ScanTel

SCANTEL.EXE

Installation and Operation
V1.03

01/2018

Scanivalve

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Program Information

This program, ScanTel, is designed to replace the Binary Telnet program, BTEL.EXE. ScanTel is a support program for all DSM DSA, RAD, MPS and DTS modules. It supports communication in ASCII or BINARY formats. SCANTEL is capable of running in Windows XP, Windows 7, and Windows 10 operating systems.

NOTE: A user should have a good working knowledge of the hardware and software of the device used with this software. Please refer to the applicable hardware and software manuals for information on the scan speeds and data types available.

Installation

ScanTel is available on a disk or by download from the Scanivalve Corp website: www.scanivalve.com.

Download from Scanivalve website

The installation s program is in a zip file named ScanTel.zip. The file contains the installation programs:
ScanTelinstall.msi
Setup.exe.

1. Unzip the files to a temporary folder
2. Select: Start
3. Select: Run
4. Highlight the file: setup.exe in the folder where the ScanTel installation files are stored and click OK to start the installation.

Installation from install disk

1. Insert the CD in a CD drive.

If the installation does not autorun

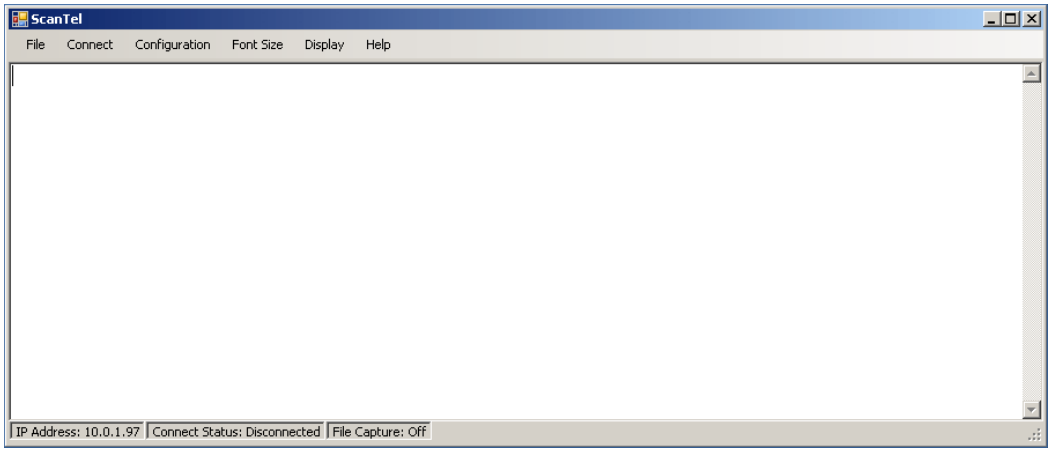
2. Select: Start
3. Select: Run
4. Highlight the file: setup.exe on the CD and click OK to start the installation.

Start the ScanTel Program

Click on the ScanTel icon on the desktop.

Operation

To start the program, click on the desktop icon. The main window will open:



This window has six drop down menu choices:

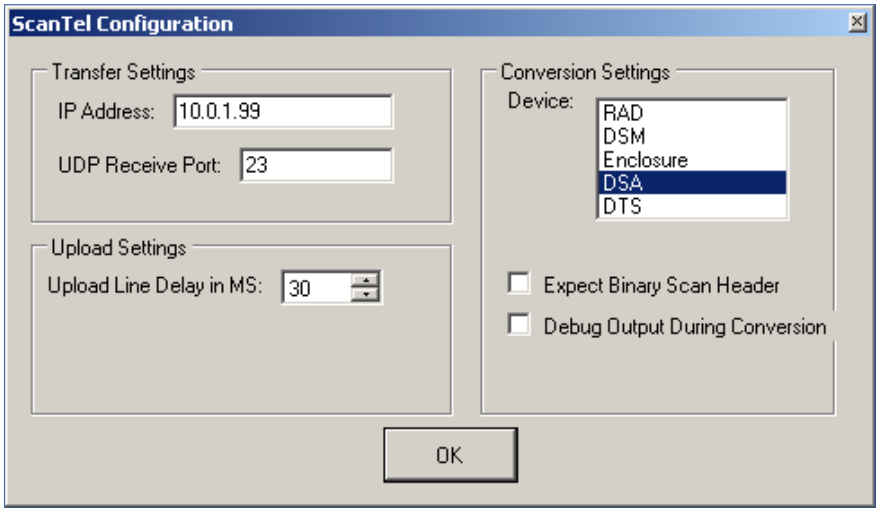
File	This menu contains the commands for the main program tasks. This menu will be used tp start and stop file captures, upload files, and convert
Connect	Click this to connect to the Scanivalve Device. The device type and IP Address must be specified in the configuration window before Connect is selected
Configuration	Click this to set the Device Type, IP Address, and UDP Receive Port
Screen	Click this to set the font size and color in the main window
Display	This menu option contains the commands to clear the screen or clear the byte counter.
Help	Click this to verify the ScanTel version number

This window has a status bar with the following information

IP Address	The IP address of the device
Connect Status	Connected or Disconnected
File Capture	The destination file name will be displayed when a file capture is started. This window will only show the file name. It will not show the path or the capture type.
Byte Count	Displays the number of Bytes collected during the current file capture.

Configure ScanTel

Click Configuration, the configuration window will open



Device	The device type. This is very important as there are differences in the packets returned by each device.
Expect Binary Header	Check this box if a Binary header will be included in the data packet.
Debug Output During Conversion	Check this box if a file conversion fails and retry the conversion.
IP Address	The IP address of the Device Specified
UDP Receive Port	Identifies the port where the device will transmit Binary UDP packets.
Upload Line Delay in MS	This should be set to regulate the transmission speed of a file upload to the device. This can be set from 0 to 100 milliseconds.

1. Select the Device Type by left clicking one of the modules listed in the window.
2. If a Binary header will be included in the data packet, click the Expect Binary Header box
3. Enter the IP Address of the device
4. Enter the UDP port number for the data transmission
5. Click OK to save the settings. The settings will be shown in the Status bar.

Connect

Click Connect to connect to the device. The Status Bar should show the connection.

Configure the Device

Binary UDP Data Transfers

In order for the ScanTel program to acquire UDP Binary data from a DSA, RAD, Enclosure, DSM, or DTS module, the module must be configured correctly. Changes to the module configuration may be made in the ScanTel window after the connection is made. The recommended settings for each type module are listed below. The setting s for PERIOD and AVERAGE reflect the maximum possible scan speed. This speed may not be obtained in all systems.

DSA 3000 Series

SET PERIOD 325
SET AVG 1
SET BIN 1
SET FORMAT 0
SET PAGE 0
SET NETTYPE UDP

NOTE: When the NETTYPE variable is modified, the module must be rebooted before the change takes effect.

DSA 3200 Series

SET PERIOD 125
SET AVG 1
SET BIN 1
SET FORMAT 0
SET PAGE 0
SET TIME 0
SET PORT 23
SET HOST <IP Address> <port> U Where: IP Address is the IP address of the host computer.
Port is the UDP data port
U is UDP data transmission

NOTE: When the HOST variable is modified, the module must be rebooted before the change takes effect.

DTS3250 and DTS4050 Series

SET PERIOD 325
SET AVG 1
SET BIN 1
SET FORMAT 0
SET PAGE 0
SET TIME 0
SET HOST <IP Address> <port> U Where: IP Address is the IP address of the Host Computer.
Port is the UDP data port to be used
U is UDP data transmission

NOTE: When the HOST variable is modified, the module must be rebooted before the change takes effect.

DSM3000/3200 Series

SET PERIOD 50
SET AVGn 1
SET BIN 1
SET FORMAT 0
SET PAGE 0
SET BINADDR <port> <IP Address> Where: IP Address is the IP address of the Host Computer.
Port is the UDP data port

NOTE: When the BINADDR variable is modified, the module must be rebooted before the change takes effect.

DSM3400 Series

SET PERIOD 30
SET AVGn 1
SET BIN 1
SET CONOUT 2
SET FORMAT 0
SET PAGE 0
SET BINADDR <port> <IP Address> Where: IP Address is the IP address of the Host Computer.
Port is the UDP data port

NOTE: When the BINADDR variable is modified, the module must be rebooted before the change takes effect.

DSAENCL3200

SET PERIOD 30
SET AVGn 1
SET BIN 1
SET CONOUT 2
SET FORMAT 0
SET PAGE 0
SET BINADDR <port> <IP Address> Where: IP Address is the IP address of the Host Computer.
Port is the UDP data port

NOTE: When the BINADDR variable is modified, the module must be rebooted before the change takes effect.

DSAENCL4000

SET PERIOD 25
SET AVG1 1
SET BIN 1 Set BIN to 4 if a header is to be added to the file
SET FORMAT 0
SET PAGE 0
SET BINADDR <port> <IP Address> Where: IP Address is the IP address of the Host Computer.
Port is the UDP data port

NOTE1: When the BINADDR variable is modified, the module must be rebooted before the change takes effect.

NOTE2: When BIN is set to 4, the Expect Binary Scan Header Box in the Configuration Window must be checked before a binary file is converted to ASCII.

RAD3200 Series

SET PERIOD 30
SET AVGn 1
SET BIN 1
SET FILEOUT 0
SET FORMAT 0
SET PAGE 0
SET BINADDR <port> <IP Address> Where: IP Address is the IP address of the Host Computer.
Port is the UDP data port

NOTE: When the BINADDR variable is modified, the module must be rebooted before the change takes effect.

RAD4000 Series

SET PERIOD 25
SET AVG1 1
SET BIN 1 Set BIN to 4 if a header is to be added to the file.
SET FORMAT 0
SET PAGE 0
SET BINADDR <port> <IP Address> Where: IP Address is the IP address of the Host Computer.
Port is the UDP data port

NOTE1: When the BINADDR variable is modified, the module must be rebooted before the change takes effect.

NOTE2: When BIN is set to 4, the Expect Binary Scan Header Box in the Configuration Window must be checked before a binary file is converted to ASCII.

ASCII Data Transfers

In order for the ScanTel program to acquire ASCII TCP/IP data from a DSA, RAD, Enclosure, DSM, or DTS module, the module must be configured correctly. Changes to the module configuration may be made in the ScanTel window after the connection is made. The recommended settings for each type module are listed below. The settings for PERIOD and AVERAGE reflect a scan speed that should work in most systems.

DSA 3000 Series

SET PERIOD 325
SET AVG 4
SET BIN 0
SET FORMAT 0
SET PAGE 0
SET NETTYPE TCP
NOTE: When the NETTYPE variable is modified, the module must be rebooted before the change takes effect.

DSA 3200 Series

SET PERIOD 150
SET AVG 4
SET BIN 0
SET FORMAT 0
SET PAGE 0
SET TIME 0
SET PORT 23
SET HOST 0.0.0.0 0 T T is TCP data transmission
NOTE: When the HOST variable is modified, the module must be rebooted before the change takes effect.

DTS3250 Series

SET PERIOD 7812
SET AVG 4
SET BIN 0
SET FORMAT 0
SET PAGE 0
SET TIME 0
SET HOST 0.0.0.0 0 T T is TCP data transmission
NOTE: When the HOST variable is modified, the module must be rebooted before the change takes effect.

DSM3000/3200 Series

SET PERIOD 50
SET AVGn 4
SET BIN 0
SET FORMAT 0
SET PAGE 0
SET BINADDR 0 0.0.0.0
NOTE: When the BINADDR variable is modified, the module must be rebooted before the change takes effect.

DSM3400 Series

SET PERIOD 50
SET AVG 4
SET BIN 0
SET CONOUT 2
SET FORMAT 0
SET PAGE 0
SET BINADDR 0 0.0.0.0
NOTE: When the BINADDR variable is modified, the module must be rebooted before the change takes effect.

DSAENCL3200

SET PERIOD 50
SET AVGn 4
SET BIN 0
SET CONOUT 2
SET FORMAT 0
SET PAGE 0
SET BINADDR 0 0.0.0.0

NOTE: When the BINADDR variable is modified, the module must be rebooted before the change takes effect.

DSAENCL4000

SET PERIOD 50
SET AVG1 41
SET BIN 0
SET FORMAT 0
SET PAGE 0
SET BINADDR 0 0.0.0.0

NOTE: When the BINADDR variable is modified, the module must be rebooted before the change takes effect.

RAD3200 Series

SET PERIOD 50
SET AVGn 4
SET BIN 0
SET FILEOUT 0
SET FORMAT 0
SET PAGE 0
SET BINADDR 0 0.0.0.0

NOTE: When the BINADDR variable is modified, the module must be rebooted before the change takes effect.

RAD4000 Series

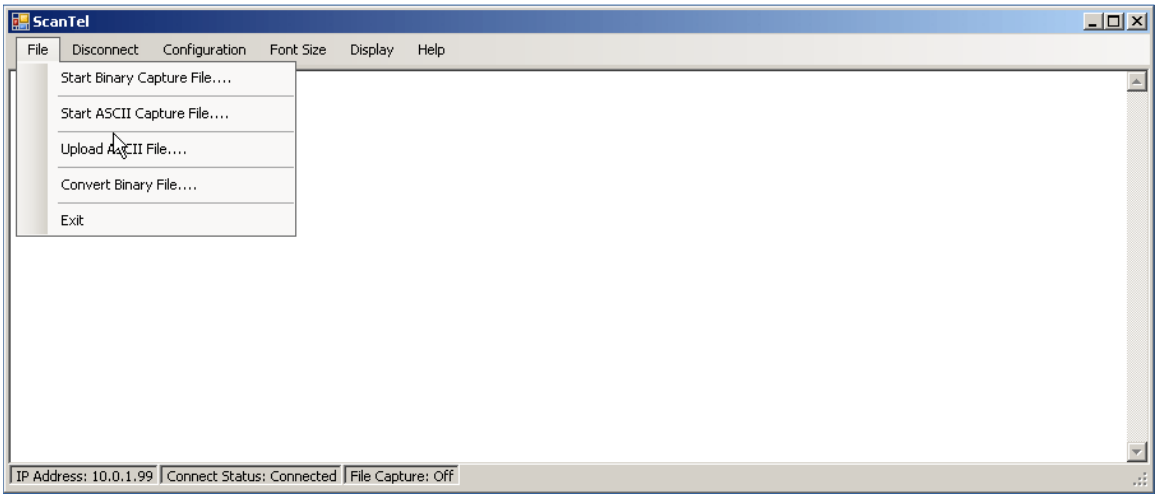
SET PERIOD 50
SET AVG1 4
SET BIN 0
SET FORMAT 0
SET PAGE 0
SET BINADDR 0 0.0.0.0

NOTE: When the BINADDR variable is modified, the module must be rebooted before the change takes effect.

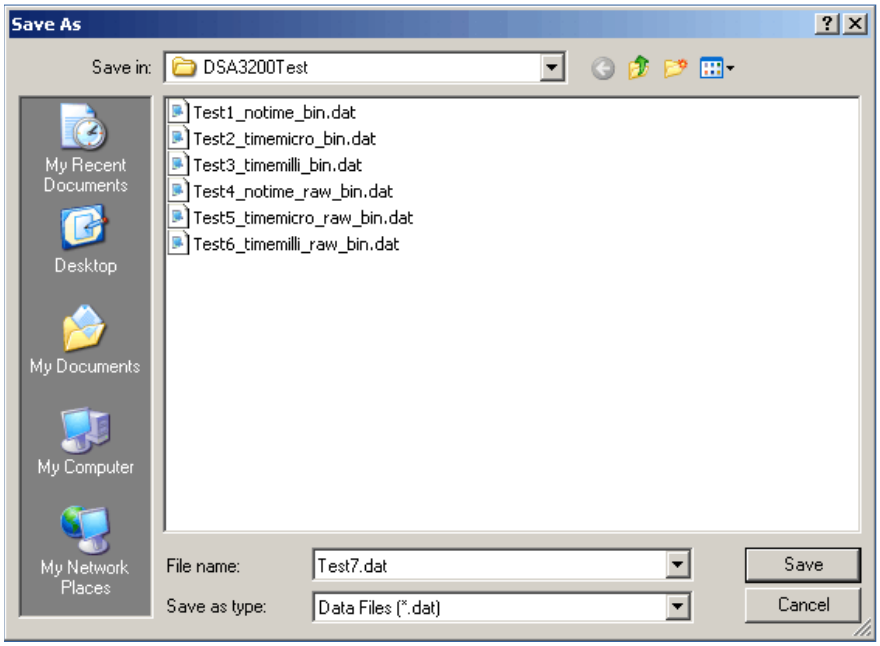
File Capture

Binary Data File

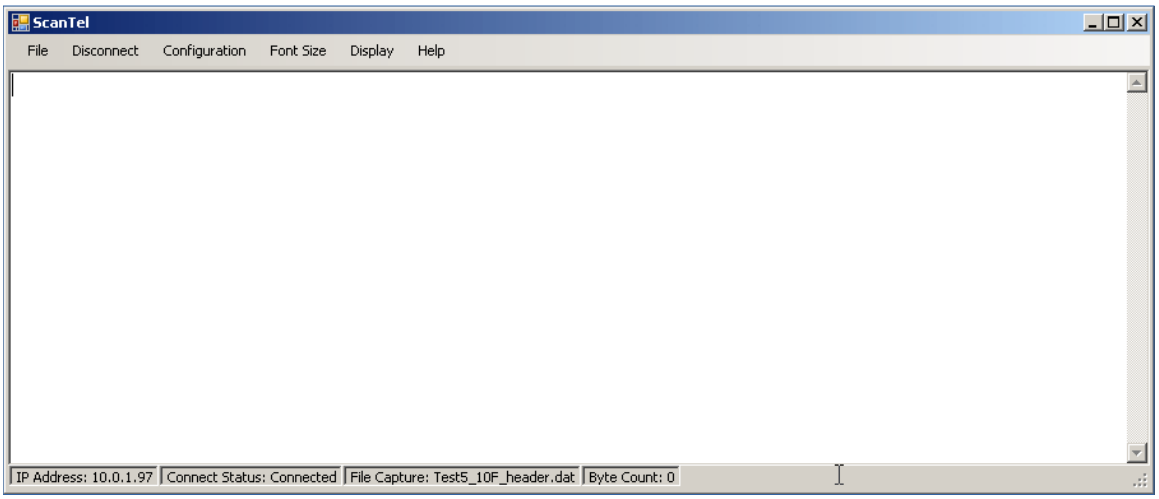
1. Configure the device for a Binary UDP data transfer. Refer to the configuration settings and the device software manual for more information.
2. Select: File
3. Select: Start Binary Capture File



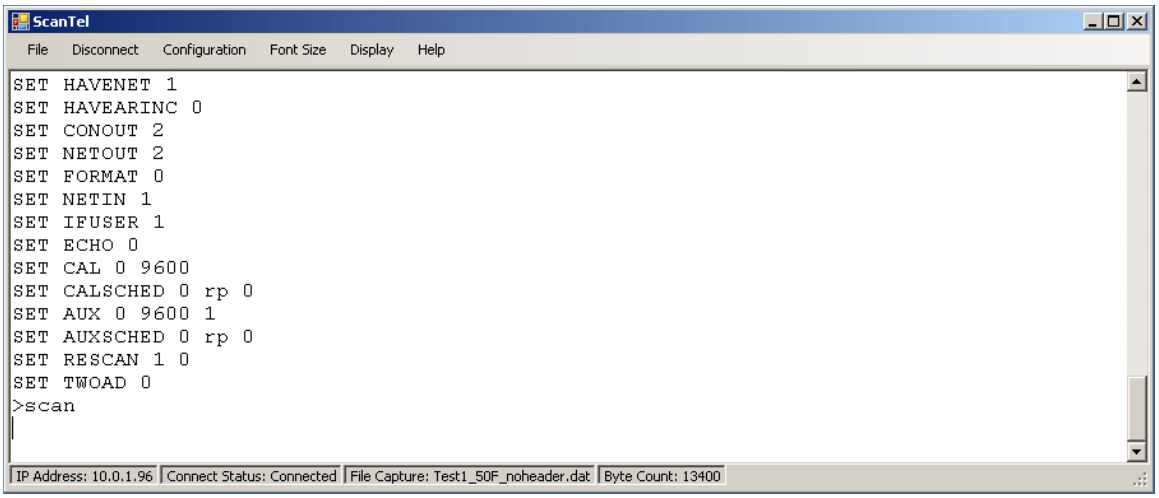
4. The Save File window will open. Enter the file name for the test and click OK



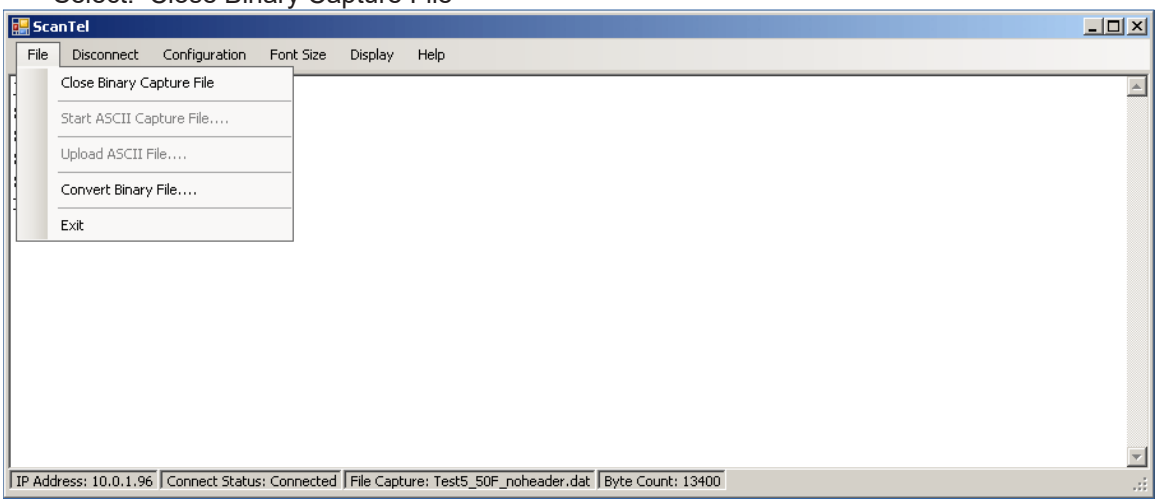
5. The status bar will show the file capture is on and the file name.



6. Type: Scan to start the data collection. If FPS is set to a finite number, the data collection will stop at the last frame. The Byte counter in the STATUS bar will count up as data are collected. When the scan stops, the total number of bytes will be displayed. If FPS is set to 0, the data collection must be stopped by the user by issuing a STOP command, or by pressing the escape key.
NOTE: At very fast scan speeds, it is recommended that FPS be set to a number other than 0. At speeds greater than 100 samples/channel/second, the module may not be able to acknowledge the STOP command.
The byte counter will show the total number of bytes captured.



7. Select: File
8. Select: Close Binary Capture File

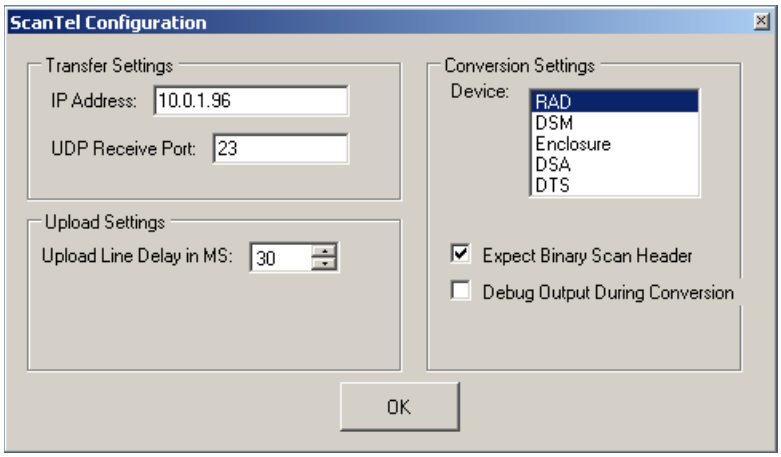


ASCII Data File

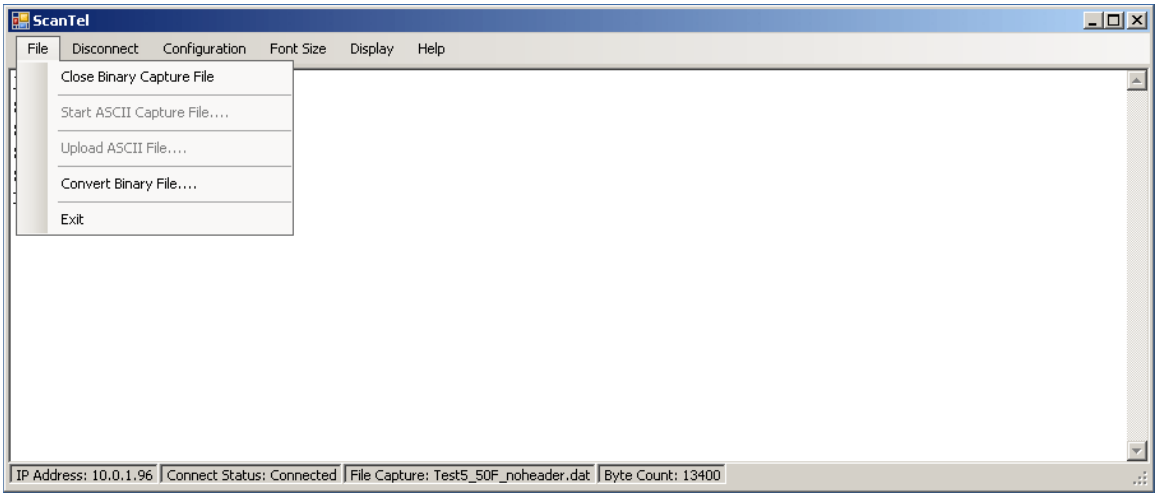
1. Configure the device for ASCII TCP/IP data transfer. Refer to the configuration settings and the device software manual for more information.
2. Select: File
3. Select: Start ASCII Capture File
4. The Save File window will open. Enter the file name for the test and click OK
5. The status bar will show the file capture is on and the file name.
6. Type: Scan to start the data collection. If FPS is set to a finite number, the data collection will stop at the last frame. If FPS is set to 0, the data collection must be stopped by the user by issuing a STOP command, or by pressing the escape key.
7. Select: File
8. Select: Close ASCII Capture File.

Convert Binary File

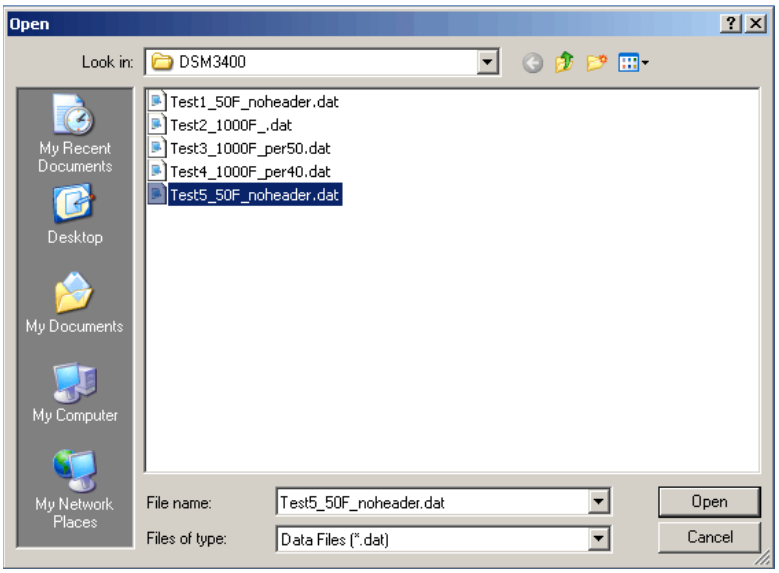
When the Binary File Capture is complete, the file can be converted to a .csv file that can be imported into any spreadsheet program. If the Binary File was captured from a RAD4000 or DSAENCL4000, the file may have a header. If the file has a header, the Expect Binary Scan Header Box in the Configuration Window must be checked before the conversion process is started. Headers may only be added to RAD4000 or DSAENCL4000 devices when using this software.



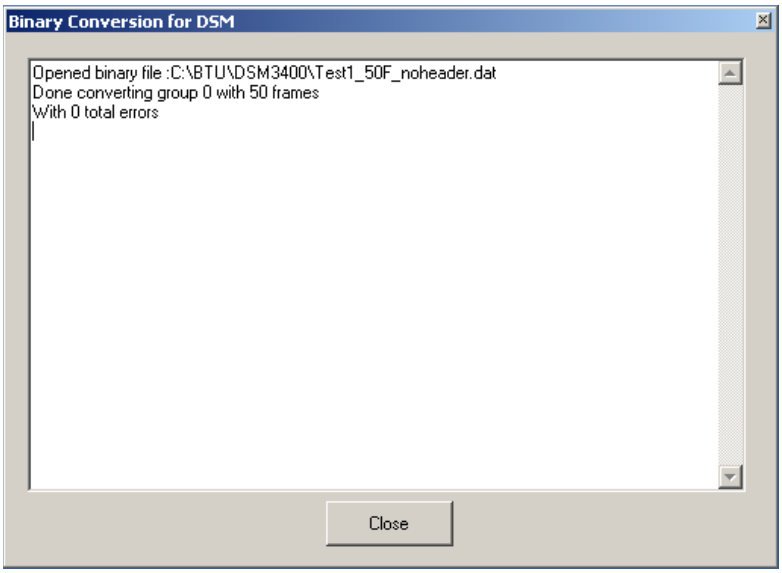
1. To convert a binary file to a .csv file
2. Select: File
3. Select: Convert Binary File



4. The File Open Window will open



5. Highlight the file to be converted and click Open.
6. The file will be converted. A window will open to show the progress



7. The converted file will be written to the same folder where the binary file was located. The file will have the same name as the binary file with the .csv extension. If a header was included in the binary file, the header data will be written to a file with the same name as the binary file, but with a .txt extension.

   NOTE: Headers may only be added to RAD4000 and DSAENCL4000 devices in UDP data transmissions.

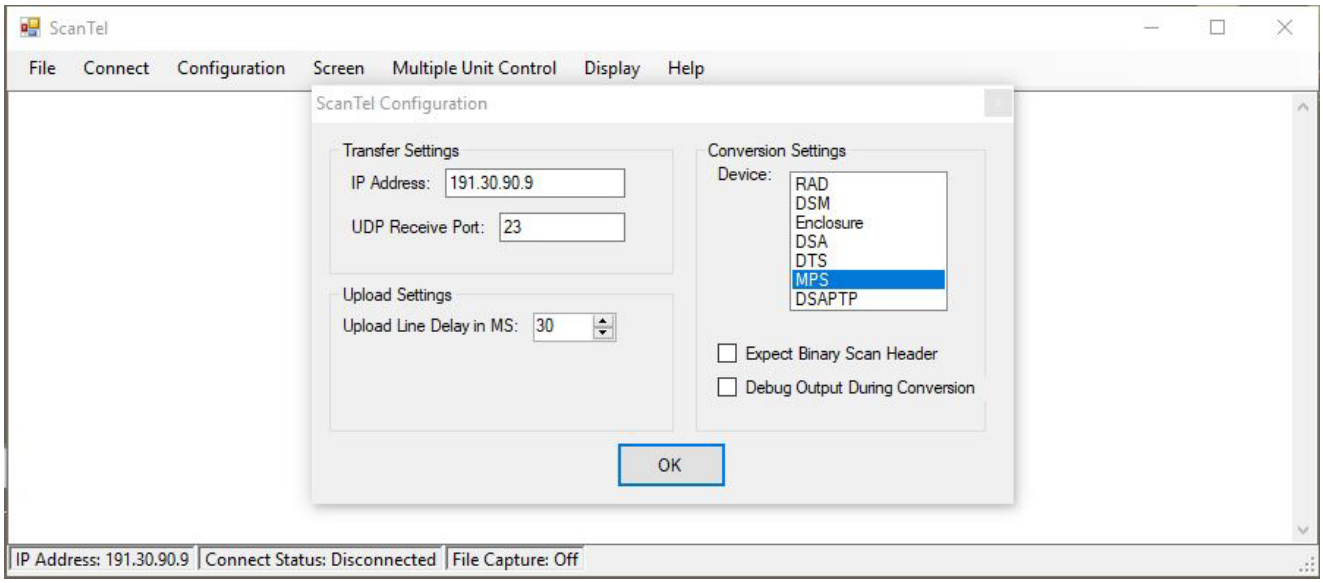
Multiple Unit Binary Control

When certain device types are selected on the Configuration screen, an option for Multiple Unit Binary Control may appear on the main ScanTel window. The Multiple Unit Binary Control allows a user to connect to multiple devices, initiate a scan, collect scan data, and merge the scan data to a single file. This feature requires the user to set one device as a PTP master, and the others as slaves. The following section will explain the setup procedure for Multiple Unit Binary Control of specific devices.

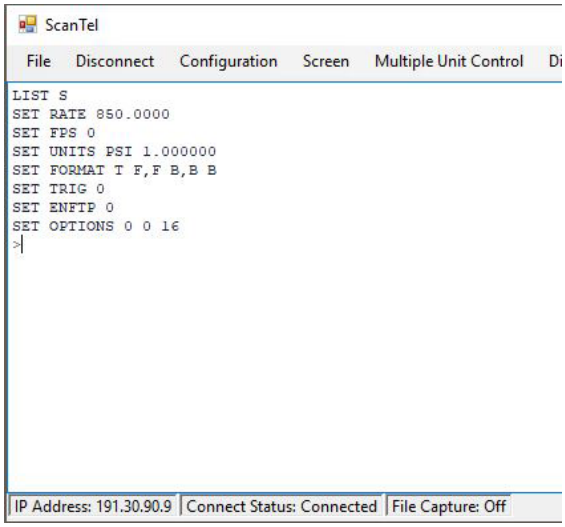
Configuring MPS Multiple Unit Binary Control

This procedure requires MPS software version 2.05 or newer. Contact the factory at scanco@scanivalve.com for the latest version of MPS software. ScanTel version 1.03 or newer is also required.

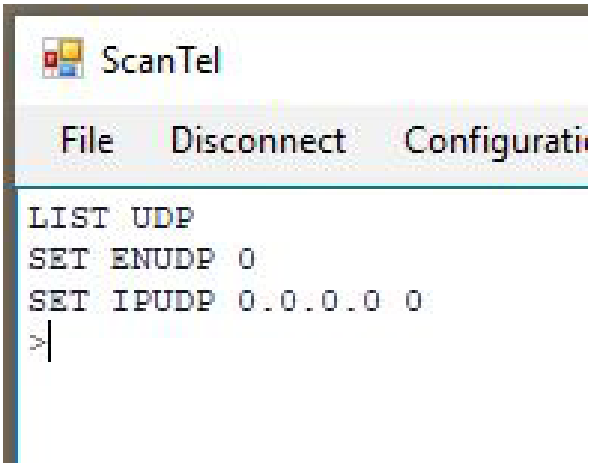
1. Connect power and Ethernet cables to each MPS to be used. Power on each MPS and allow approximately 2 minutes for the MPS to complete their boot cycle.
2. Open a ScanTel instance for each MPS to be used
3. In ScanTel, click “Help”-”About” to verify that ScanTel is version 1.03 or newer. If it is not, please download the latest version of ScanTel from the Scanivalve website www.scanivalve.com
4. Connect to each MPS in their own ScanTel instance. Click Configuration, input the IP Address of the scanner, and select MPS in the conversion settings. See image below.



5. Adjust the LIST S settings of each scanner to be used. It is recommended that the LIST S settings be the same for all scanners being used. In each ScanTel instance, type:
LIST S<ENTER>
SET RATE <desired scan rate in Hz><ENTER>
SET FPS <desired frames per scan><ENTER>
SET UNITS <desired units><ENTER>
SET FORMAT B B<ENTER>
SET TRIG 0<ENTER>
SET ENFTP 0<ENTER>
SET OPTIONS <desired options, default is 0 0 16><ENTER>

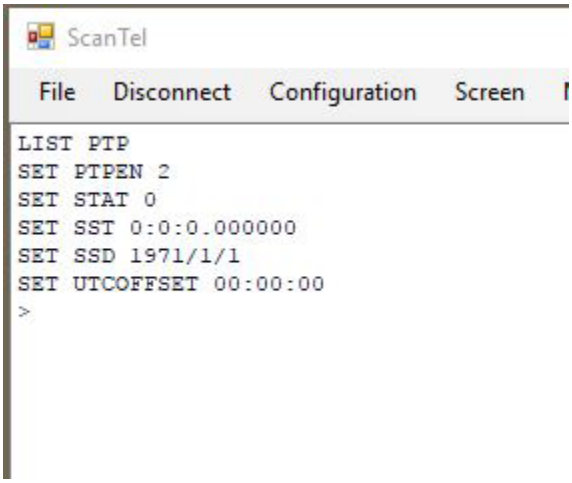


6. Adjust LIST UDP settings. The LIST UDP settings of each MPS to be used must have ENUDP disabled. In each ScanTel instance, type:
LIST UDP<ENTER>
SET ENUDP 0<ENTER>
SET IPUDP 0.0.0.0 0<ENTER>



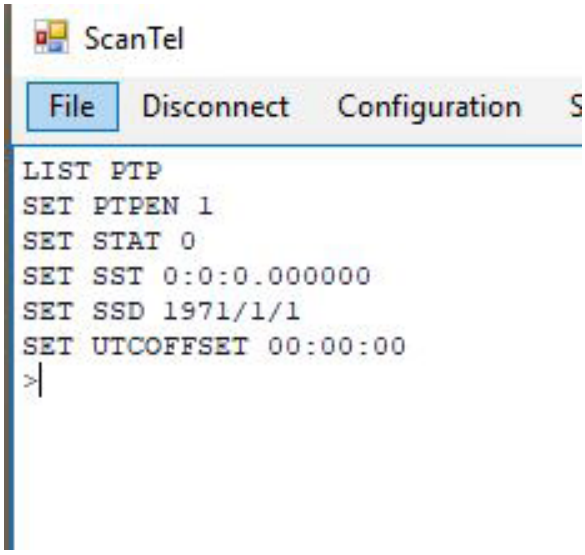
7. Adjust LIST PTP settings of a single MPS. Select a single MPS to adjust the PTP settings as specified. Only one MPS may have PTPEN set to 2 while the others have PTPEN set to 1. The MPS with PTPEN set to 2 will act as the PTP master while the others with PTPEN set to 1 act as slaves. In only one ScanTel instance, type:
LIST PTP<ENTER>
SET PTPEN 2<ENTER>
SET SST 0:0:0.0<ENTER>
SET SSD 1971/1/1<ENTER>
SET UTCOFFSET 0:0:0.0<ENTER>

NOTE: It is important that SST, SSD, and UTCOFFSET variables of all scanners being used are the same.



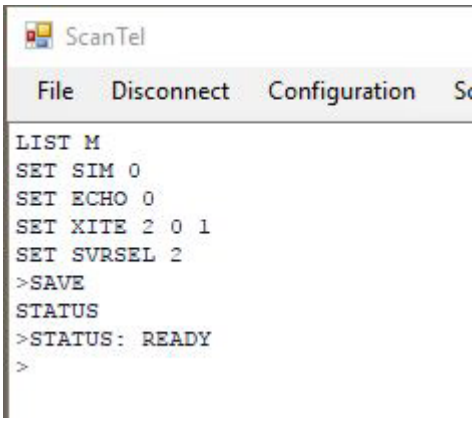
8. Adjust LIST PTP settings of the other MPS to be used. In each ScanTel instance that isn't the PTP master, type:
LIST PTP<ENTER>
SET PTPEN 1<ENTER>
SET SST 0:0:0.0<ENTER>
SET SSD 1971/1/1<ENTER>
SET UTCOFFSET 0:0:0.0<ENTER>

NOTE: It is important that SST, SSD, and UTCOFFSET variables of all scanners being used are the same.



9. Adjust LIST M settings. Each MPS must have SVRSEL set to 2 to enable the binary server. In each ScanTel instance, type:
LIST M<ENTER>
SET SVRSEL 2<ENTER>

10. Save the changes to each MPS. A save is required if SVRSEL, ENUDP, or ENFTP are changed. After the intial save, subsequent Multiple Unit Binary scans will not require a SAVE or change of the variables listed in steps 1-9 in this procedure. In each ScanTel instance, type:
SAVE<ENTER>
STATUS<ENTER>
Allow ample time for the save to complete. The save can take over a minute. When each MPS returns “STATUS: READY” you may proceed to the next step.



11. Disconnect from each ScanTel instance. Click “Disconnect” on each ScanTel instance once the save is complete.

12. Close each ScanTel instance.

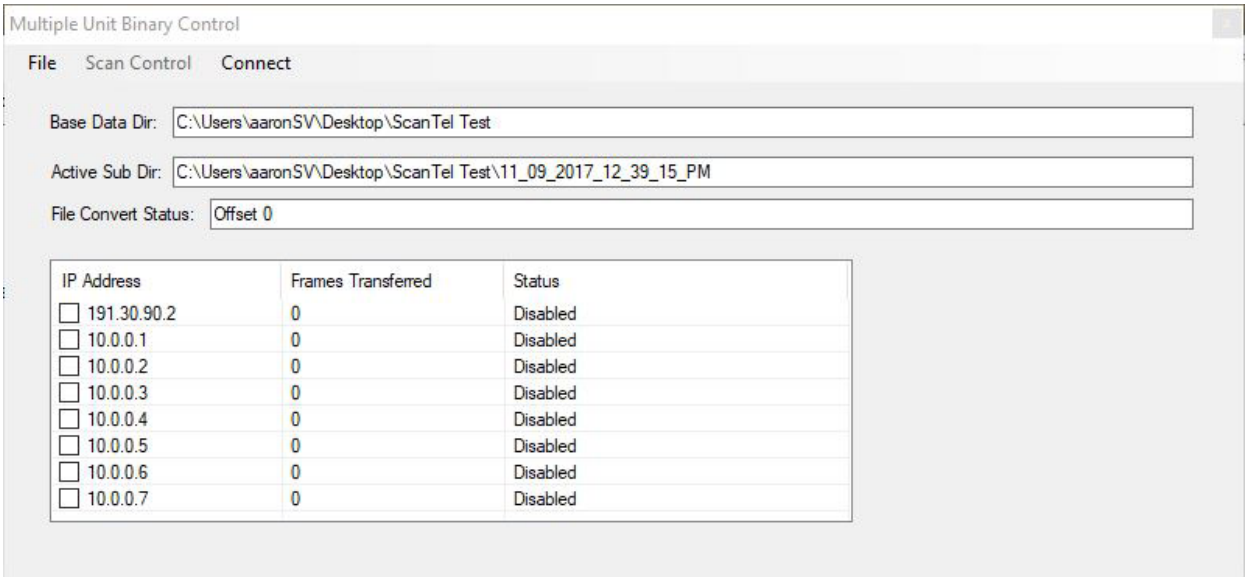
13. Power cycle each MPS. Turn each MPS off for at least 10 seconds. Reapply power.

MPS Multiple Unit Binary Control

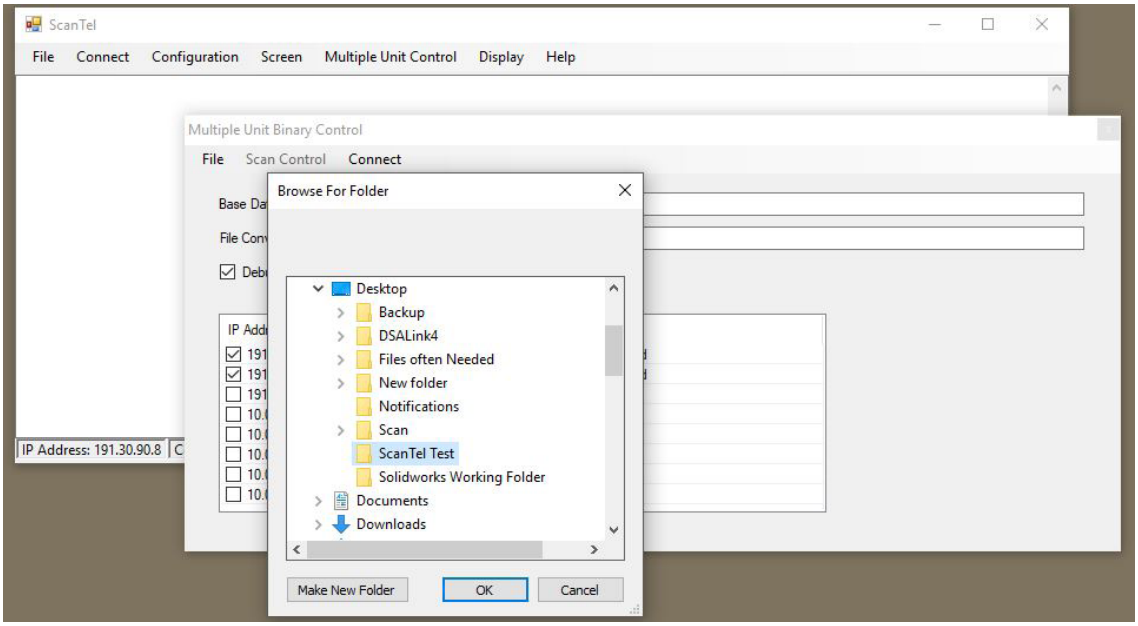
1. Open a single ScanTel instance.

2. Select a single MPS. Click the “Configuration” tab. Input the IP Address of the MPS. Select MPS in conversion settings. Click “OK”. Click “Connect”

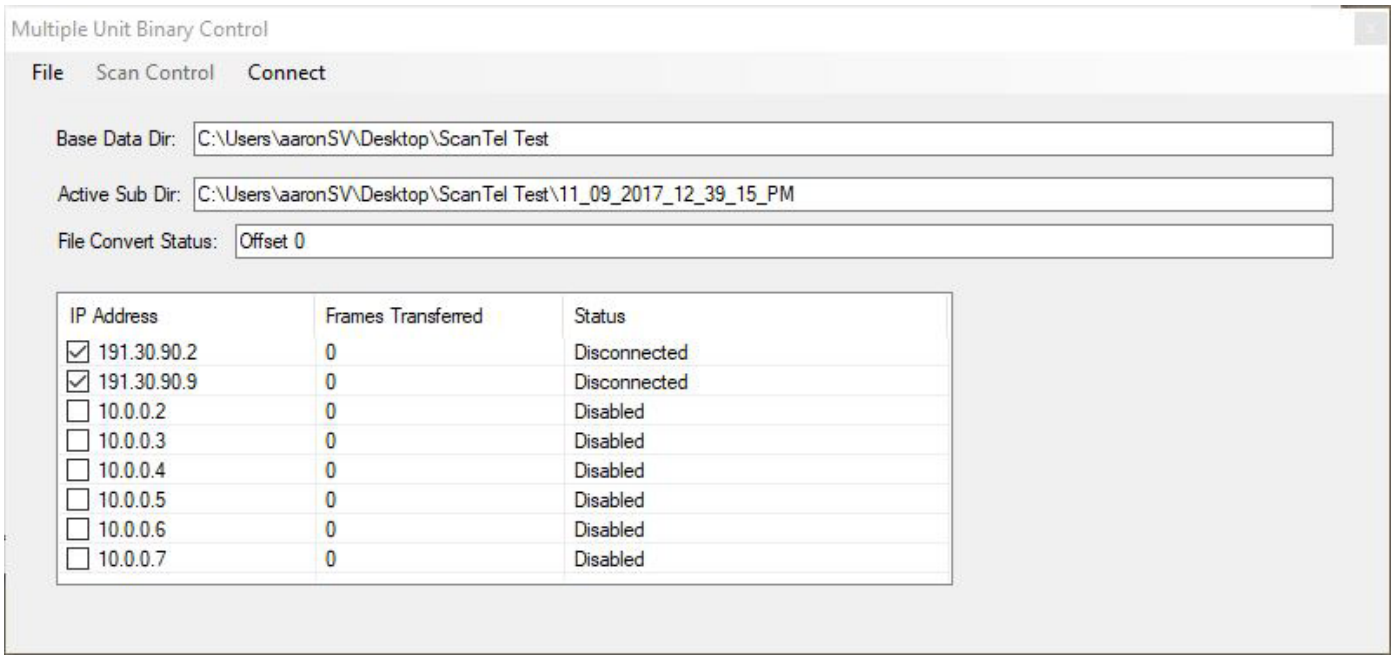
3. Select “Multiple Unit Control”. The Multiple Unit Binary Control window will open as shown below.



4. Set the Base Directory for the Multiple Unit Binary Control. This directory will become populated with a timestamped folder with data from each MPS every time a scan occurs.
Click “File”
Click “Set Base Directory”
Select a suitable location and select OK.

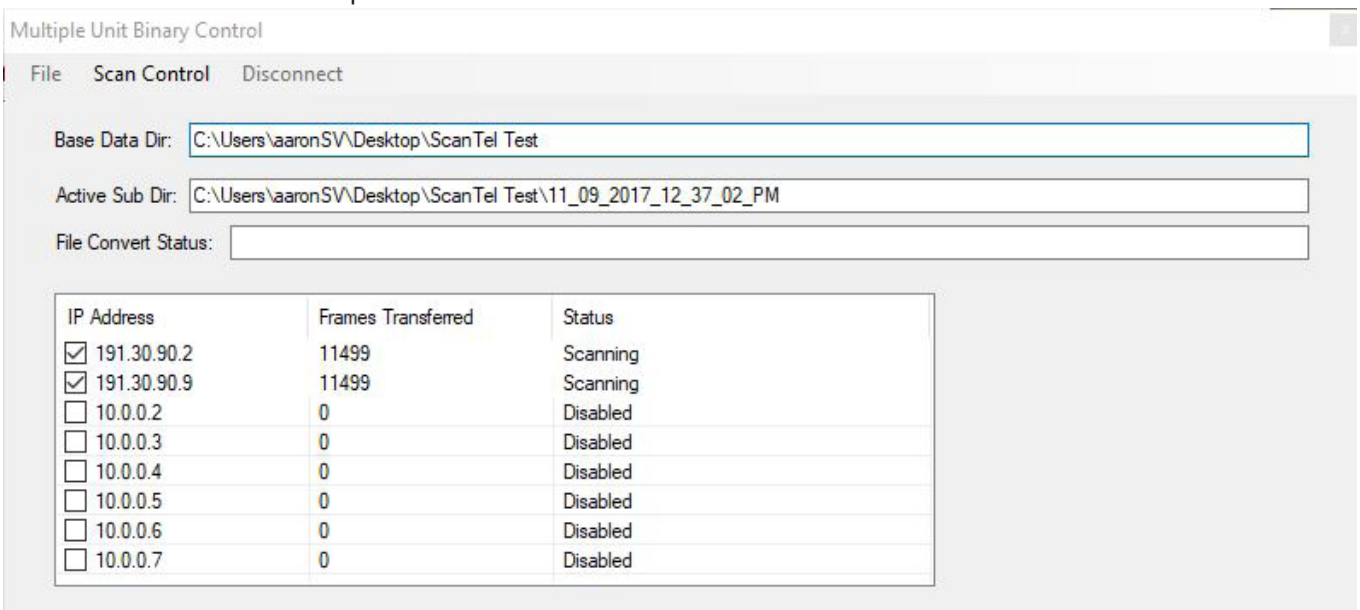


5. Set the IP Addresses of the scanners you want to collect data from.
Click the empty IP Address to select it.
Click the IP Address again to get a cursor to change the IP Address.
Input the IP Address of an MPS and hit ENTER.
Check the box next to the IP Address to enable or disable the scanner.
Do this for each MPS, inputting their discreet IP Address



6. Click “Connect” on the Multiple Unit Binary Control window. The “Status” for each scanner enabled should change from “Disconnected” to “Connected”.

7. To start scanning:
Cick “Scan Control”
Click “Start Scan”
Scanning will begin. Note the status change from “Connected” to “Scanning”. Also note the “Frames Transferred” climbs until the scan stops.



8. To stop scanning:
Click “Scan Control”
Click “Stop Scan”
Scanning will stop. Note the status change from “Scanning” to “Connected”. The binary .dat files can be located in the timestamped folder in the Base Directory.

9. Merge data files.
Click “File”
Click “Merge Data Files”
Slect the timestamped folder that you would like the .dat files converted and merged to a single .CSV.
Click “OK”
Allow time for the files to be converted and merged.

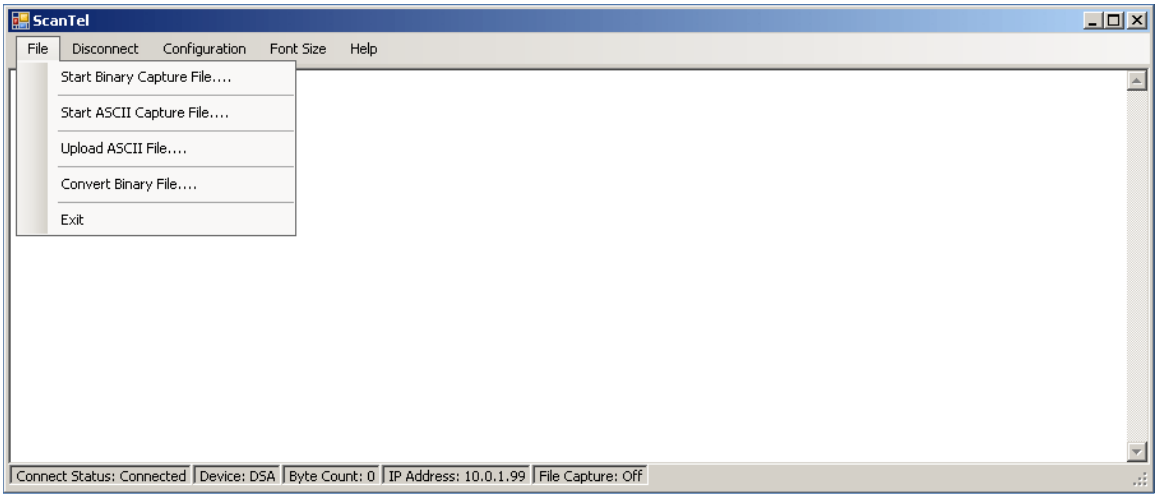
NOTE: This step can be taken at a time convenient to the user. Files can be merged after testing if desired.

10. Access data.
Once the merge is complete, a data file titled Merged.csv will appear in the timestamped folder that was converted.

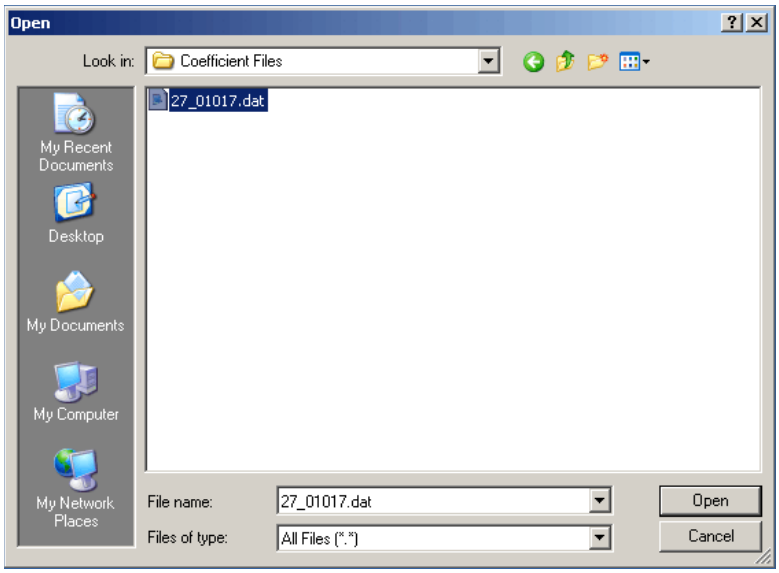
Upload ASCII File

ASCII files may be uploaded to any of the devices supported in this program. Generally, this feature would be used to upload configuration files to a DSM, RAD or Enclosure. It most likely would be used to upload calibration coefficients to a DSA3200 Series module.

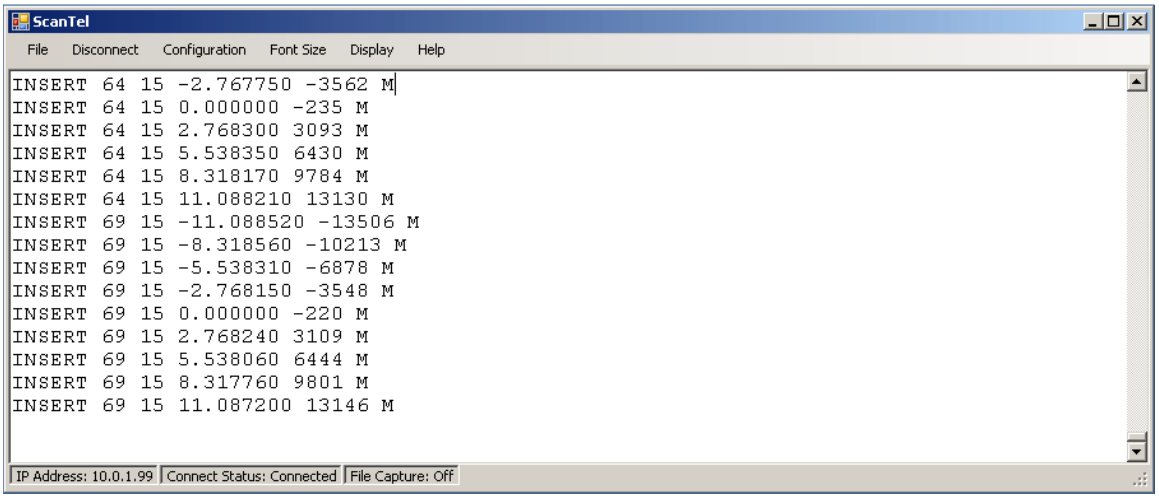
1. Before uploading a coefficient file to a DSA module the existing coefficients must be deleted.
2. After the connection is made, Type: DELETE 0 69. This will delete all existing master planes from RAM in the module.
3. From the main screen, Select: Upload ASCII File



4. The file Open window will open. Browse to the folder where the coefficients are stored, highlight the correct file, and click Open.



5. The upload will start immediately. The upload is complete when the last channel in the last temperature plane is displayed.



6. Type: SAVE to save the coefficients to the device.
7. Click Disconnect
8. Cycle power to complete the process.

Examples

DSA3200 Series UDP Binary High Speed

A DSA 3200/16Tx at address 191.30.80.144 is to be configured to send binary data at 500 samples/channel/sec over the UDP port 23.The data are to be logged to a binary file named data.bin in a folder named: data. 1000 frames of data are to be sent. After the data are logged, they are to be converted to ASCII format..

1. Click on the ScanTel Icon
2. Open the Configuration Window
3. Select the Device Type
4. Enter the IP Address of the device
5. Set the UDP Port - Port 23 is the default
6. Click OK
7. Click Connect to connect to the module.
8. Configure the module for UDP Binary Data Transmission
   SET PERIOD 125
   SET AVG 1
   SET BIN 1
   SET FORMAT 0
   SET FPS 1000
   SET PAGE 0
   SET TIME 0
   SET PORT 23
   SET HOST <IP Address> <port> U Where: IP Address is the IP address of the host computer.
   Port is the UDP data port
   U is UDP data transmission
   SAVE This will save the changes
9. Click Disconnect
10. Cycle the power to the module
11. Click Connect to reconnect to the module
12. Select: File
13. Select: Start Binary Capture File
14. Browse to the correct folder, Enter the file name and click OK
15. Type: SCAN in the ScanTel window
16. When the scan is complete, Select: File
17. Select: Close Binary File
18. Select: Convert Binary File
19 Highlight the file to be converted and click Open
20. Close the Convert Status Window.

DTS3250 and DTS4050 UDP Binary

A DTS 3250/16Tx at address 191.30.85.146 is to be configured to send binary data over the UDP port 23.The data are to be logged to a binary file named data.bin in a folder named: data. 1000 frames of data are to be sent. After the data are logged, they are to be converted to ASCII format.

1. Click on the ScanTel Icon
2. Open the Configuration Window
3. Select the Device Type
4. Enter the IP Address of the device
5. Set the UDP Port - Port 23 is the default
6. Click OK
7. Click Connect to connect to the module.
8. Configure the module for UDP Binary Data Transmission
   SET PERIOD 325
   SET AVG 1
   SET BIN 1
   SET FPS 1000
   SET FORMAT 0
   SET PAGE 0
   SET TIME 0
   SET HOST <IP Address> <port> U Where: IP Address is the IP address of the Host Computer.
   Port is the UDP data port to be used
   U is UDP data transmission
   SAVE This will save the changes
9. Click Disconnect
10. Cycle the power to the module
11. Click Connect to reconnect to the module
12. Select: File
13. Select: Start Binary Capture File
14. Browse to the correct folder, Enter the file name and click OK
15. Type: SCAN in the ScanTel window
16. When the scan is complete, Select: File
17. Select: Close Binary File
18. Select: Convert Binary File
19 Highlight the file to be converted and click Open
20. Close the Convert Status Window.

RAD4000 UDP Binary High Speed

A RAD4000 at address 191.30.30.20 is to be configured to send binary data over the UDP port 23.The data are to be logged to a binary file named data.bin. 6000 frames of data are to be sent. The data must include a header. After the data are logged, they are to be converted to ASCII format.

1. Click on the ScanTel Icon
2. Open the Configuration Window
3. Select the Device Type
4. Enter the IP Address of the device
5. Set the UDP Port - Port 23 is the default
6. Check the box: Expect Binary Scan Header
7. Click OK
8. Click Connect to connect to the module.
9. Configure the module for UDP Binary Data Transmission
   SET PERIOD 25
   SET AVG1 1
   SET BIN 4
   SET FPS1 6000
   SET FORMAT 0
   SET PAGE 0
   SET BINADDR <port> <IP Address> Where: IP Address is the IP address of the Host Computer.
   Port is the UDP data port
   SAVE This will save the changes
10. Click Disconnect
11. Cycle the power to the module
12. Click Connect to reconnect to the module
13. Select: File
14. Select: Start Binary Capture File
15. Browse to the correct folder, Enter the file name and click OK
16. Type: SCAN in the ScanTel window
17. When the scan is complete, Select: File
18. Select: Close Binary File
19. Select: Convert Binary File
20. Highlight the file to be converted and click Open
21. Close the Convert Status Window.

DSA3200 Series ASCII TCP/IP

A DSA 3200/16Tx at address 191.30.80.144 is to be configured to send ASCII TCP/IP data at 50 samples/channel/sec over the TelNet port (Port 23). 23.The data are to be logged to a file named data.txt in a folder named: data. 10000 frames of data are to be sent.

1. Click on the ScanTel Icon
2. Open the Configuration Window
3. Select the Device Type
4. Enter the IP Address of the device
5. Click OK
6. Click Connect to connect to the module.
7. Configure the module for ASCII Data Transmission
   SET PERIOD 156
   SET AVG 8
   SET BIN 0
   SET FORMAT 0
   SET PAGE 0
   SET FPS 10000
   SET TIME 0
   SET PORT 23
   SET HOST 0.0.0.0 0 T T is TCP data transmission

   SAVE This will save the changes
8. If the module had been set up for UDP transmission, go to step 9
   If not, go to step 12
9. Click Disconnect
10. Cycle the power to the module
11. Click Connect to reconnect to the module
12. Select: File
13. Select: Start ASCII Capture File
14. Browse to the correct folder, Enter the file name and click OK
15. Type: SCAN in the ScanTel window
16. When the scan is complete, Select Close ASCII File

The data may be viewed in a test editor or spreadsheet program.

APPENDIX A - ENGINEERING UNIT CONVERSION CONSTANTS

UNITSCAN Setting	Engineering Unit	PSI to EU 1 psi =	EU to PSI 1 EU =
ATM	Atmospheres	0.068046 A	14.6960 psi
BAR	Bars	0.068947 b	14.5039 psi
CMHG	Centimeter of Mercury	5.17149 cmHg	0.193368 psi
CMH2O	Centimeter of Water	70.308 cmH_2O	0.014223 psi
DECIBAR	Decibar	0.68947 db	1.4504 psi
FTH2O	Foot of Water	2.3067 ftH_2O	0.43352 psi
GCM2	Gram per square Centimeter	70.306 g/cm^2	0.014224 psi
INHG	Inch of Mercury @ 0°C	2.0360 inHg	0.491159 psi
INH2O	Inch of Water @ 4°C	27.680 inH_2O	0.036127 psi
KGCM2	Kilogram per square Centimeter	0.0703070 kg/cm^2	14.2235 psi
KGM2	Kilogram per square Meter	703.069 kg/m^2	0.0014223 psi
KIPIN2	kips per square inch(ksi)	0.001 kip/in^2	1000.0 psi
KNM2	Kilonewton per square Meter	6.89476 kN/m^2	0.145038 psi
KPA	Kilopascal	6.89476 kPa	0.145038 psi
MBAR	Millibar	68.947 mb	0.014504 psi
MH2O	Meter of Water	0.70309 mH_2O	1.42229 psi
MMHG	Millimeter of Mercury	51.7149 mmHg	0.0193368 psi
MPA	Megapascal	0.00689476 Mpa	145.038 psi
NCM2	Newton per square Centimeter	0.689476 N/cm^2	1.45038 psi
NM2	Newton per square Meter	6894.76 N/m^2	0.000145038 psi
OZFT2	Ounce per square Foot	2304.00 oz/ft^2	0.000434028 psi
OZIN2	Ounce per square Inch	16.00 in/ft^2	0.062500 psi
PA	Pascal	6894.76 Pa	0.000145038 psi
PSF	Pound per square Foot	144.00 lb/ft^2	0.00694444 psi
TORR	Torr	51.7149 T	0.0193368 psi

APPENDIX B - SOFTWARE CHANGE LOG

This section contains change information to assist a user in determining the differences between different versions of software.

Version 1.00 - Initial Release - April 2011

Version 1.01 - August 2011

Added ability to send the <TAB> character to the device.

Corrected a bug that did not insert the time stamp into RAD, Enclosure, or DSM CSV files except when the packet types were 3, 4, 8 or 9.

Changed the binary scan header from expecting a unsigned long to expecting a float when reading Period.

Version 1.02 - March 2015

Added functionality to convert binary files of raw (non engineering unit) data.

Resolved a bug that sometimes prevented binary data from being captured.

Version 1.03 - January 2018

Added Multiple Unit Binary Control

Supports multiple MPS data collection and synchronization