



COM CONFORMITY CHECK (CCC)

Version 2.5

Quick Start

SOFTSTUF INC.

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SOFTWARE STRUCTURE FOR UNLIMITED FUNCTIONALITY

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Preface

This document contains information about COM Conformity Check. Several examples are provided including an example report from a real COMTRADE record, and example report from a COMNAME filenames.

This document is intended for use by any individuals working with COMTRADE, COMTRADE SynchroPhasor and COMNAME records.

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CHAPTER 1

System Requirements and Installation

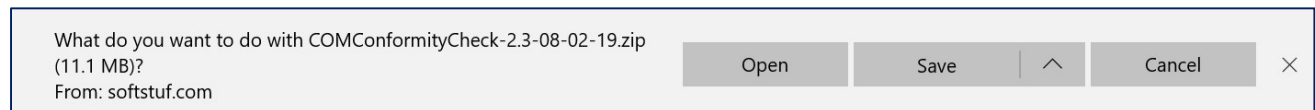
This chapter lists the system requirements needed for installing and running the CCC software. It also describes the installation process.

System Requirements

- Windows XP, 7, 8, 10
- 11 MB of storage available
- 15 MB of RAM available
- Notepad

Download and Install from the Web

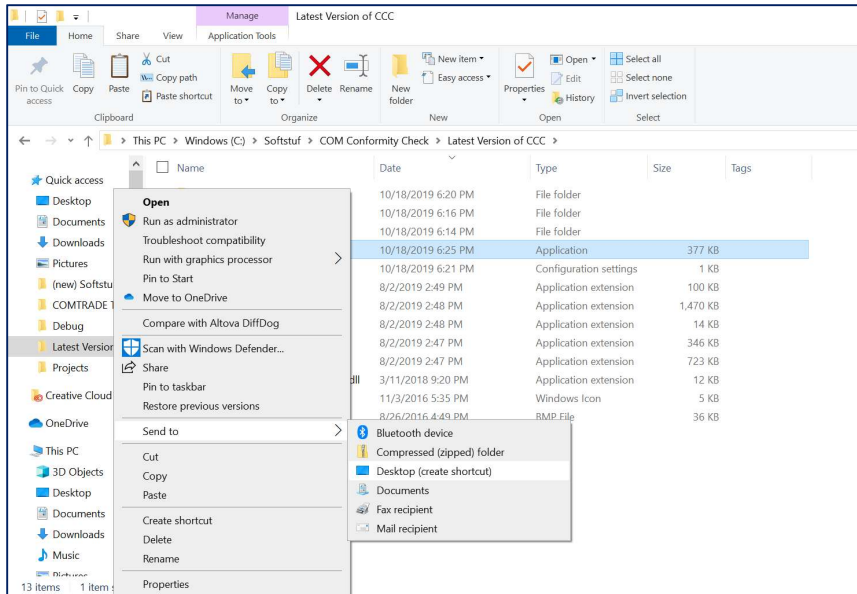
1. To download and install the software from the internet go to www.wavewin.net.
2. Click on the last picture labeled COM Conformity Check (CCC).
3. Enter the username and password provided to you by Softstuf. The username and password are case sensitive.
4. Click on the software link to download the latest executable files.



5. When you download the executable a message similar to the one displayed above (picture may vary depending on the internet browser being used) should show up on your screen. Click on the save button, this should save a zipped folder to your downloads directory.
6. Take the contents of this folder and extract or unzip them to any folder other than "Program Files", or "Program Files (x86)".
7. Create a desktop shortcut for the COM Conformity Check (CCC) executable. From there the application is installed and ready to be used.

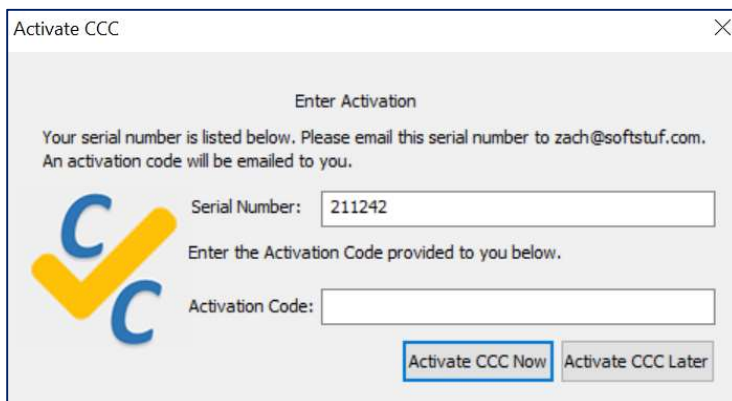
Copy and Install from a USB

1. Create a folder off the root directory called COMConformityCheck.
2. Copy the contents of the folder located on the USB to the folder you have created.
3. Create a desktop shortcut for the COM Conformity Check executable. From there the application is installed and ready to be used. See the picture below for an example.



Activation Code

When the software is first run this dialog will appear. This dialog will continue to appear every time the application is opened until the activation code is entered.



To use the application without activating it click the Activate CCC Later button. This will bring you to the full interface, however the application will only allow the user to run a single file check on the test files provided. There are 20 test files that are provided with the download of CCC. 10 test files for the COMTRADE check, and 10 test files for the COMNAME check. Please do not try to edit the test files.

To receive an activation code please email the serial number listed in the text box labeled "Serial Number:" to zach@softstuf.com. An activation code will be sent to the user promptly. Once the activation code has been entered this dialog will no longer appear and the user will be able to check any file they wish.

CHAPTER 2

Application Buttons and Controls

This chapter describes the purpose of the application and gives a detailed tutorial on how to use the application.

Application Purpose

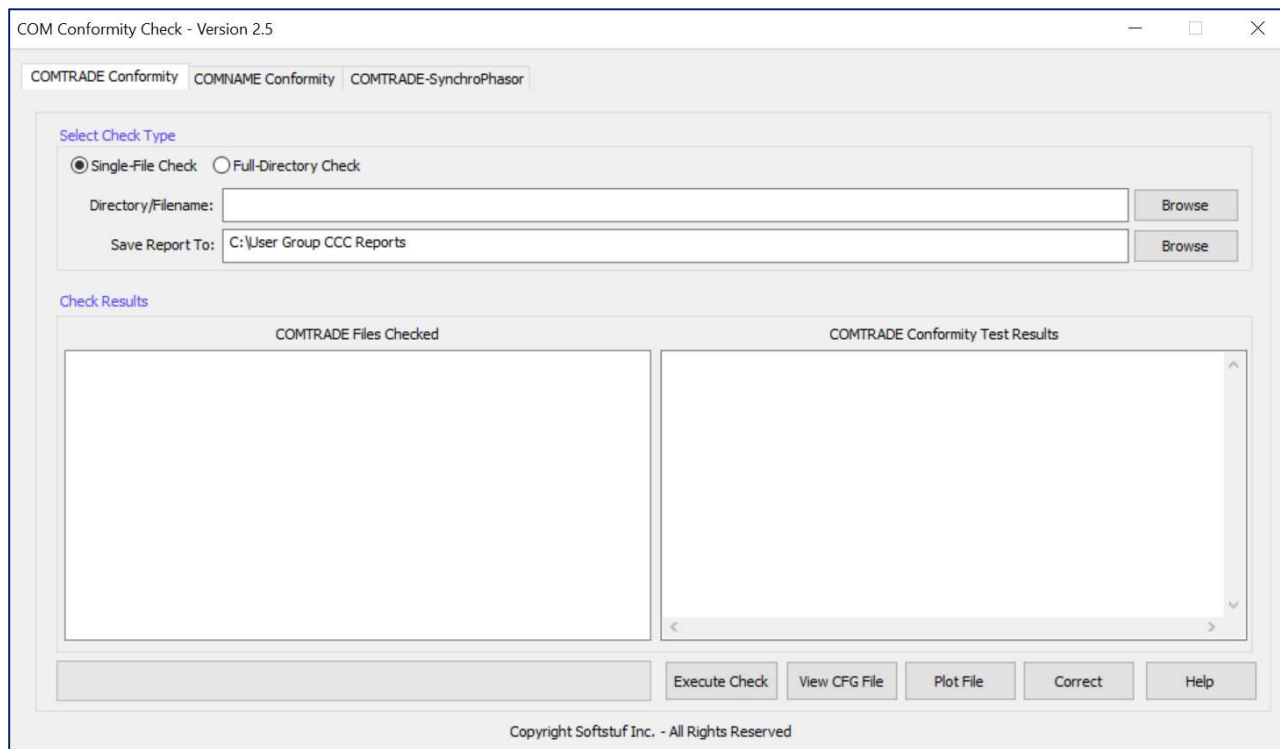
The purpose of the COM Conformity Check (CCC) application is to detect and identify errors in COMTRADE records and COMNAME filenames. By identifying format errors quickly and creating a report file, users will be able to see exactly where the errors are, and how to fix them.

Buttons and Controls

COM Conformity Check has two main tabs. A COMTRADE Conformity tab and a COMNAME Conformity tab. Both tabs are described in the following sections.

COMTRADE Conformity Tab

The COMTRADE conformity tab is highlighted when the application opened. This tab is used for conformance checks of COMTRADE records.



Select Type of Check

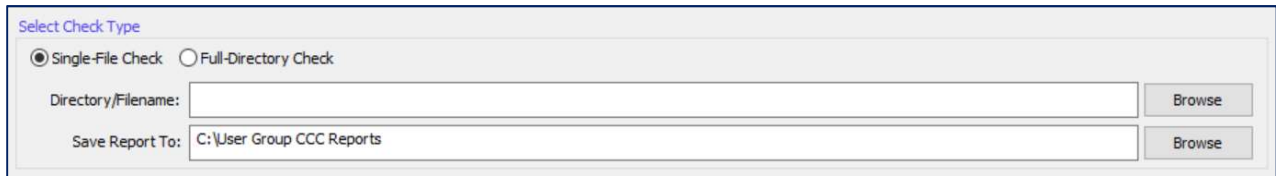
When the application is opened the Single-File check option will be highlighted. To check a single file, click on the radio button labeled “Single-File Check”. To check a full directory, click on the radio button labeled “Full-Directory Check”.



Enter Directory or Filename

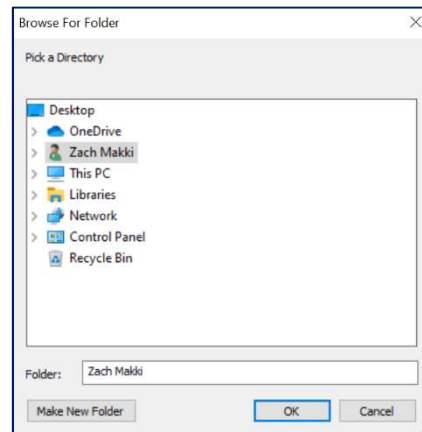
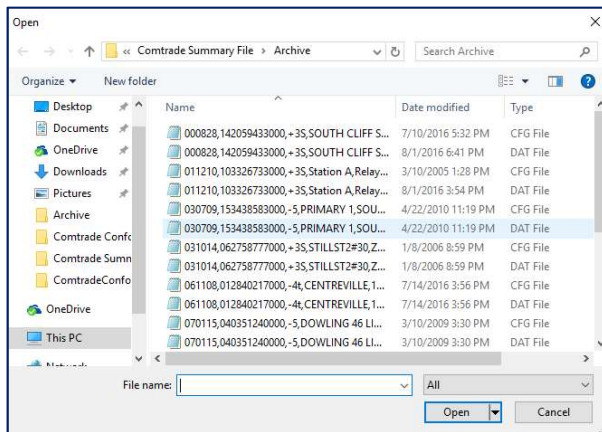
If the Single-File Check has been chosen please enter any file in a COMTRADE record. There are two different types of COMTRADE records. The multi file record which consists of four files, an INF, HDR, CFG, and DAT file. And the single file record which consists of just a CFF file. The user may choose any of these files.

If the Full-Directory check has been chosen please enter any directory that contains COMTRADE records.



A file manager will open when the user clicks the browse button during a single file check.

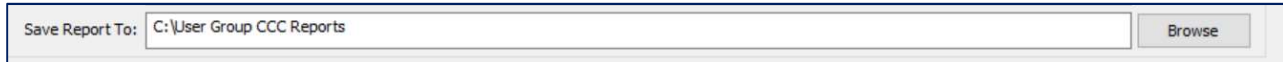
A directory manager will open when the user clicks browse during a directory check. Examples of both are shown below.



If the user wants to increase the size of either the file or directory manager dialog box the program will remember that size and open it to that specified size every time it is re-opened.

Choose Report Directory

In the second text box labeled “Save Report To:” enter or browse for the directory all report files will be saved to. When browse is clicked the directory manager shown above will appear. This functionality remains the same whether a Single-File check or a Full-Directory check has been chosen.



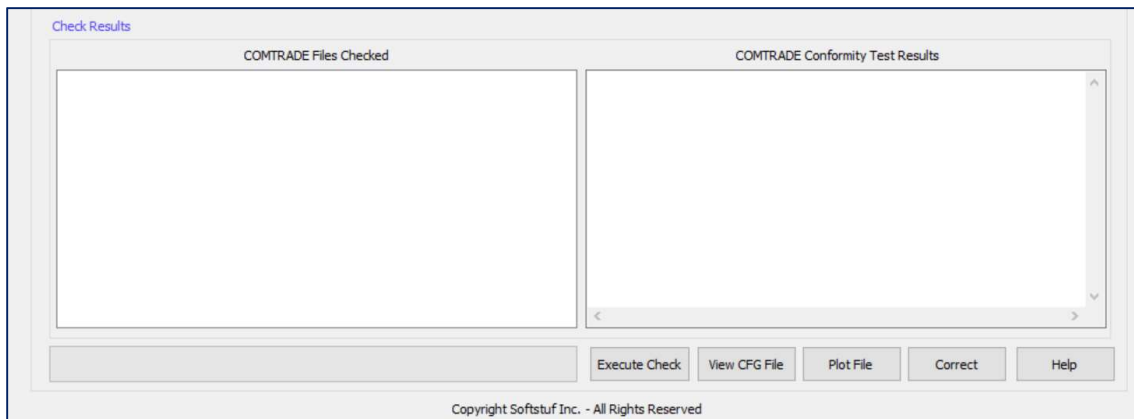
Save Report To: C:\User Group CCC Reports

Execute Check

The “Execute Check” button initiates the conformance check.

If a Single-File check is executed the text box labeled “COMTRADE Conformity Test Results” will fill up with the report as soon as the check is finished. The CFG filename of the COMTRADE record checked will appear in the list box labeled “COMTRADE Files Checked”.

If a Full-Directory check is executed the text box labeled “COMTRADE Conformity Test Results” will fill up with the report of the last file checked in the directory as it reads through, that file will also be highlighted. At the end of the directory check all COMTRADE files in the directory will be listed in the list box labeled “COMTRADE Files Checked” in the order they were checked.



Check Results

COMTRADE Files Checked

COMTRADE Conformity Test Results

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View CFG File

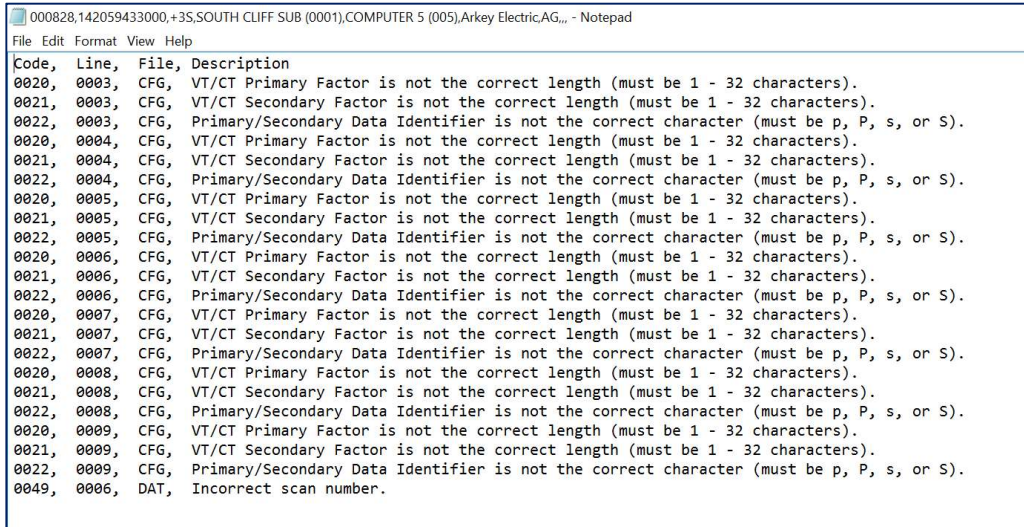
To view the CFG file of the COMTRADE record being checked, single click on the filename in the text box labeled “COMTRADE Files Checked” then click the View CFG File button. This allows the user to visually confirm any errors in the CFG file and correct them.

Plot File

To plot a COMTRADE record with the Wavewin Lite Viewer, single click on the CFG filename in the text box labeled “COMTRADE Files Checked” then click the Plot File button.

View Error Report

There are two ways to view an error report file. The first way is to single click on a CFG filename listed in the list box labeled “COMTRADE Files Checked”. This will display the contents of the error report file in the text box labeled “COMTRADE Conformity Test Results”. The second way to view the error report file is to double click on a CFG filename listed in the list box labeled “COMTRADE Files Checked”. This will open the error report file in notepad. An example of an error report file is shown below.



```
000828,142059433000,+3S,SOUTH CLIFF SUB (0001),COMPUTER 5 (005),Arkey Electric,AG,... - Notepad
File Edit Format View Help
Code, Line, File, Description
0020, 0003, CFG, VT/CT Primary Factor is not the correct length (must be 1 - 32 characters).
0021, 0003, CFG, VT/CT Secondary Factor is not the correct length (must be 1 - 32 characters).
0022, 0003, CFG, Primary/Secondary Data Identifier is not the correct character (must be p, P, s, or S).
0020, 0004, CFG, VT/CT Primary Factor is not the correct length (must be 1 - 32 characters).
0021, 0004, CFG, VT/CT Secondary Factor is not the correct length (must be 1 - 32 characters).
0022, 0004, CFG, Primary/Secondary Data Identifier is not the correct character (must be p, P, s, or S).
0020, 0005, CFG, VT/CT Primary Factor is not the correct length (must be 1 - 32 characters).
0021, 0005, CFG, VT/CT Secondary Factor is not the correct length (must be 1 - 32 characters).
0022, 0005, CFG, Primary/Secondary Data Identifier is not the correct character (must be p, P, s, or S).
0020, 0006, CFG, VT/CT Primary Factor is not the correct length (must be 1 - 32 characters).
0021, 0006, CFG, VT/CT Secondary Factor is not the correct length (must be 1 - 32 characters).
0022, 0006, CFG, Primary/Secondary Data Identifier is not the correct character (must be p, P, s, or S).
0020, 0007, CFG, VT/CT Primary Factor is not the correct length (must be 1 - 32 characters).
0021, 0007, CFG, VT/CT Secondary Factor is not the correct length (must be 1 - 32 characters).
0022, 0007, CFG, Primary/Secondary Data Identifier is not the correct character (must be p, P, s, or S).
0020, 0008, CFG, VT/CT Primary Factor is not the correct length (must be 1 - 32 characters).
0021, 0008, CFG, VT/CT Secondary Factor is not the correct length (must be 1 - 32 characters).
0022, 0008, CFG, Primary/Secondary Data Identifier is not the correct character (must be p, P, s, or S).
0020, 0009, CFG, VT/CT Primary Factor is not the correct length (must be 1 - 32 characters).
0021, 0009, CFG, VT/CT Secondary Factor is not the correct length (must be 1 - 32 characters).
0022, 0009, CFG, Primary/Secondary Data Identifier is not the correct character (must be p, P, s, or S).
0049, 0006, DAT, Incorrect scan number.
```

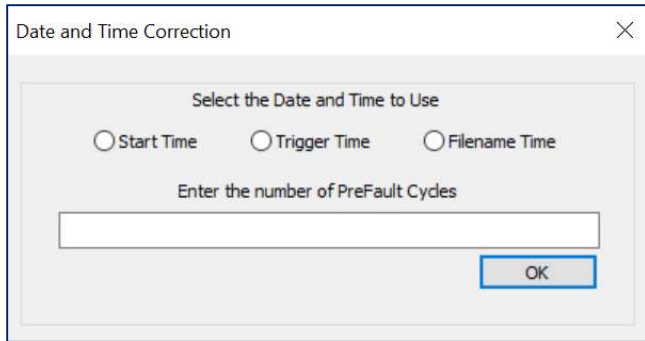
Correct

To correct a COMTRADE record single click on the CFG filename in the text box labeled “COMTRADE Files Checked” then click the button labeled “Correct”. If CCC can correct the record it will create a new COMTRADE record with the same name as the original record with a “,CCC” added to the end of the filename. For example, if the record to be corrected is named “Record1.CFG” then the corrected record will be called “Record1,CCC.CFG”. Once the new record has been created it will automatically be checked and the filename will be added to the “COMTRADE Files Checked” text box.

If the error cannot be corrected then CCC will prompt a dialog box informing the user why the record could not be corrected.

CCC currently supports correction of error codes 54, and 91. The full list of error codes can be found in chapter 4.

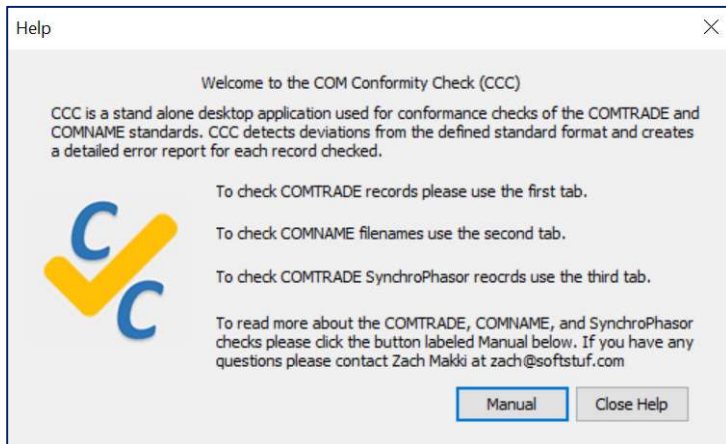
If a record contains error codes 54 or 91 when a user clicks the “Correct” button the dialog box displayed below will appear.



This allows the user to choose the time tag in the record they consider the most trustworthy, this will be the time that is used to correct the record. The user can also specify the amount of Prefault cycles between the start and trigger time tags.

Help

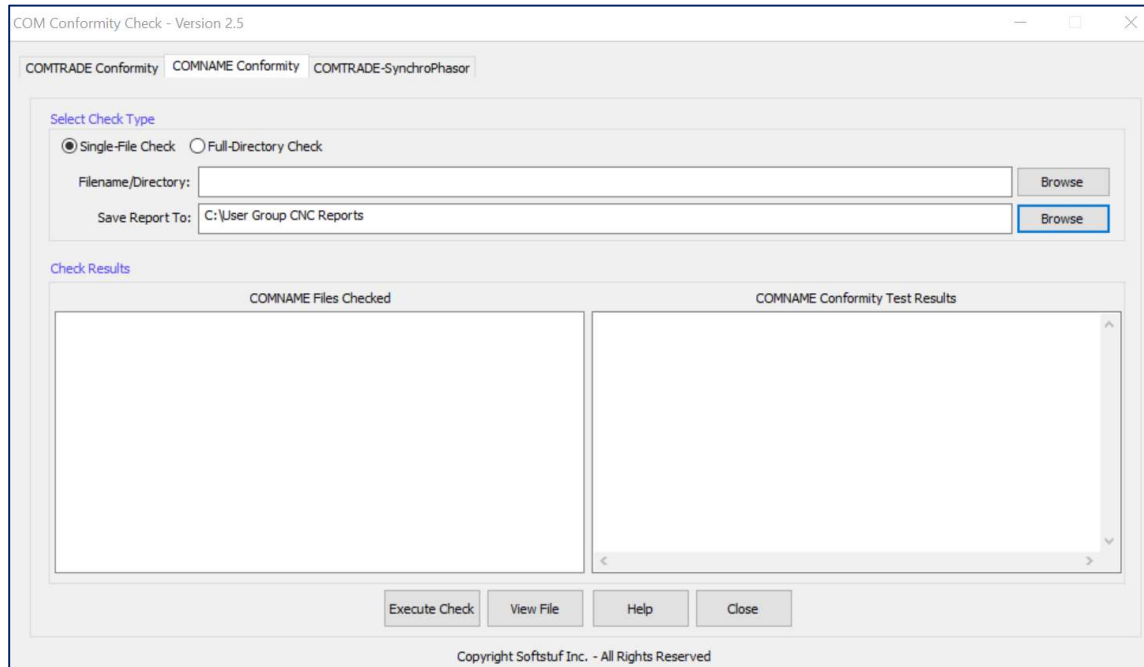
To view the Help Dialog box, click the "Help" button. The Help dialog box gives a brief description of the application and allows the user to view the application manual.



To view the application manual, click the button labeled "Manual". To close the help dialog, click the button labeled "Close Help".

COMNAME Conformity Tab

When the tab labeled “COMNAME Conformity” is selected the following interface will appear. This tab is used to check the conformance of COMNAME filenames.



Select Type of Check

When the application is first opened the Single-File check option will be highlighted. To check a single file, click on the button labeled “Single-File Check”. To check a full directory, click on the button labeled “Full-Directory Check”.



Enter Filename or Directory

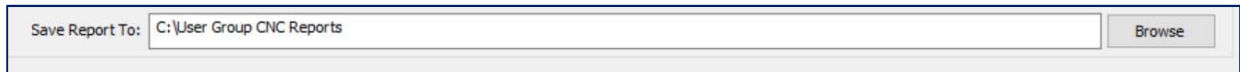
If the Single-File check has been chosen, enter or browse for any file with a COMNAME filename. Any time sequence data file should have a COMNAME filename.

If the Full-Directory check has been chosen, enter or browse for the directory to be checked.



Choose Report Directory

In the second text box labeled “Save Report To:” enter or browse for the directory all report files will be saved to. When browse is clicked the directory manager shown above will appear. This functionality remains the same whether a Single-File check or a Full-Directory check has been chosen.



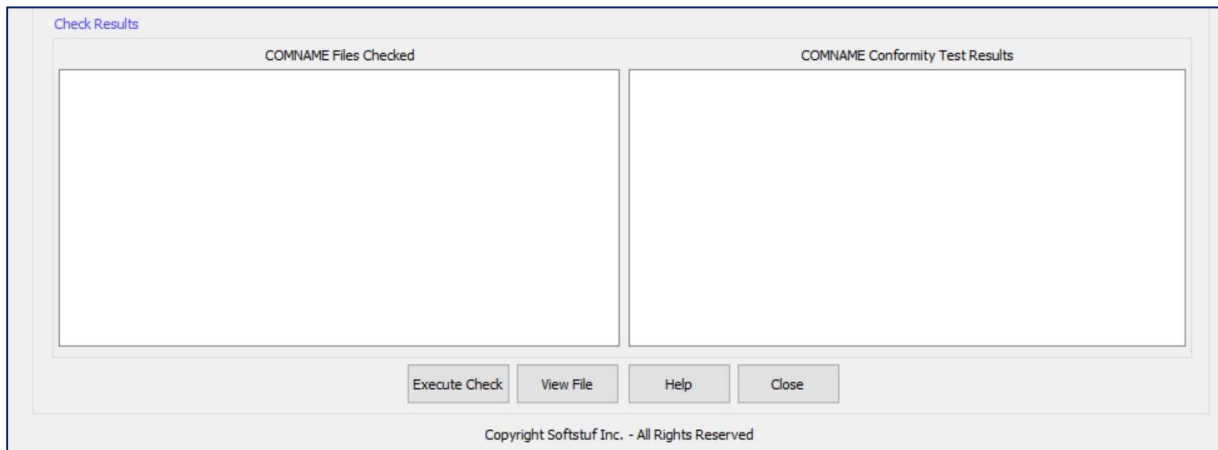
The image shows a software interface element for saving reports. It consists of a label "Save Report To:" followed by a text input field containing the path "C:\User Group CNC Reports". To the right of the text field is a button labeled "Browse".

Execute Check

The “Execute Check” button initiates the conformance check.

If a single file check is executed the text box labeled “COMNAME Conformity Test Results” will fill up with the report as soon as the check is finished. The filename checked will appear in the list box labeled “COMNAME Files Checked”.

If a full directory check is executed the text box labeled “COMNAME Conformity Test Results” will fill up with the report of the last file checked in the directory as it reads through, that file will also be highlighted. At the end of the directory check all COMNAME filenames in the directory will be listed in the list box labeled “COMNAME Files Checked” in the order they were checked.



The image shows a dialog box titled "Check Results". It contains two large, empty text boxes. The left box is labeled "COMNAME Files Checked" and the right box is labeled "COMNAME Conformity Test Results". Below these boxes are four buttons: "Execute Check", "View File", "Help", and "Close". At the bottom of the dialog, there is a copyright notice: "Copyright Softstuf Inc. - All Rights Reserved".

View File

To view a file single, click on the filename in the text box labeled “COMNAME Files Checked” then click the View File button.

View Error Report

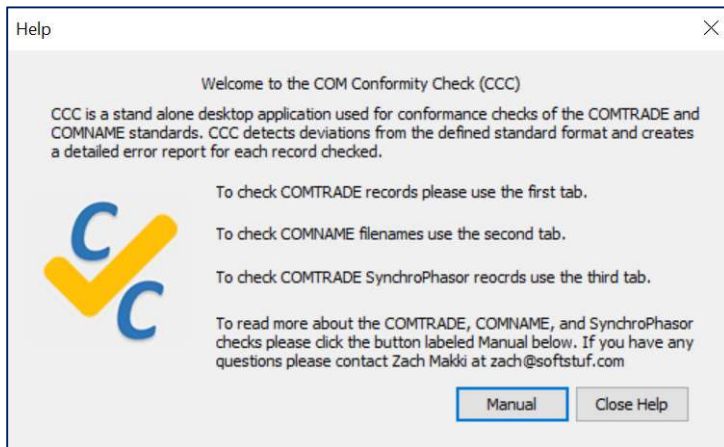
There are two ways to view an error report file. The first way is to single click on a filename listed in the list box labeled “COMNAME Files Checked”. This will display the contents of the

error report file in the text box labeled “COMNAME Conformity Test Results”. The second way to view the error report file is to double click on a filename listed in the list box labeled “COMNAME Files Checked”. This will open the error report file in notepad. An example of an error report file is shown below.

```
File Edit Format View Help
Log, Field, Description
038, 000, Filename is not complaint with the COMNAME standard.
001, 001, The Start Date must be 6 digits.
043, 002, The start time must be numeric.
009, 003, The Time Code must be between 1 and 7 digits.
```

Help

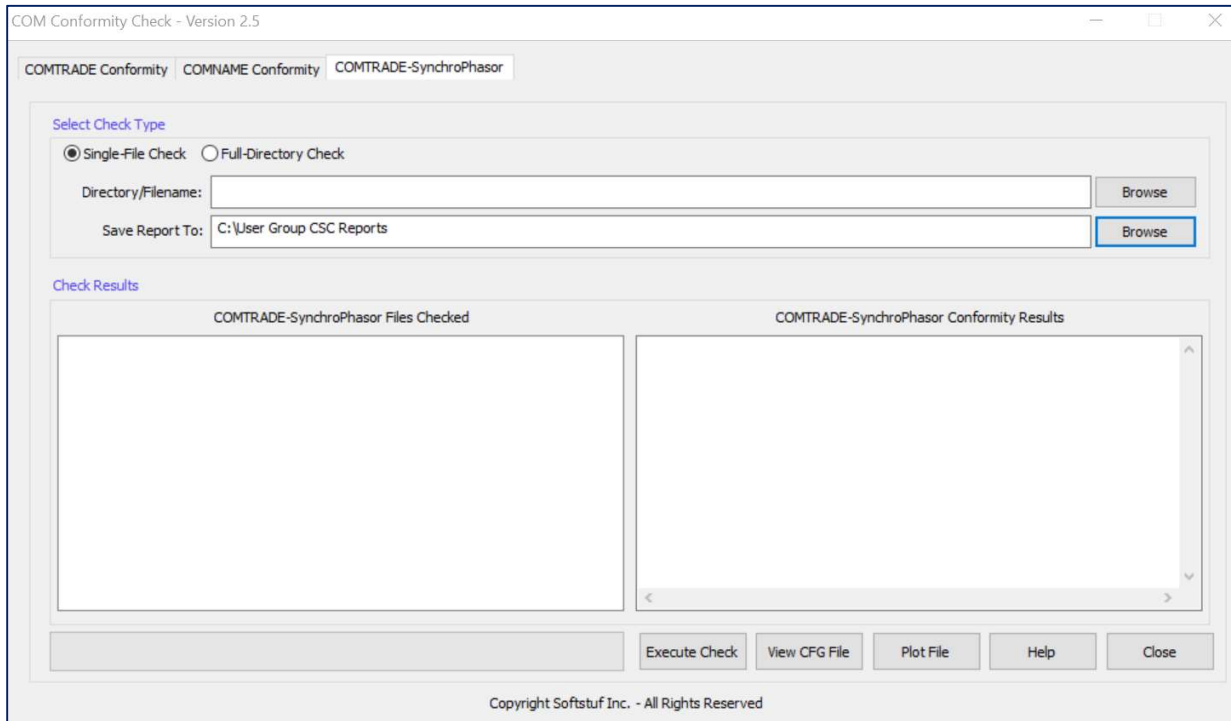
To view the Help Dialog box, click the “Help” button. The Help dialog box gives a brief description of the application and allows the user to view the application manual.



To view the application manual, click the button labeled “Manual”. To close the help dialog, click the button labeled “Close Help”.

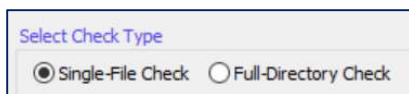
COMTRADE SynchroPhasor Conformity Tab

When the tab labeled “COMTRADE SynchroPhasor” is selected the following interface will appear. This tab is used to check the conformance of SynchroPhasor records stored in the COMTRADE standard template.



Select Type of Check

When the application is first opened the Single-File check option will be highlighted. To check a single file, click on the button labeled “Single-File Check”. To check a full directory, click on the button labeled “Full-Directory Check”.

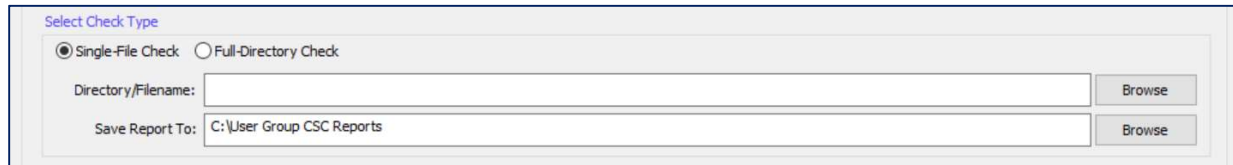


Enter Directory or Filename

If the Single-File Check has been chosen please enter any file in a COMTRADE SynchroPhasor record. There are two different types of COMTRADE SynchroPhasor records. The multi file record which consists of four files, an INF, HDR, CFG, and DAT file. And the single file record which consists of just a CFF file. The user may choose any of these files. Please note that if a non-SynchroPhasor COMTRADE record is chosen the application will check it as a normal

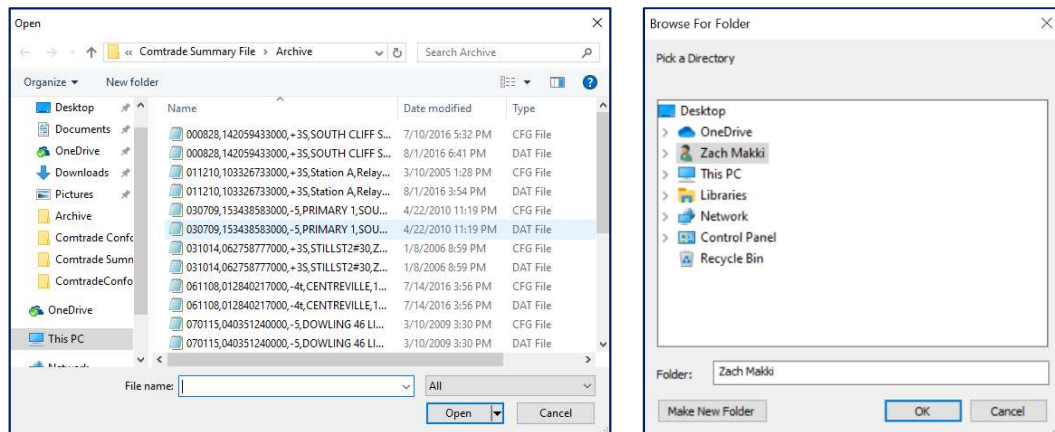
COMTRADE record but will add a message to the error report indicating that it is not a SynchroPhasor record.

If the Full-Directory check has been chosen please enter any directory that contains COMTRADE SynchroPhasor records.



A file manager will open when the user clicks the browse button during a single file check.

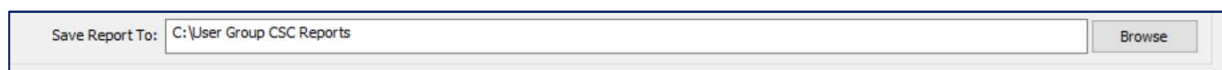
A directory manager will open when the user clicks browse during a directory check. Examples of both are shown below.



If the user wants to increase the size of either the file or directory manager dialog box the program will remember that size and open it to that specified size every time it is re-opened.

Choose Report Directory

In the second text box labeled “Save Report To:” enter or browse for the directory all report files will be saved to. When browse is clicked the directory manager shown above will appear. This functionality remains the same whether a Single-File check or a Full-Directory check has been chosen.

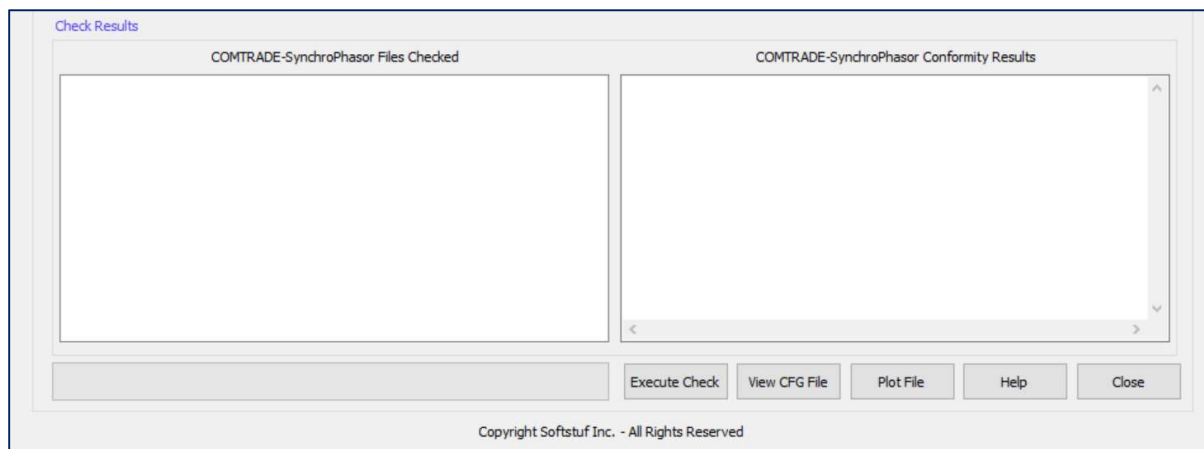


Execute Check

The “Execute Check” button initiates the conformance check.

If a Single-File check is executed the text box labeled “COMTRADE-SynchroPhasor Conformity Results” will fill up with the report as soon as the check is finished. The CFG filename of the COMTRADE SynchroPhasor record checked will appear in the list box labeled “COMTRADE-SynchroPhasor Files Checked”.

If a Full-Directory check is executed the text box labeled “COMTRADE-SynchroPhasor Conformity Results” will fill up with the report of the last record checked in the directory as it reads through, that record will also be highlighted. At the end of the directory check all COMTRADE SynchroPhasor records in the directory will be listed in the list box labeled “COMTRADE-SynchroPhasor Files Checked” in the order they were checked.



View CFG File

To view the CFG file of the COMTRADE SynchroPhasor record being checked, single click on the filename in the text box labeled “COMTRADE-SynchroPhasor Files Checked” then click the View CFG File button. This allows the user to visually confirm any errors in the CFG file and correct them.

Plot File

To plot a COMTRADE SynchroPhasor record with the Wavewin Lite Viewer, single click on the CFG filename in the text box labeled “COMTRADE-SynchroPhasor Files Checked” then click the Plot File button.

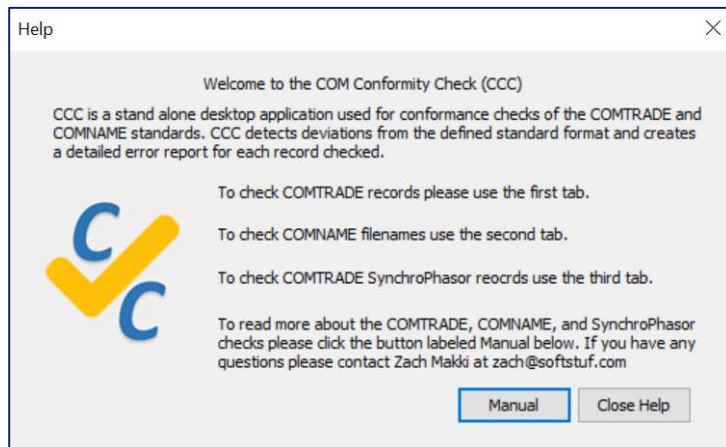
View Error Report

There are two ways to view an error report file. The first way is to single click on a CFG filename listed in the list box labeled “COMTRADE-SynchroPhasor Files Checked”. This will display the contents of the error report file in the text box labeled “COMTRADE-SynchroPhasor Conformity Results”. The second way to view the error report file is to double click on a CFG filename listed in the list box labeled “COMTRADE-SynchroPhasor Files Checked”. This will open the error report file in notepad. An example of an error report file is shown below.

Code	Line	File	Error Description
0054	0173	CFG	Fault time is incorrect.
0086	0015	CFG	In a COMTRADE-SynchroPhasor record channel pairs must be successive, error occurred on analog channel 13
0000	0000	DAT	No errors.

Help

To view the Help Dialog box, click the “Help” button. The Help dialog box gives a brief description of the application and allows the user to view the application manual.



To view the application manual, click the button labeled “Manual”. To close the help dialog, click the button labeled “Close Help”.

CHAPTER 3

List of Possible Program Errors

Possible Errors

1. If the CFG file cannot be opened because the application could not find the file, a message box will appear that says, "Filename cannot be read, please enter a valid filename".
2. If the total channels are higher than 2048 a message box will appear that says, "File is too large to read."
3. If the DAT file cannot be opened because the application could not find the file, a message box will appear that says, "DAT File cannot be found".
4. If the text box labeled "COMTRADE Conformity Test Results" fails to be filled up a message box will appear that says, cannot find report. This is because the directory the report is saved in doesn't exist.
5. If the text box labeled "COMNAME Conformity Test Results" fails to be filled up a message box will appear that says, cannot find report. This is because the directory the report is saved in doesn't exist.
6. If the text box labeled "COMTRADE-SynchroPhasor Conformity Results" fails to be filled up a message box will appear that says, cannot find report. This is because the directory the report is saved in doesn't exist.
7. If a report directory is not entered, for all three tabs, a message box will appear informing the user that the check cannot be ran without a report directory specified.
8. If the program cannot open any error reports the computer it is running on may not have Notepad installed.
9. If a single file check is being used and a file from a new directory has been entered into the "Filename/Directory" text box but has not been executed yet the "View CFG file", "Plot File" and, "View File" buttons will not work. This is because the directory name of the file chosen is used to find and open the files. An example with the directory name circled in red is listed below. Any file from this directory can be opened using the View CFG File or View File button until a file from a new directory is selected. Once the file with the new directory is executed the list of files will be cleared.



CHAPTER 4

List of Possible COMTRADE Conformity Errors

CFG File Possible Errors

1. Incorrect number of columns (must be 3).
2. Station Name is not the correct length (must be 1 - 64 characters).
3. Recording Device Identification name incorrect length (must be 1 - 64 characters).
4. Revision Year is incorrect (must be 4 digits).
5. Incorrect number of columns (must be 3).
6. Total Number of Channels is incorrect (must be 1 - 6 characters).
7. Analog Channels is incorrect (must be 2 - 7 characters and must end with the character A).
8. Digital Channels is incorrect (must be 2 - 7 characters and must end with the character D).
9. Analog Channels: Incorrect number of columns (must be 13).
10. Analog Channels: Incorrect Analog Channel Number (must be successive and sequential).
11. Analog Channels: Channel Identifier is over 128 characters long.
12. Analog Channels: Channel Phase Identification is over 2 characters long.
13. Analog Channels: Circuit Component is over 64 characters long.
14. Analog Channels: Channel Units is not the correct length (must be 1 - 32 characters).
15. Analog Channels: Channel Multiplier is not the correct length (must be 1 - 32 characters).
16. Analog Channels: Channel Offset is not the correct length (must be 1 - 32 characters).
17. Analog Channels: Channel Time Shew is not the correct length (must be between 1 - 32 characters).
18. Analog Channels: Range Minimum is not the correct length (must be 1 - 13 characters).
19. Analog Channels: Range Maximum is not the correct length (must be 1 - 13 characters).
20. Analog Channels: VT/CT Primary Factor is not the correct length (must be 1 - 32 characters).
21. Analog Channels: VT/CT Secondary Factor is not the correct length (must be 1 - 32 characters).
22. Analog Channels: Primary/Secondary Data Identifier is not the correct character (must be p, P, s, or S).
23. Analog Channels: Missing analog channel.
24. Digital Channels: Incorrect number of columns (must be 5).
25. Digital Channels: Incorrect Digital Channel Number.
26. Digital Channels: Channel Identifier is not the correct length (must be 1 - 32).
27. Digital Channels: Channel Phase Identifier cannot be longer than 2 characters long.

28. Digital Channels: Circuit Component cannot be longer than 64 characters long.
29. Digital Channels: Normal state must be either 0 or 1.
30. Digital Channels: Incorrect digital channel count
31. Frequency Line: Incorrect number of columns (must be 1).
32. Frequency Line: Line Frequency is not the correct length (must be 1 - 32 characters).
33. Sampling Rate: Incorrect number of columns (must be 1 or 2).
34. Sampling Rate: Sampling Rate is not the correct length (must be 1 - 3 characters).
35. Sampling Rate Line 2: Incorrect number of columns (must be 2).
36. Sampling Rate Line 2: Sampling Rate is not the correct length (must be 1 - 32 characters).
37. Sampling Rate Line 2: End Sample is not the correct length (must be 1 - 10 characters).
38. Date and Time Lines: Incorrect number of columns (must be 2).
39. Date and Time Lines: Day is incorrect (must be 1 - 31).
40. Date and Time Lines: Month is incorrect (must be 1 - 12).
41. Date and Time Lines: Year is incorrect (must be 4 digits).
42. Date and Time Lines: Time slot 1 is incorrect (must be 1 - 23).
43. Date and Time Lines: Time slot 2 is incorrect (must be 2 - 59).
44. Date and Time Lines: Time slot 3 is incorrect (must be 6 - 9 integers long).
45. Date and Time Lines: Incorrect number of columns (must be 2).
46. File Type Line: Incorrect number of columns (must be 1).
47. File Type Line: File type is the incorrect length (must be 5 - 8 characters).
53. Date and Time Lines: Fault date is incorrect.
54. Date and Time Lines: Fault time is incorrect.
55. 1991 standard: Analog channels must be 10 columns.
56. 1991 standard: Digital channels must be 3 columns.
57. 1991 standard: Fault year must be 2 or 4 digits.
58. First Line: Illegal revision year (must be 1991, 1999, or 2013).
59. Digital Channels: Normal state is missing.
60. Analog or digital channel count is incorrect program cannot check the rest of the file.
61. In COMTRADE files each line must end with a carriage return and line feed.
62. 2013 standard: Time stamp incorrect length (must be 1 - 32).
63. 2013 standard: Time code field 1 incorrect length (must be 1 - 6).
64. 2013 standard: Time code field 2 incorrect length (must be 1 - 6).
65. 2013 standard: Time quality code incorrect length (must be 1).
66. 2013 standard: Leap second indicator incorrect length (must be 1).
68. Analog or digital channel count incorrect the program cannot check the rest of the file.
70. Cannot have blank lines in-between CFG file information.
71. Scan number missing or invalid, cannot continue checking program.
72. Analog channel offset must be numeric.
73. Incorrect number of columns (must be 2 for 1991 version).
76. Time information and local time information missing.

- 77. Time Quality of samples information missing.
- 78. Crucial information missing from CFG file, cannot continue checking file.
- 79. Cannot check DAT file (crucial information missing from CFG file).
- 80. This application can only read COMTRADE files.
- 81. There cannot be more than 3 time slots, one for the hour, one for the minute, and one for the second and millisecond.
- 82. The total channels field can only contain numeric values.
- 83. There cannot be more than one carriage return at the end of each line, CCC will not attempt to read the rest of this record.
- 84. In the 1991 revision the revision year should not be listed, there are only two columns in the first line. One for the substation and one for the device.
- 91. The time difference between the start time and the trigger time is longer than the duration of the recording in the DAT file.

DAT File Possible Errors

- 48. Incorrect number of channels (correct number is equal to the total channels listed in the CFG file).
- 49. Incorrect scan number (scan numbers must be successive and sequential).
- 50. Incorrect number of scans (scan number is specified in CFG file).
- 51. Binary file incorrect size.
- 52. Incorrect scan number in binary file.
- 60. First number in the Binary DAT file is not 1 (DAT file type listed in the CFG file may be incorrect.)
- 67. First sample number in the DAT file cannot be 0.
- 69. Cannot check DAT File (analog or digital count is incorrect in CFG file).
- 74. DAT file type does not match up with DAT file separator.
- 75. Illegal character at end of DAT file.

CHAPTER 5

List of Possible COMNAME Conformity Errors

List of Possible Errors

1. The Start Date must be 6 digits.
2. The first two digits of the start date must be between 00 - 99.
3. The second two digits of the start date must be between 01 - 12.
4. The last two digits of the start date must be between 01 - 31.
5. The Start Time must be between 4 and 12 digits.
6. The first two digits of the start time must be between 00 - 23.
7. The second two digits of the start time must be between 00 - 59.
8. The third two digits of the start time must be between 00 - 60.
9. The Time Code must be between 1 and 7 digits.
10. If the Time Code is one character in length that character must be a 0.
11. If the Time Code is two characters in length the first character must be the sign or 0.
12. If the Time Code is two characters in length the second character must be a digit or the letter T.
13. If the Time Code is three characters in length the first character must be the sign.
14. If the Time Code is three characters in length the second character must be a digit.
15. If the Time Code is three characters in length the last character must be a digit or the letter T.
16. If the Time Code is four characters in length the first character must be the sign.
17. If the Time Code is four characters in length the second character must be a digit.
18. If the Time Code is four characters in length the third character must be a digit or the letter H.
19. If the Time Code is four characters in length the fourth character must be the letter H or the letter T.
20. If the Time Code is five characters in length the first character must be the sign.
21. If the Time Code is five characters in length the second character must be a digit.
22. If the Time Code is five characters in length the third character must be a digit or the letter H.
23. If the Time Code is five characters in length the fourth character must be a digit or the letter H.
24. If the Time Code is five characters in length the fifth character must be the letter T or the letter M.
25. If the Time Code is six characters in length the first character must be the sign.
26. If the Time Code is six characters in length the second character must be a digit.
27. If the Time Code is six characters in length the third character must be a digit or the letter H.

28. If the Time Code is six characters in length the fourth character must be the letter H or a digit.
29. If the Time Code is six characters in length the fifth character must be a digit or the letter M.
30. If the Time Code is six characters in length the sixth character must be a digit or the letter M or the letter T.
31. If the Time Code is seven characters in length the first character must be the sign.
32. If the Time Code is seven characters in length the second character must be a digit.
33. If the Time Code is seven characters in length the third character must be a digit or the letter H.
34. If the Time Code is seven characters in length the fourth character must be the letter H or a digit.
35. If the Time Code is seven characters in length the fifth character must be a digit.
36. If the Time Code is seven characters in length the sixth character must be the letter M.
37. If the Time Code is seven characters in length the seventh character must be the letter T.
38. Filename is not complaint with the COMNAME standard.
39. There must be a field for the Substation Identifier.
40. There must be a field for the Device Identifier.
41. There must be a field for the Company Name.
42. The start date must be numeric.
43. The start time must be numeric.

CHAPTER 6

List of COMTRADE-SynchroPhasor Conformity Errors

1. In a COMTRADE-SynchroPhasor record channel pairs must be successive.
2. In a COMTRADE-SynchroPhasor record all channel pairs must include an A,M,R, or I in the phase identification field.
3. In a COMTRADE-SynchroPhasor record in the analog channel identifier the <station_name:channel_name> is restricted to 33 characters.
4. In a COMTRADE-SynchroPhasor record each phasor channel must have a channel pair to represent the complex number.
5. In a COMTRADE-SynchroPhasor record in the digital channel identifier the station_name:channel_name is restricted to 33 characters.

The COMTRADE-SynchroPhasor check will also check for all the possible errors listed in Chapter 4.

CHAPTER 7

Contact Information and Technical Support

Technical Support

If you have any questions about COM Conformity Check contact Zach Makki, Monday through Friday between 9 AM and 6 PM.

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Email: zach@softstuf.com