 1 exchange name and modify the Name field to reflect the point configuration. If the test set will be used for Master Simulation or Monitor Mode, the Adrs field can be modified to contain the RTU address of the RTU being tested.





### **SCAN 2 Command**

The SCAN 2 command is used to request the RTU to return the current value of all Digital Input points. In general, it is not necessary to configure this command if the test set is being used for Master Simulation or Monitor. The test set knows SCAN 2 is only used for DI points so it is not necessary to specify the point type and, in most cases, the test set will sense the message length and display the data correctly. If there is a problem displaying data from a SCAN 2 response, configure the exchange with the correct number of points and try again. The configuration method is the same as described under SCAN 1 Command for DI points above.

### **SCAN 3 Command**

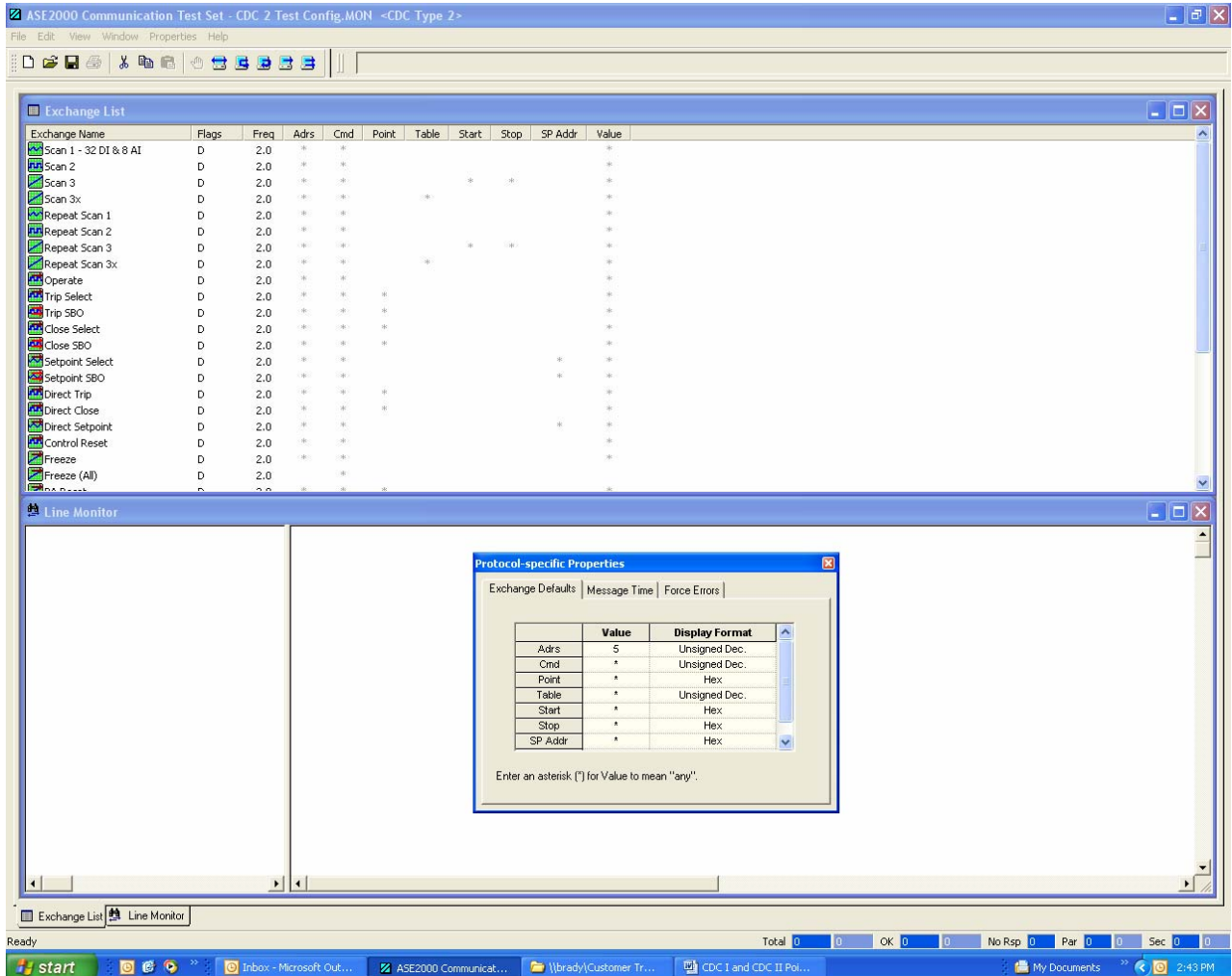
The SCAN 3 command, like SCAN 1, can cause the RTU to return different point types. DI, AI, and PI (Pulse Accumulator input) points can all be requested with a SCAN 3 command. For the test set to correctly parse and display the RTU response to a SCAN 3 request, it is necessary to define the point types and point counts for the points returned by this command. Again, the procedure for specifying the point configuration is the same as described for SCAN 1. The Edit Exchange Definition and supporting displays are used to customize the default exchange definition to contain the specific point types and point counts.

## Party Line Configuration

When the test set is used in Monitor Mode where there are multiple RTUs on a communication line, you can limit the data displayed by the test set to a single RTU by setting the RTU address in all the exchanges and setting the Display Enabled Exchanges Only option.

Set the RTU address for all exchanges as follows:

Select "Properties > Protocol Specific" and set the Adrs Value to the RTU address.



The screenshot shows the ASE2000 Communication Test Set - CDC 2 Test Config, MON -<CDC Type 2> application window. The window has a menu bar (File, Edit, View, Window, Properties, Help) and a toolbar. The main area is divided into two tabs: Exchange List and Line Monitor. The Exchange List tab is active, showing a table of exchanges. The Line Monitor tab is also visible. A Protocol-specific Properties dialog box is open, showing the Exchange Defaults tab with a table of values and display formats.

Exchange Name	Flags	Freq	Adrs	Cmd	Point	Table	Start	Stop	SP Addr	Value
Scan 1 - 32 DI & 8 AI	D	2.0	*	*						*
Scan 2	D	2.0	*	*						*
Scan 3	D	2.0	*	*			*	*		*
Scan 3x	D	2.0	*	*		*				*
Repeat Scan 1	D	2.0	*	*						*
Repeat Scan 2	D	2.0	*	*						*
Repeat Scan 3	D	2.0	*	*			*	*		*
Repeat Scan 3x	D	2.0	*	*		*				*
Operate	D	2.0	*	*						*
Trip Select	D	2.0	*	*	*					*
Trip SBO	D	2.0	*	*	*					*
Close Select	D	2.0	*	*	*					*
Close SBO	D	2.0	*	*	*					*
Setpoint Select	D	2.0	*	*	*				*	*
Setpoint SBO	D	2.0	*	*	*				*	*
Direct Trip	D	2.0	*	*	*				*	*
Direct Close	D	2.0	*	*	*				*	*
Direct Setpoint	D	2.0	*	*	*				*	*
Control Reset	D	2.0	*	*	*				*	*
Freeze	D	2.0	*	*	*				*	*
Freeze (All)	D	2.0	*	*	*				*	*

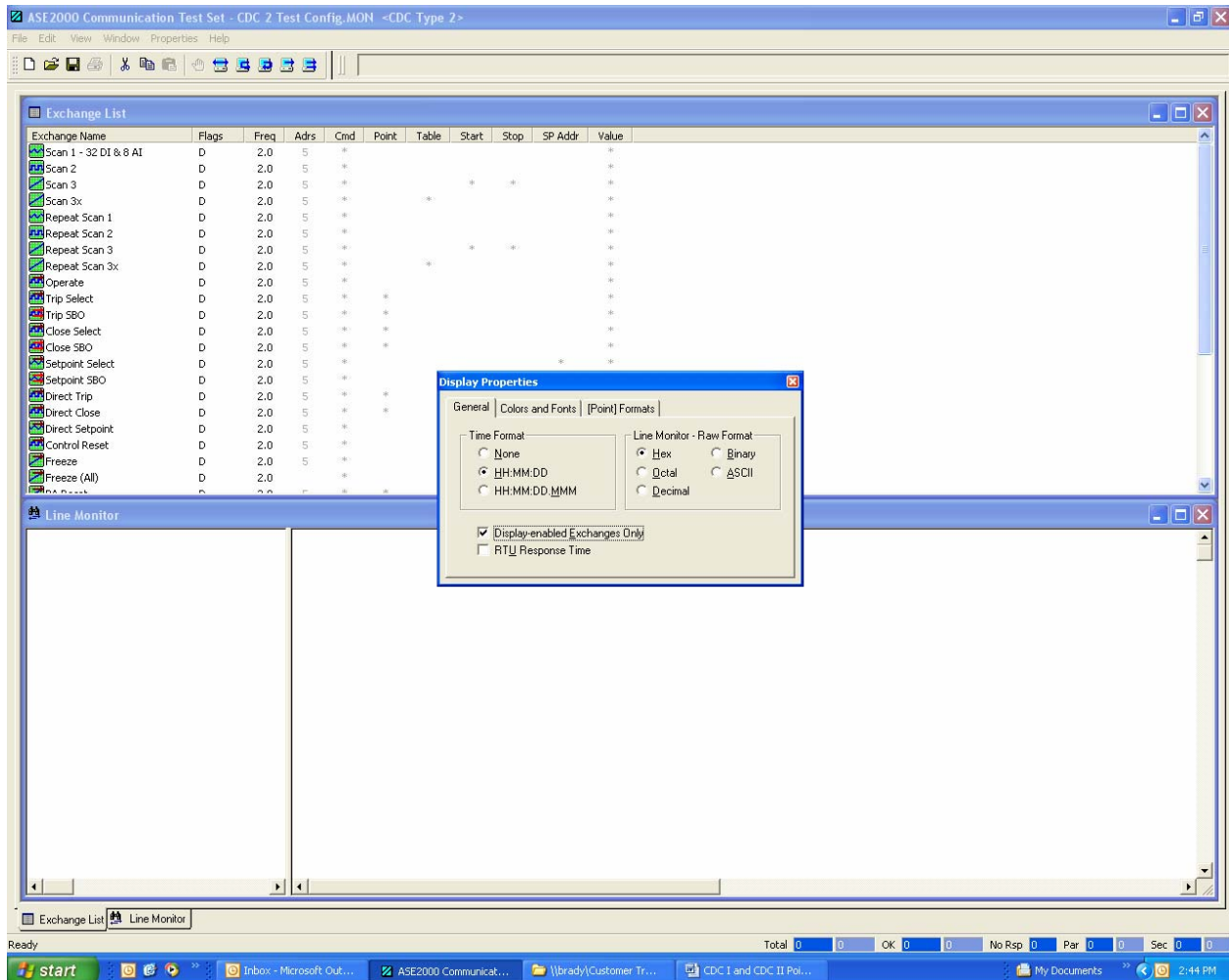
The Protocol-specific Properties dialog box is open, showing the Exchange Defaults tab. It contains a table with the following data:

	Value	Display Format
Adrs	5	Unsigned Dec.
Cmd	*	Unsigned Dec.
Point	*	Hex
Table	*	Unsigned Dec.
Start	*	Hex
Stop	*	Hex
SP Addr	*	Hex

Enter an asterisk (\*) for Value to mean "any".



Next, Select “Properties > Display” and check the box labeled Display-enabled Exchanges Only. This will cause only commands and RTU responses from the designated RTU to be displayed. Exchanges with other RTUs on the same line will be ignored.

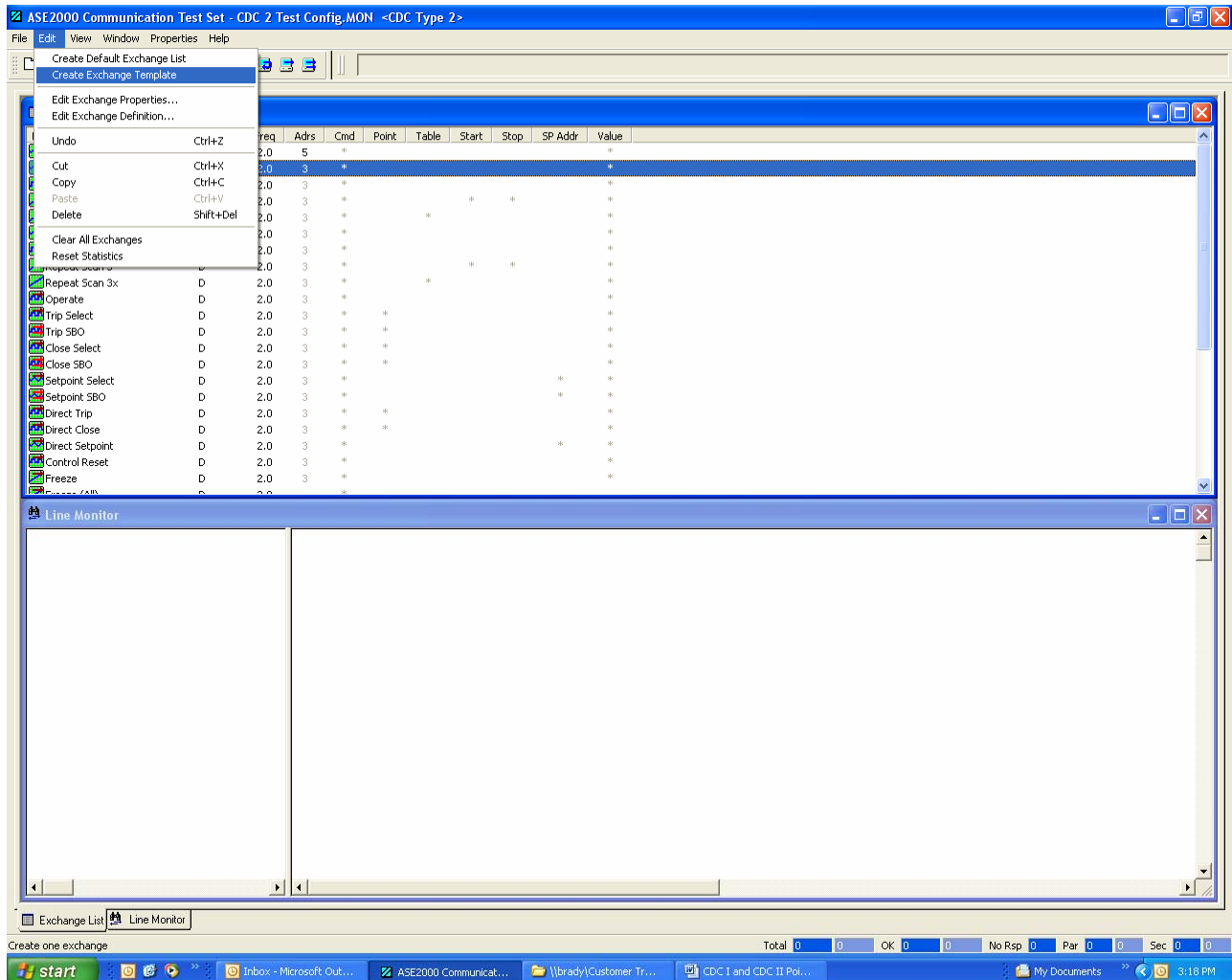




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If it is desirable to display properly formatted data from more than one RTU on the same communication line, it will be necessary to specify additional exchange definitions for those RTUs. This is a fairly simple process that involves defining multiple commands such as SCAN 1 and configuring the exchange for a particular RTU. For example, we defined the SCAN 1 exchange for RTU 3 above. To define a SCAN 1 exchange for RTU 5, use the following procedure:

Select “Edit > Create Exchange Template” and, from the pop-up list, select SCAN 1.



With the second SCAN 1 defined, edit the properties to match the configuration for that RTU.

This same procedure is used to define specific SCAN 2 and SCAN 3 exchanges for multiple RTUs on the same communication line.

