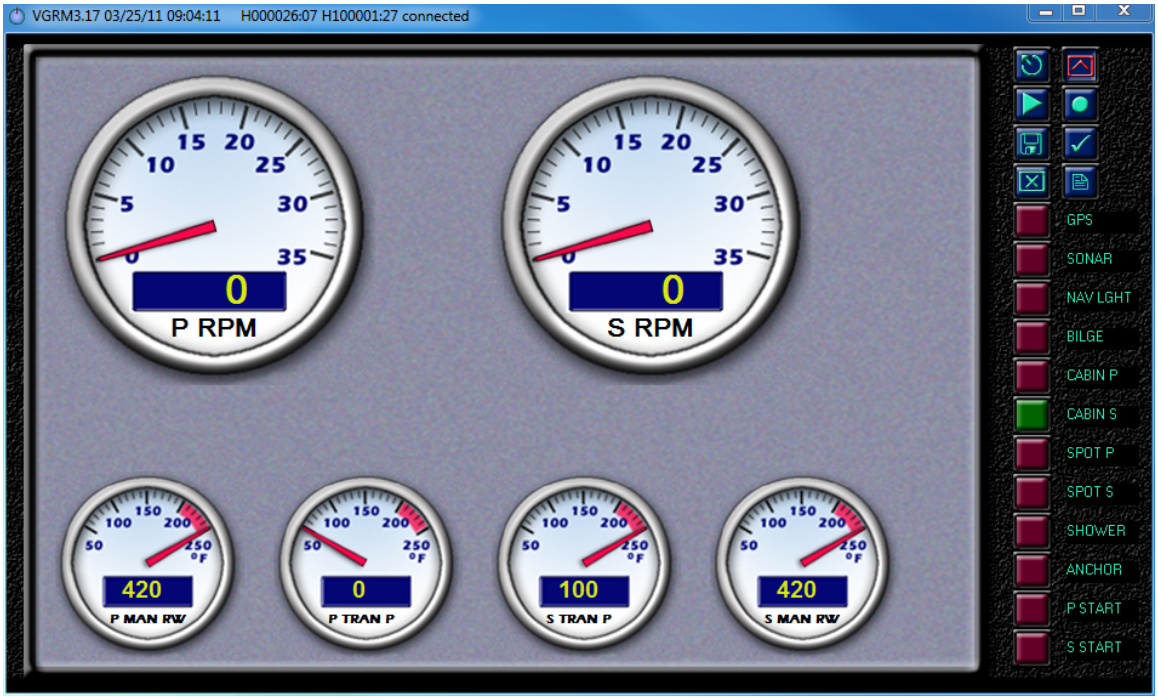
vDash™

Version 3.13.3 User's Manual

Part III – Advanced Features



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Important Product Information

WARNING!

USE THIS UNIT ONLY AS AN AID TO MONITORING ENGINE PERFORMANCE INFORMATION.

CAUTION

When showing sensor data, this unit will only show information based on the sender used and its installed position.

The operating and storage temperature for your unit is from -4 degrees to+167 degrees Fahrenheit (-20 to +75 degrees Celsius). Extended storage temperatures higher or lower than specified will cause the liquid crystal display to fail. Neither this type of failure nor its consequences are covered by the warranty. For more information, consult the factory customer service department.

All features and specifications are subject to change without notice.

Chetco Digital Instruments may find it necessary to change or end our policies, regulations, and special offers at any time. We reserve the right to do so without notice.

All screens in this manual are simulated.

NOTICE!

Free software upgrades will be available on our website at http:// www.chetcodigital.com as they are released. Please check our website periodically for these and other information as they become available.

Thank you for choosing Chetco Digital Instruments

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

• Reorient or relocate the receiving antenna.

• Increase the separation between the equipment and receiver.

• Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

• Consult the factory customer service department for help.

SPECIFICATIONS

Operating System: ..... Windows XP/Vista/Windows 7

Maximum Update Rate: ..... 1 per second

Supported Units: ..... vGauge/SeaGauge-Remote, vGauge/SeaGaugeG12, vGauge/SeaGaugeG12C, vGauge/SeaGaugeG18C, vGauge/SeaGaugeG12N, G24, G24C, G32, G32C, vSwitch

Firmware Version: VGRM3.12, G12R1.14, G12C1.1

Analog Input Channels: 16

Pulse Input Channels: 3

NMEA Input Channels: ..... 6 (NMEA 0183), optional NMEA 2000

Digital Switch Positions: 12

Display Graphics Options (color): ..... Text, Horizontal Bar Graph, Vertical Bar Graph, Histogram, Small Dial, Large Full Dial, Large Half Dial, Extra Large Text.

Display Pages: 8

Digital Interfaces: ..... SERIAL, USB, TCP/IP

LOG File Format: ..... *.CSV, *.TXT (NMEA $IIXDR)

NMEA 2.0 Instrumentation Sentences $IIXDR,A $IIXDR,C $IIXDR,D $IIXDR,F $IIXDR,G $IIXDR,I $IIXDR,P $IIXDR,R $IIXDR,S $IIXDR,T $IIXDR,U $IIXDR,V, $GPGLL, $SDMTW, $SDDBT, $SDVLW, $SDVHW

Introduction

Welcome

Thank you for purchasing a Chetco Digital Instruments product.

vDash™ is a software application utility that provides a virtual dashboard on a Windows XP, Vista or Windows 7 based PC/Laptop. vDash™ works with vSwitch, SeaSwitch, SeaGauge™ and vGauge/SeaGauge™ to allow configuration and data logging via attached serial cable, USB, or Bluetooth wireless interface.

Once installed on your PC/Laptop, vDash™ accepts NMEA 0183 (and optional NMEA 2000 data) from built-in serial ports, parses the recognized sentences and displays the data in a real-time viewer window. Up to 8 display screens can be laid out with a variety of graphic display formats using the point and click interface of attached computer mouse or touch pad. Once the desired formats are configured, vDash™ provides real-time programming of any attached or vGauge/SeaGauge™ product.

vDash™ allows complete configuration and programming of vGauge/SeaGauge™ and via attached PC. Custom user settings are stored in configuration files on the PC and then transferred to the attached units. Unit Firmware updates can also be performed using simple commands.

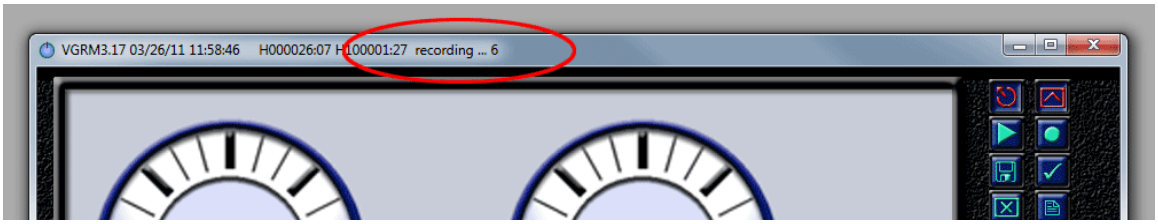
vDash™ provides real-time data logging of sensor data to host PC or optional USB memory stick from vGauge/SeaGauge-Remote units via USB or wireless interfaces.

Data Logging

vDash will perform real time recording and playback of data from attached SeaGauge™ or vGauge/SeaGauge™ units.

The RECORD button will start data logging to a pre specified log file if vDash is connected to a unit and receiving data. Logging will continue until the

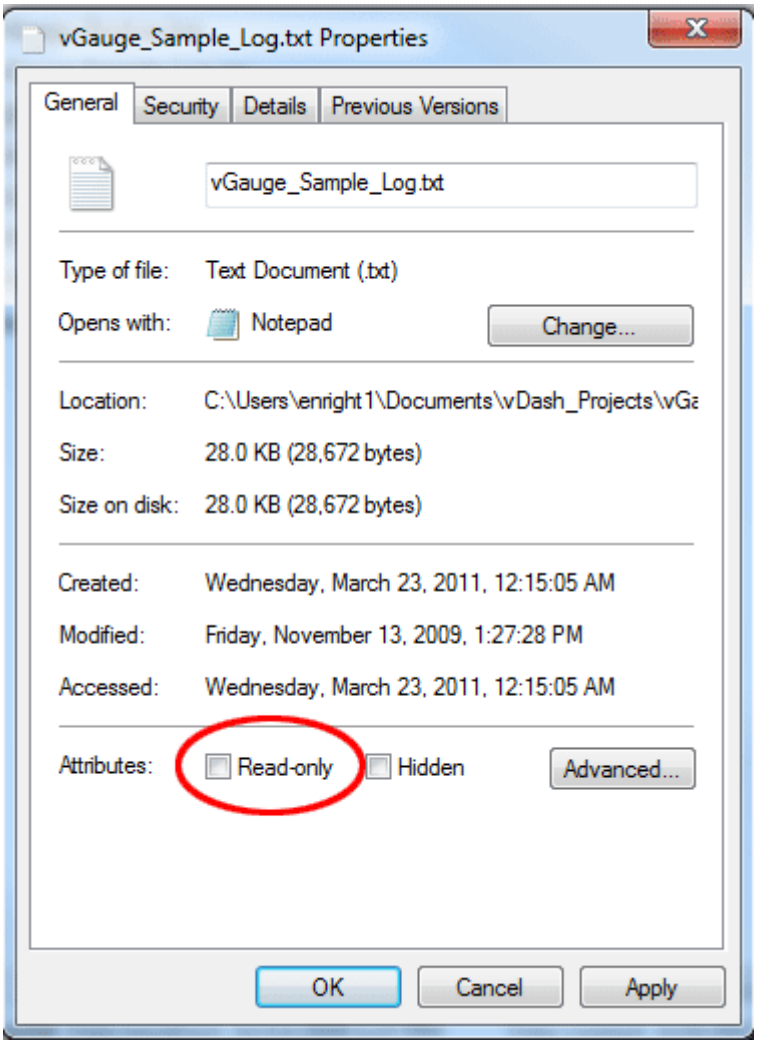
RECORD button is clicked again.



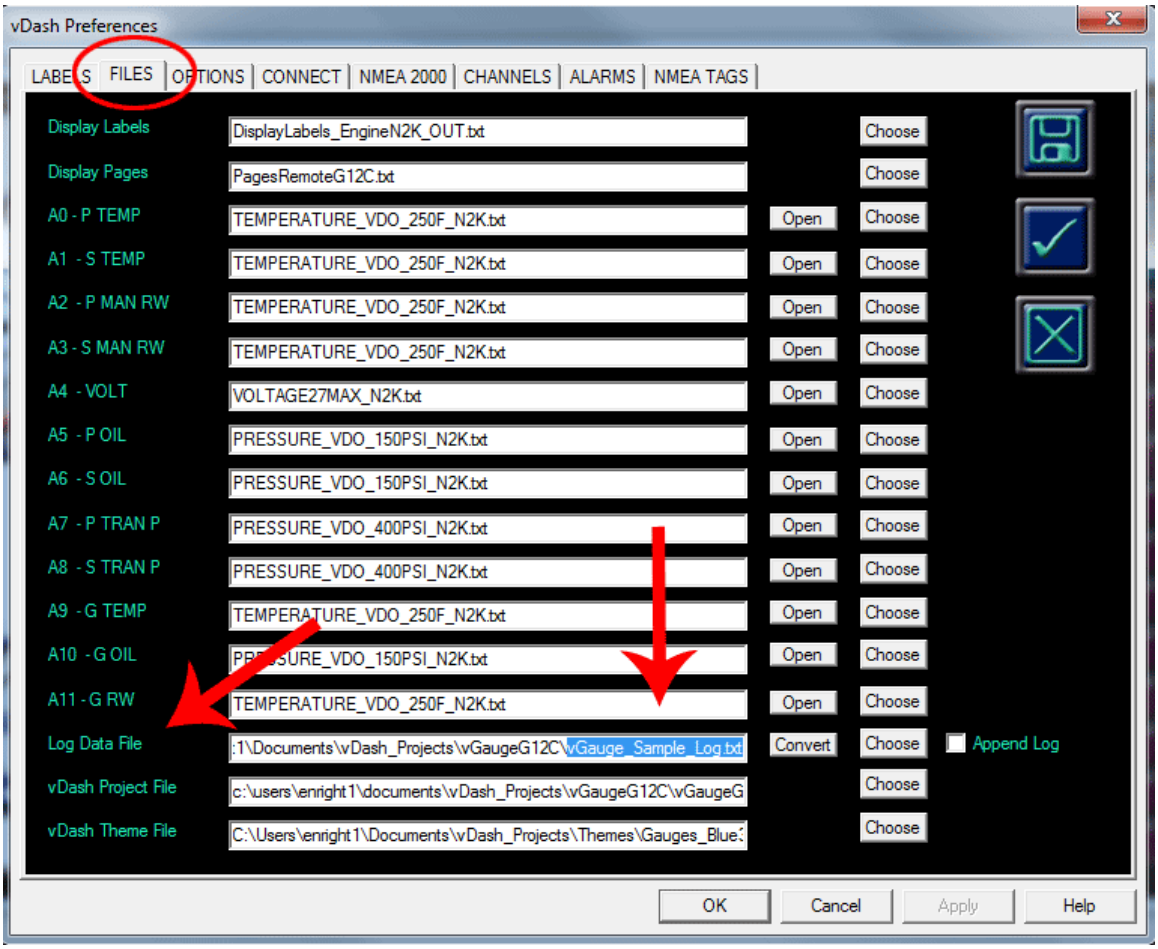
For data logging to occur, the selected file must be enabled for write access.

Right Click on specified file and select Properties.

Be sure the READ-ONLY attribute is not checked:

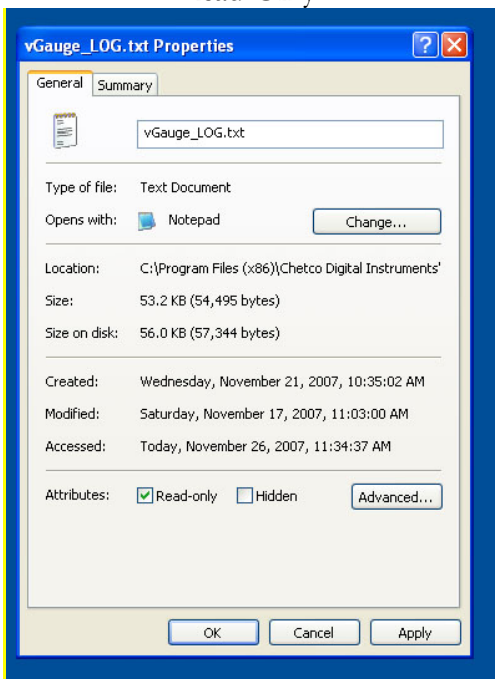


If vDash is not connected to a unit, clicking the RECORD button will start playback of previously recorded Log File as specified in the FILES Dialog, under the Preferences tab→ Files → Log Data File → Choose:

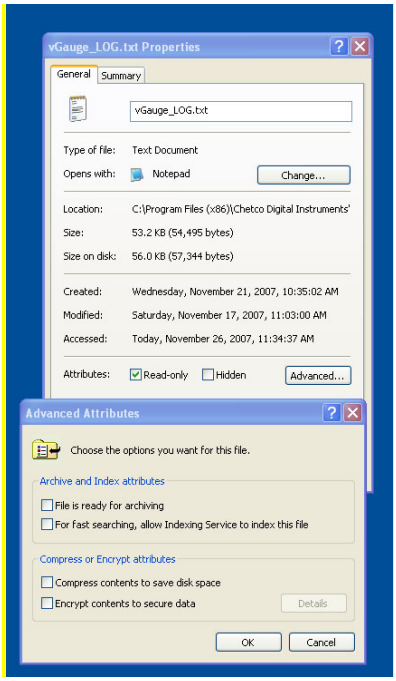

vDash Preferences
LABELS
FILES
OPTIONS
CONNECT
NMEA 2000
CHANNELS
ALARMS
NMEA TAGS
Display Labels
DisplayLabels_EngineN2K_OUT.txt
Choose
Display Pages
PagesRemoteG12C.txt
Choose
A0 - P TEMP
TEMPERATURE_VDO_250F_N2K.txt
Open
Choose
A1 - S TEMP
TEMPERATURE_VDO_250F_N2K.txt
Open
Choose
A2 - P MAN RW
TEMPERATURE_VDO_250F_N2K.txt
Open
Choose
A3 - S MAN RW
TEMPERATURE_VDO_250F_N2K.txt
Open
Choose
A4 - VOLT
VOLTAGE27MAX_N2K.txt
Open
Choose
A5 - P OIL
PRESSURE_VDO_150PSI_N2K.txt
Open
Choose
A6 - S OIL
PRESSURE_VDO_150PSI_N2K.txt
Open
Choose
A7 - P TRAN P
PRESSURE_VDO_400PSI_N2K.txt
Open
Choose
A8 - S TRAN P
PRESSURE_VDO_400PSI_N2K.txt
Open
Choose
A9 - G TEMP
TEMPERATURE_VDO_250F_N2K.txt
Open
Choose
A10 - G OIL
PRESSURE_VDO_150PSI_N2K.txt
Open
Choose
A11 - G RW
TEMPERATURE_VDO_250F_N2K.txt
Open
Choose
Log Data File
:1\Documents\vDash_Projects\vGaugeG12C\vGauge_Sample_Log.txt
Convert
Choose
Append Log
vDash Project File
c:\users\enright1\documents\vDash_Projects\vGaugeG12C\vGaugeG
Choose
vDash Theme File
C:\Users\enright1\Documents\vDash_Projects\Themes\Gauges_Blue
Choose
OK
Cancel
Apply
Help

For playback to occur, the selected file must be set for READ-ONLY access and no ARCHIVING

Read-Only



Advanced… Clear Archive



NMEA 0183 LOG FORMAT

vDash is capable of logging received NMEA 0183 data to memory or drive storage. The log file contains the received NMEA 0183 sentences appended with a date stamp and record number. The log file is in simple TEXT format with each field separated by commas. It is easily imported to other applications.

An example of a short log file follows:.

20060531093905,000620,$IIXDR,G, 105F 2A, ,TEMP1###0*06
,$IIXDR,G, 65F 1C, ,TEMP2###1*12
$IIXDR,G, 43 0A, ,FUEL ###2*74
$IIXDR,G,17.3 37, ,VOLT1###3*16
$IIXDR,G,17.3 37, ,VOLT2###4*12
$IIXDR,G,17.3 37, ,VOLT3###5*12
$IIXDR,G, 150##3F, ,OIL ###6*17
$IIXDR,G, 150##3F, ,JET ###7*07
$IIXDR,G,--------, ,COURSE #8*0F
$IIXDR,G,--------, ,SPEED #9*74
$IIXDR,G,--------, ,TIME ##A*7D
$IIXDR,G,--------, ,BEAR ###B*7C
$IIXDR,G,--------, ,TIME ##C*7F

$IIXDR,G,--------, ,RANGE ##D*12
$IIXDR,G,001:2500, ,TAC ##E*16
$IIXDR,G, 5830 2D, ,RPM ####F*78

20060531093906,000620,$IIXDR,G, 105F 2A, ,TEMP1###0*06
,$IIXDR,G, 65F 1C, ,TEMP2###1*12
$IIXDR,G, 43 0A, ,FUEL ###2*74
$IIXDR,G,17.3 37, ,VOLT1###3*16
$IIXDR,G,17.3 37, ,VOLT2###4*12
$IIXDR,G,17.3 37, ,VOLT3###5*12
$IIXDR,G, 150##3F, ,OIL ###6*17
$IIXDR,G, 150##3F, ,JET ###7*07
$IIXDR,G,--------, ,COURSE #8*0F
$IIXDR,G,--------, ,SPEED #9*74
$IIXDR,G,--------, ,TIME ##A*7D
$IIXDR,G,--------, ,BEAR ###B*7C
$IIXDR,G,--------, ,TIME ##C*7F
$IIXDR,G,--------, ,RANGE ##D*12
$IIXDR,G,001:2500, ,TAC ##E*16
$IIXDR,G, 5830 2D, ,RPM ####F*78

The current date and time is appended to each record with the following format "YYYYMMDDHHMMSS". This is followed by an 8 digit record count separated by a comma. This allows for a unique signature for each record collected.

To specify data logging in NMEA 0183 format, choose a log file name with a ".txt" file extension.

CSV LOG FILE FORMAT

vGauge/SeaGauge data can be logged in a comma separated file format (.csv) compatible with most spreadsheet programs.

When a logging event is started, the selected file is appended with comma separated sensor labels on a new line followed by comma separated sensor data on a new line for each update interval defined in the CONNECT tab of the PREFERENCE dialog. Update intervals can range from once per second up to several minutes depending on selection.

Following is a short example of a CSV log file format.

```
TIME,INDEX,P TEMP  ,0,S TEMP  ,1,HEX TEMP,2,ENG TEMP,3,P VOLT  ,4,OIL
PSI ,5,FUEL PSI,6,FUEL    ,7,AMPS    ,8,S VOLT  ,9,P EGT   ,10,S EGT
,11,RPM     ,15,

20080723120403,004790, 100,43, 109,49,  65,34, 199,7D, 1.1,0B,  30,AE,
57,C4,  55,9D, 3.3,20,14.0,82, 264,40, 320,50, 2720 ,88,
```

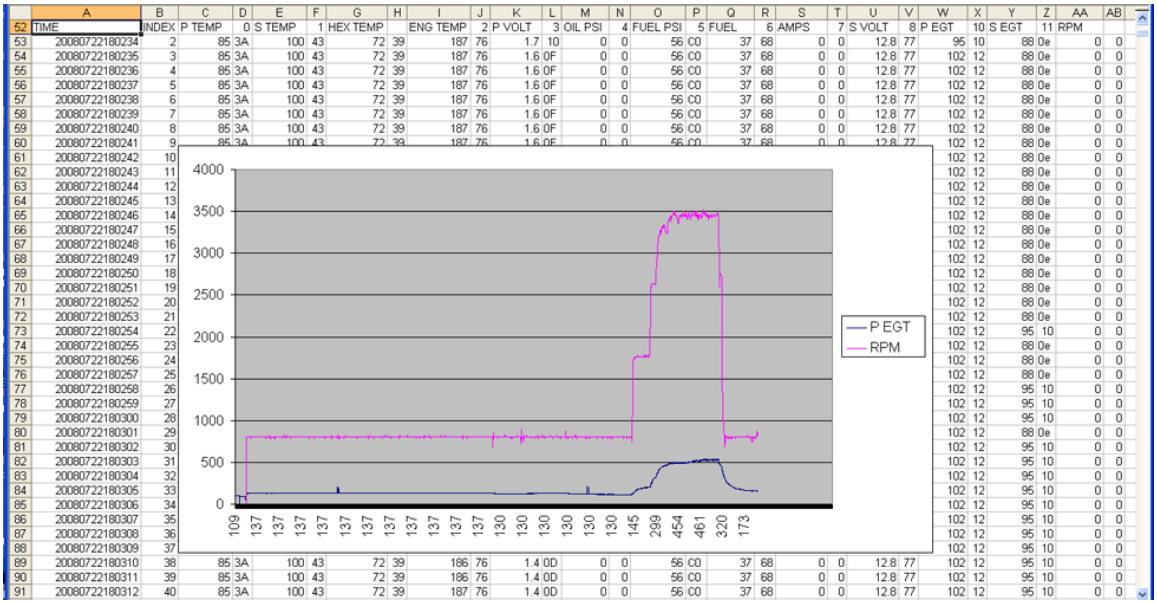
```
20080723120404,004791, 100,43, 109,49,  65,34, 198,7D, 1.1,0B,  30,AC,
59,CA,  56,9F, 3.5,22,14.0,82, 271,42, 320,50, 2740 ,89,

20080723120405,004792, 100,43, 110,4A,  65,34, 198,7D, 1.1,0B,  33,B6,
59,CA,  56,9F, 3.5,22,14.0,82, 278,44, 327,52, 2780 ,8B,

20080723120406,004793, 100,43, 111,4A,  65,34, 198,7D, 1.1,0B,  30,AC,
59,CA,  57,A1, 3.7,24,14.0,82, 285,46, 327,52, 2800 ,8C,

20080723120407,004794, 100,43, 112,4B,  65,34, 198,7D, 1.1,0B,  30,AC,
59,CA,  59,A7, 3.9,26,14.0,82, 292,48, 334,54, 2820 ,8D,

20080723120408,004795, 100,43, 112,4B,  65,34, 198,7D, 1.1,0B,  29,AA,
59,CA,  59,A8, 3.7,24,14.0,82, 285,46, 341,56, 2860 ,8F,

20080723120409,004796, 100,43, 112,4B,  65,34, 198,7D, 1.1,0B,  29,AA,
59,CA,  60,AA, 3.7,24,14.0,82, 292,48, 334,54, 2880 ,90,

20080723120410,004797, 100,43, 112,4B,  65,34, 198,7D, 1.1,0B,  29,A7,
59,CA,  60,AA, 3.5,22,14.1,83, 299,4A, 348,58, 2900 ,91,

20080723120411,004798, 100,43, 112,4B,  65,34, 197,7C, 1.1,0B,  29,AA,
59,CA,  61,AC, 3.7,24,14.0,82, 299,4A, 348,58, 2900 ,91,
```

Each new line is started by a time stamp and line count followed by pairs of calibrated and RAW sensor data. Each new line is ended with carriage return.

To specifying data logging in CSV format, create a log file name with a ".csv" extension.

Log files created using FLASH memory Sticks on vGauge/SeaGauge-Remote units follow the same format and naming rules and can be opened and viewed in the same manner.

After opening file in a spreadsheet program, select the desired columns to create a plot of time history information as shown in the example.



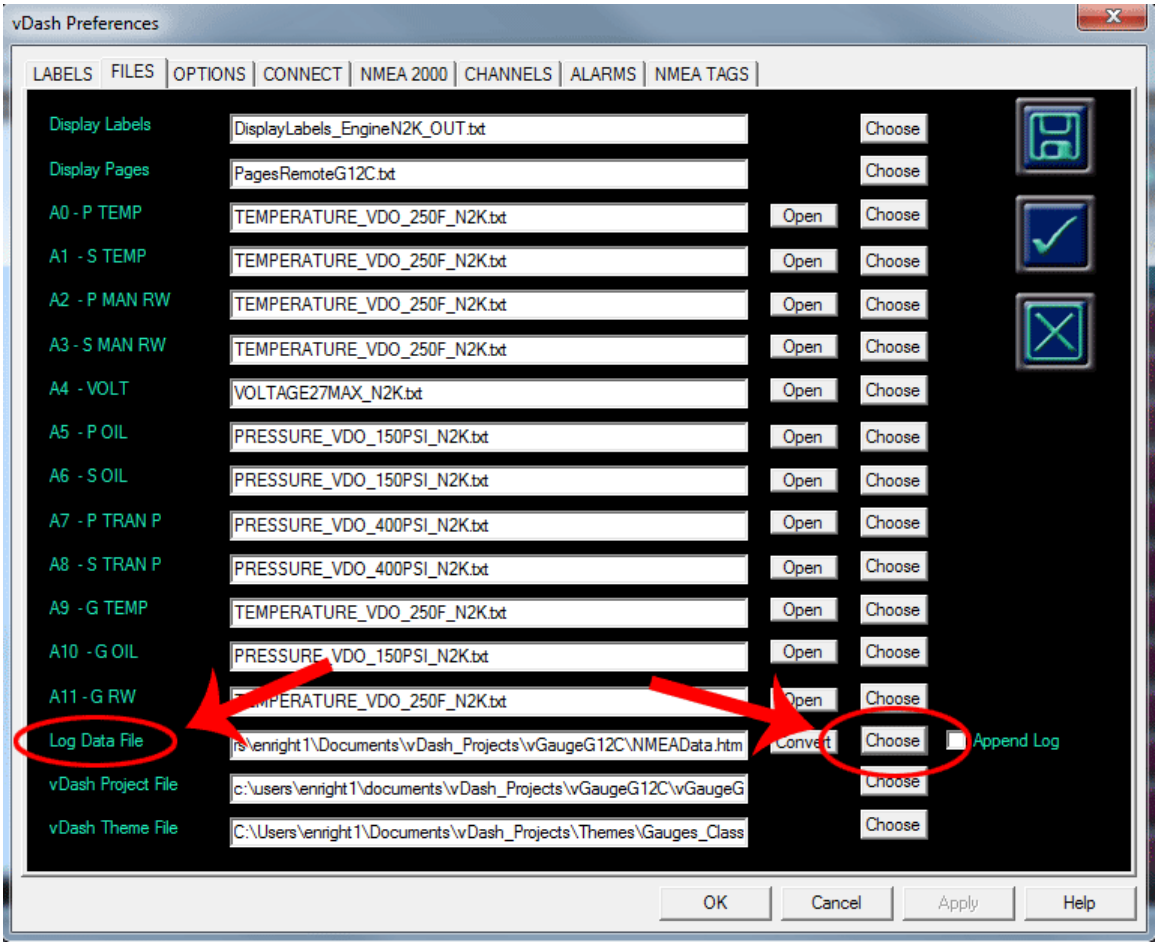
LOGGING ON TO WEB SERVER

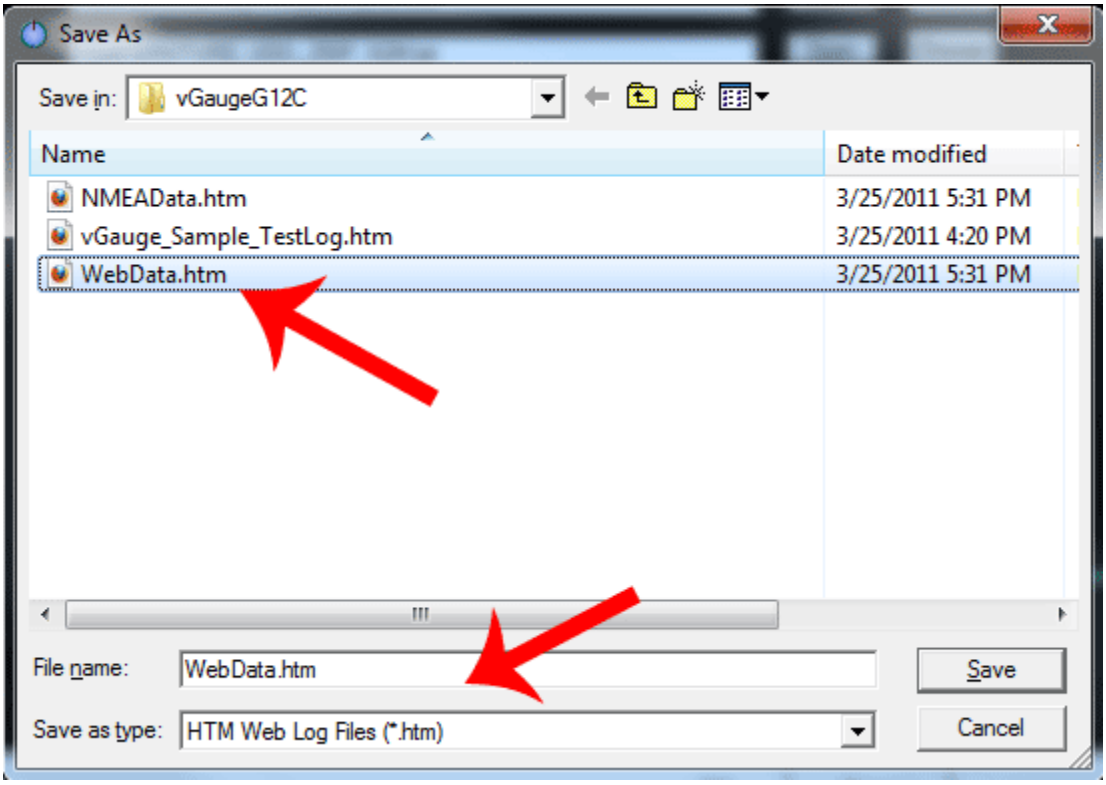
vDash can support posting data directly to a Web Server by creating a HTML file of live data. The Web Server can then be combined with appropriate Web Pages to display the data in real-time using standard Web Browsers on devices such as PCs, Smart Phones, and other Internet enabled devices.

The Browser based interface will only support viewing of data and cannot be used to configure the Remote Sensor Unit or Displays.

To enable Live Web Posting and viewing, simply select the *.htm file type when choosing a Log File in the vDash Files List. A HTML formatted file will be created for each update interval. If the APPEND option is not selected, the HTML file will be constantly overwritten with only the latest update and older data discarded.

If the APPEND option is enabled, the HTML file will grow in size with each new update. Web viewing of logged data will only show the most recent updates.



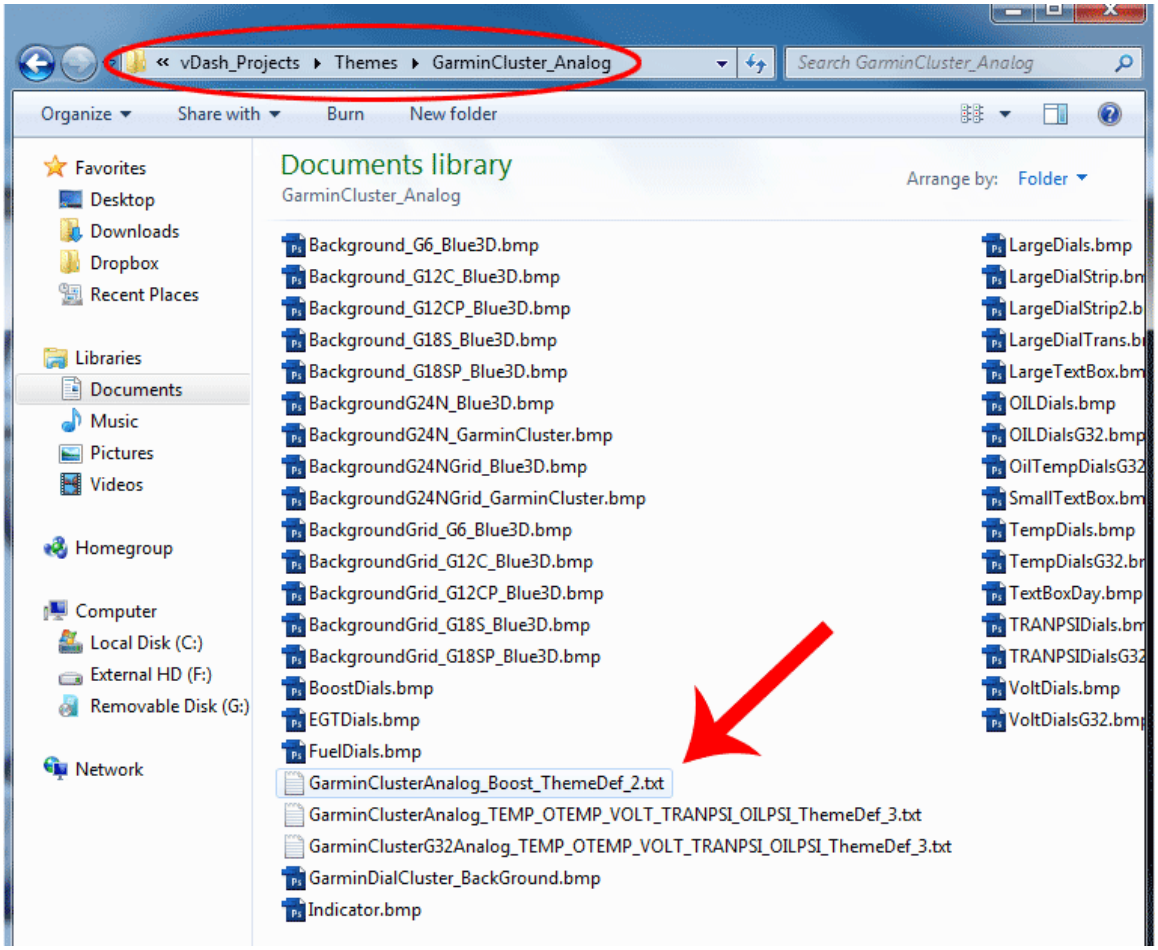


Be sure to choose a location for the HTM file accessible by the Web Server hosting the Viewer Web Pages. The simplest method is to share the SeaGaugeLive folder created during the vDash installation and then configure the WebServer to use the folder as a virtual directory. Otherwise, copy the SeaGaugeLive folder to the Web Server root directory and configure the vDash Log file location to point within the same directory.

For more details on setting up a Web Server with Microsoft IIS, please visit Microsoft Support at http://support.microsoft.com/kb/323972 or contact the Chetco Digital Support Team at support.digitalmarinegauges.com

Theme Configuration

vDash supports loading different graphic libraries called THEMES. A library contains the styles of gauges available, sizes, colors, text format and positions, and display backgrounds. All the elements are contained in a THEME subdirectory along with a Theme Definition Script file used by vDash when creating gauge layouts.



Theme libraries are developed to match themes loaded into color display heads but can also be created independently of displays for use exclusively by the vDash application.

Theme definition files are text scripts that can be easily modified to create an unlimited variety of displays. The basic structure of the file is a list of graphic element specifies that define the gauge graphic element, the Text Size, Color, Font, and position, and the Graphic element Name.

For example:

// Bitmap File Name for LargeDial strip	Comment Line
[LargeDialStrip_White.bmp]	Name of file containing strip of graphic elements for Large dial. Each element in strip defines the gauge to draw based on sensor value
// Display Name for graphic format=[NAME]	Comment Line
[LargeDials]	Display Name for graphic element. This is the name that appears in the drop-down list
// Dimensions for each dial segment (X,y,z) - format=[XXX,YYY,ZZZ]	Comment line
[256,256,015]	Parameters that define the width, height, and number of graphic elements in the strip
// Offset for Sensor Display Value (x,Y) - format = [XXX,YYY]	Comment line
[095,175]	Parameters that define the X and Y offset for placing the Sensor Value Text
// Font Name for Sensor Value - format = [FONTNAME]	Comment Line
[Arial]	Parameter that specifies the Font style to us for the Sensor Value text
//Font Size for Sensor Value - format = [000]	Comment Line
[024]	Parameter that specifies the Size of text to use for Sensor Value
//Font color for Sensor Value - format = [RRR,GGG,BBB]	Comment Line
[020,006,212]	Parameter that specifies the RED, GREEN, BLUE, value to define the Text Color for the Sensor Value
// Offset for Sensor Label (x,Y) - format = [XXX,YYY]	Comment line
[085,020]	Parameters that define the X and Y offset for placing the Sensor Label Text
// Font Name for Sensor Label - format = [FONTNAME]	Comment Line
[Arial]	Parameter that specifies the Font style to us for the Sensor Label text
//Font Size for Sensor Label - format = [000]	Comment Line
[024]	Parameter that specifies the Size of text to use for Sensor Label
//Font color for Sensor Label - format = [RRR,GGG,BBB]	Comment Line
[020,006,212]	Parameter that specifies the RED,

	GREEN, BLUE, value to define the Text Color for the Sensor Label

The Theme Definition file contains descriptions for 11 different Gauge Graphic elements that will appear in the drop-down menu when constructing gauge layout pages.

Custom Themes can be created by copying and modifying an existing Theme Folder and designing new Gauge Graphic Strips to match.

One of the features of the Theme Definition File is the ability to precisely position individual graphic items. Each of the 16 display types contains a matrix of Row and Column position information consisting of 8 Rows and 8 Columns. A three digit value assigns both the X and Y coordinate of the upper left corner of each graphic element placed on the current display page.

When elements are placed on the Display Screen, information from the corresponding table is used to position the elements. Modification of the appropriate table will reposition the elements to match.

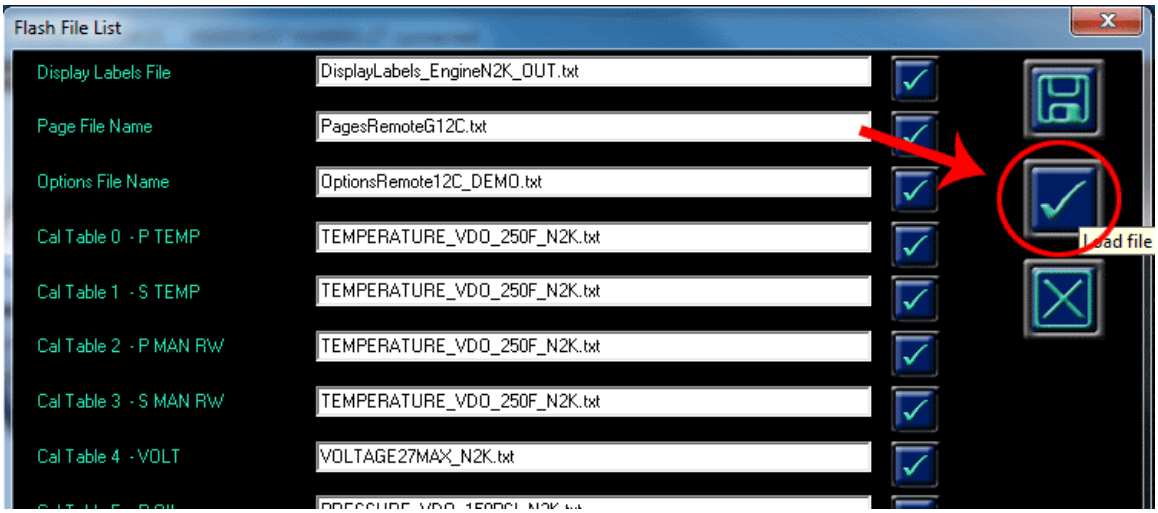
```
// **** Display Type 13 Graphic Position Arrays  ****
[013]// Display Type
[000,180,360,440,720,900]// Columns  0-5  Row 0

[000,180,360,440,720,900]// Columns  6-11 Row 1

[000,180,360,440,720,900]// Columns 12-17 Row 2

[000,180,360,440,720,900]// Columns 18-23 Row 3

[000,180,360,440,720,900]// Columns 24-29 Row 4

[000,180,360,440,720,900]// Columns 30-35 Row 5

[000,180,360,440,720,900]// Columns 36-41 Row 6

[000,180,360,440,720,900]// Columns 42-48 Row 7

[000,000,000,000,000,000]// Row Index 0

[180,180,180,180,180,180]// Row Index 1

[266,266,266,266,266,266]// Row Index 2

[400,400,400,400,400,400]// Row Index 3

[485,485,485,485,485,485]// Row Index 4

[570,570,570,570,570,570]// Row Index 5

[660,660,660,660,660,660]// Row Index 6

[800,800,800,800,800,800]// Row Index 7
```

THEME GRAPHIC INDEXES FILES

Each Theme Folder contains a FLASH UPDATE file for defining the index numbers used by the graphic elements (GraphicIndex.txt). The animated graphic elements are preloaded into the displays and access by lookup of the index number. The GraphicIndex.txt will need to programmed into a Remote Sensor Unit whenever the theme is modified.

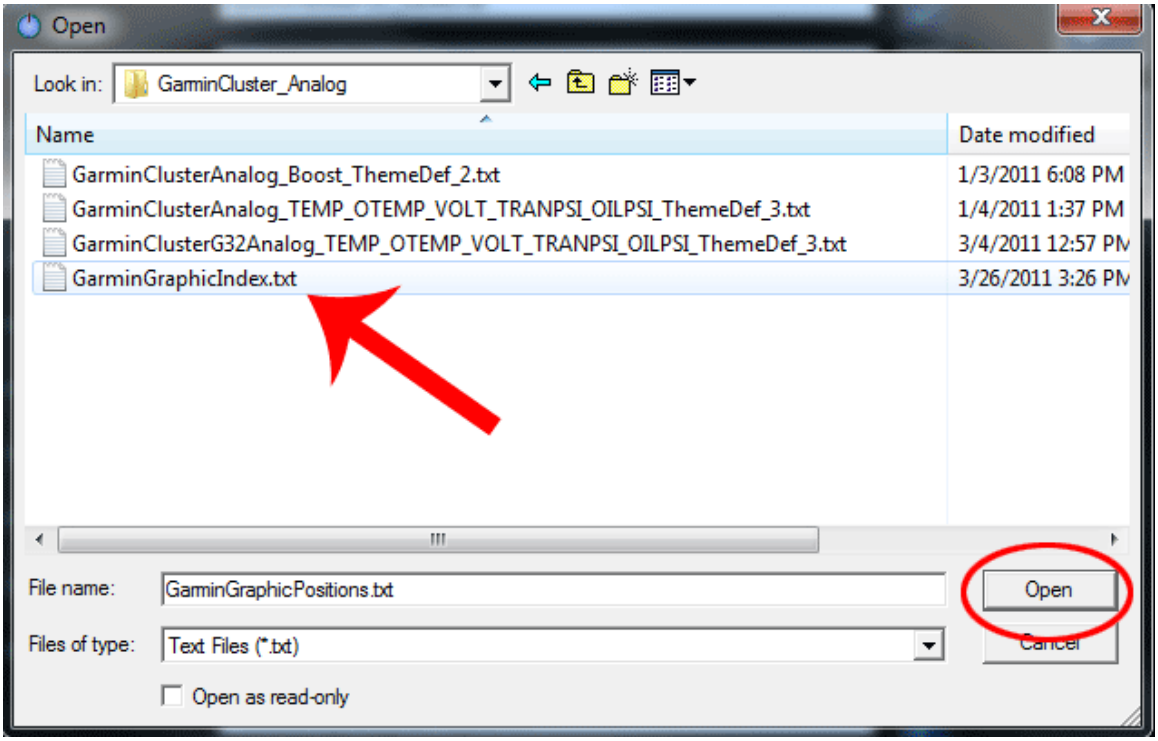
To upload a new GraphicIndex.txt file to a Remote Sensor Unit, use the Flash Files dialog to select the desired file and transfer to the connected unit. Choose the Flash Files icon from the Tool Pallet (small check mark):

Choose the Large Checkmark Icon from the right hand column:



Navigate to the desired Themes Folder and choose the GraphicIndex.txt file

Select OPEN and complete the Flash update procedure to load new indexes.

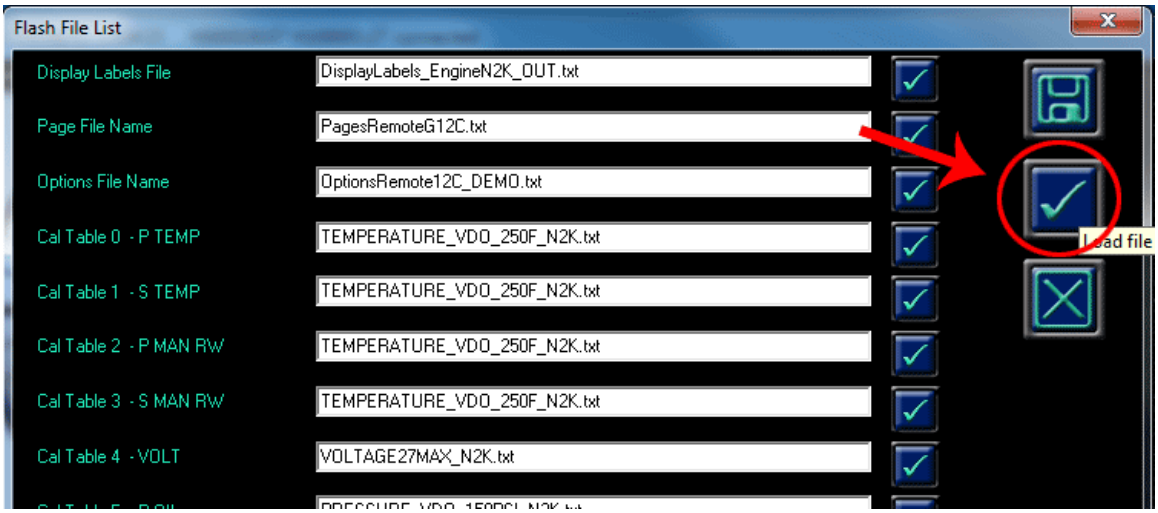


THEME GRAPHIC POSITION FILES

Each Theme Folder contains a FLASH UPDATE file for defining the possible screen positions used by the graphic elements (GraphicPositions.txt). The 64 possible positions of each graphic element are preloaded into the displays and accessed based on user configuration of each display page. The GraphicPosition.txt file will need to be programmed into a Remote Sensor Unit whenever the theme is modified.

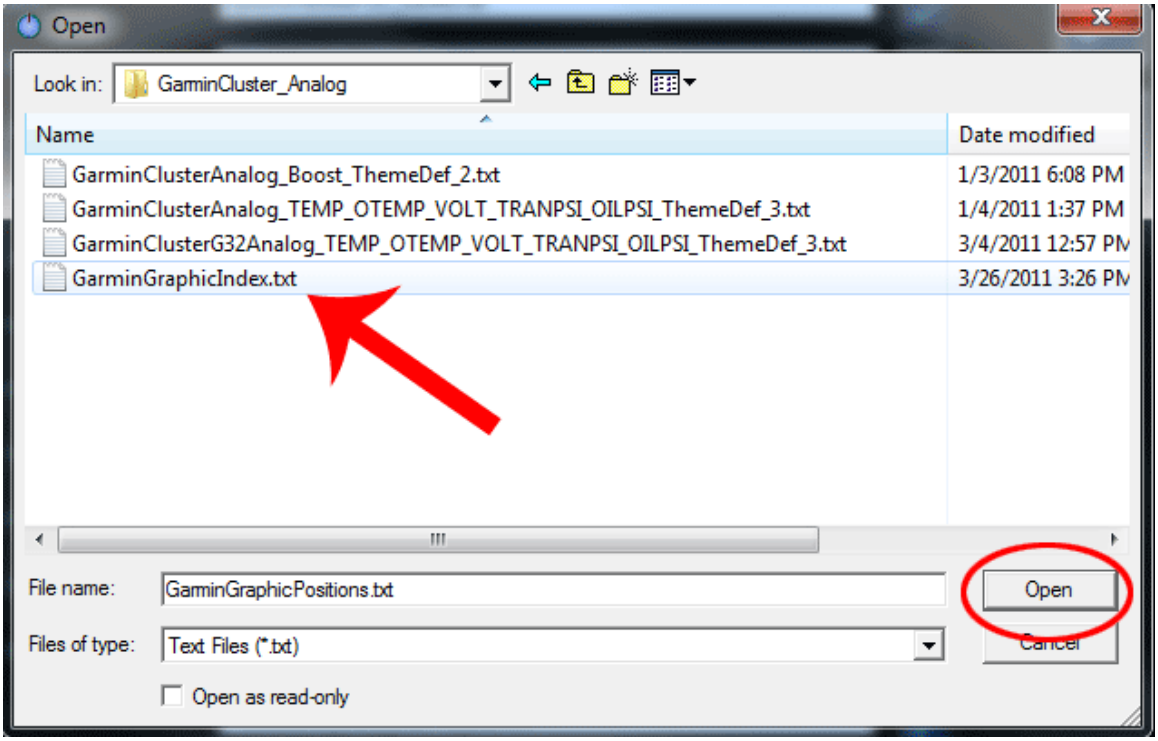
To upload a new GraphicPosition.txt file to a Remote Sensor Unit, use the Flash Files dialog to select the desired file and transfer to a connected unit. Choose the Flash Files icon from the Tool Pallet (small check mark).

Choose the Large Checkmark Icon from the right hand column:



Navigate to the desired Themes Folder and choose the GraphicIndex.txt file

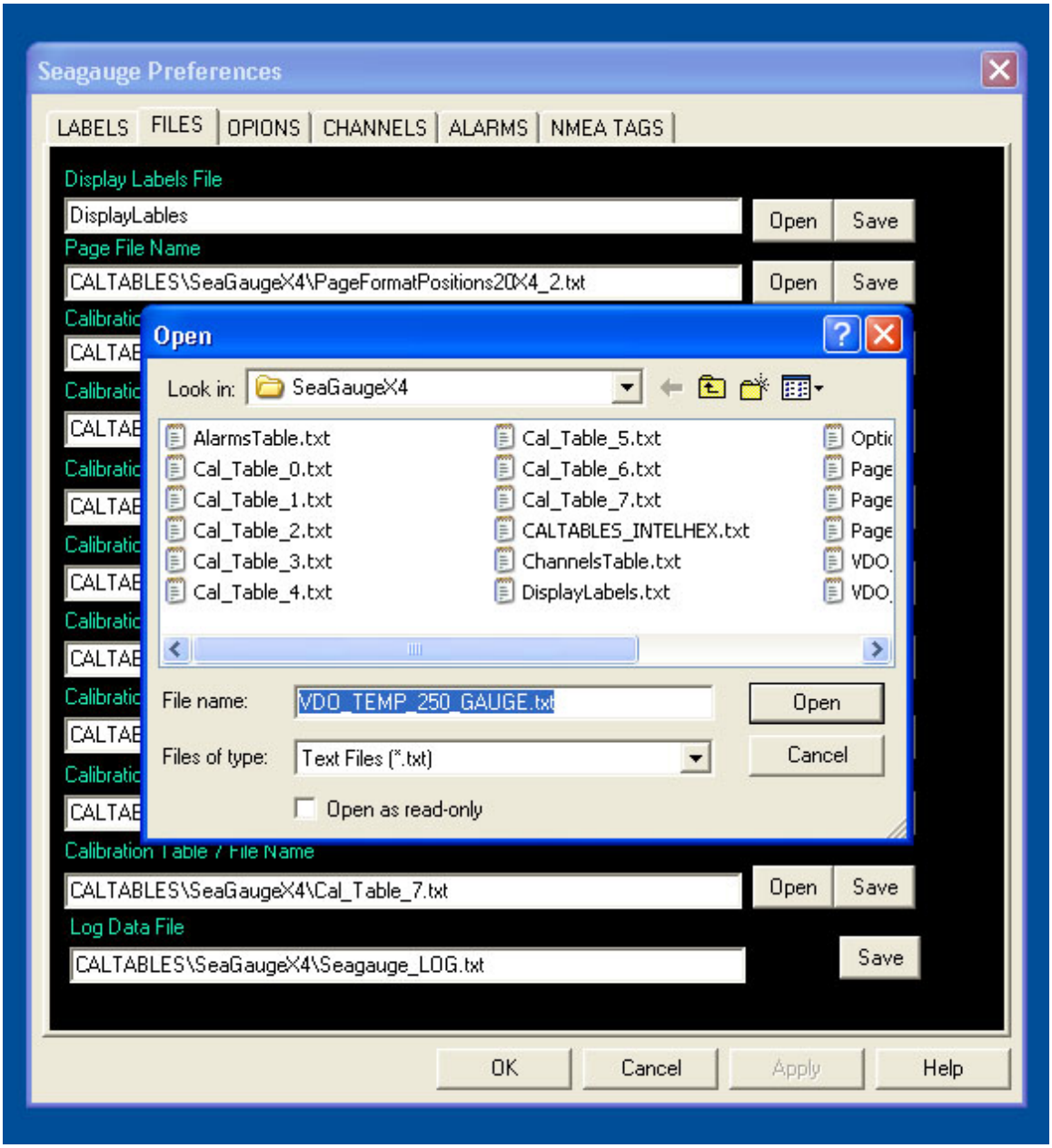
Select OPEN and complete the Flash update procedure to load new indexes.


Open
Look in:
GarminCluster_Analog
Name
Date modified
GarminClusterAnalog_Boost_ThemeDef_2.txt
1/3/2011 6:08 PM
GarminClusterAnalog_TEMP_OTEMP_VOLT_TRANPSI_OILPSI_ThemeDef_3.txt
1/4/2011 1:37 PM
GarminClusterG32Analog_TEMP_OTEMP_VOLT_TRANPSI_OILPSI_ThemeDef_3.txt
3/4/2011 12:57 PM
GarminGraphicIndex.txt
3/26/2011 3:26 PM
File name:
GarminGraphicPositions.txt
Open
Files of type:
Text Files (*.txt)
Cancel
Open as read-only

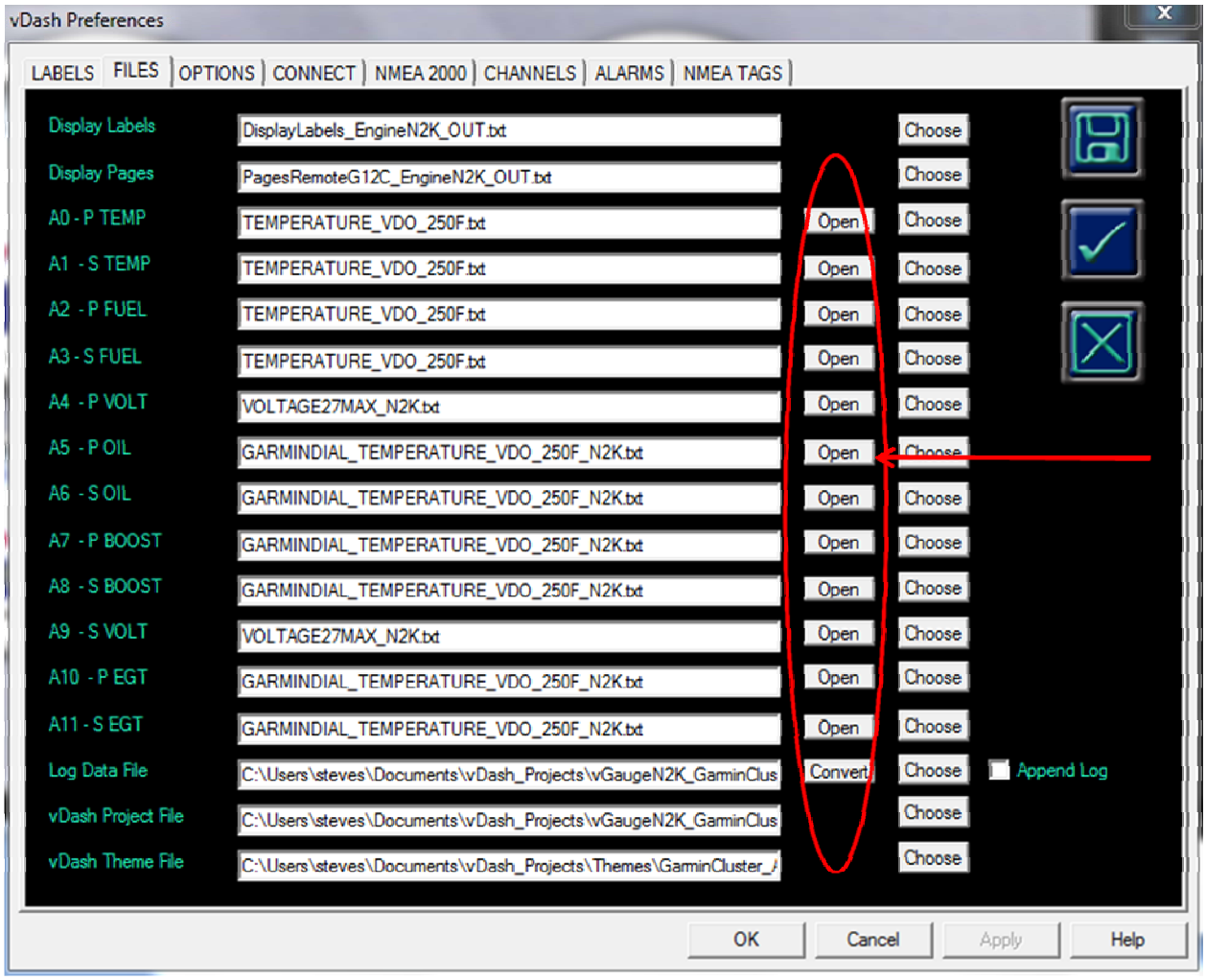
Editing Calibration Tables

Calibration tables are used to lookup display values for each of the 8 analog inputs. Use of separate calibration files allows for easy modification and great flexibility on the types of sensors that can be used with vGauge/SeaGauge™ units. The order of calibration files in the Files Dialog list must match the assignments of Display Labels. For example Calibration File 0 must match Display Label 0

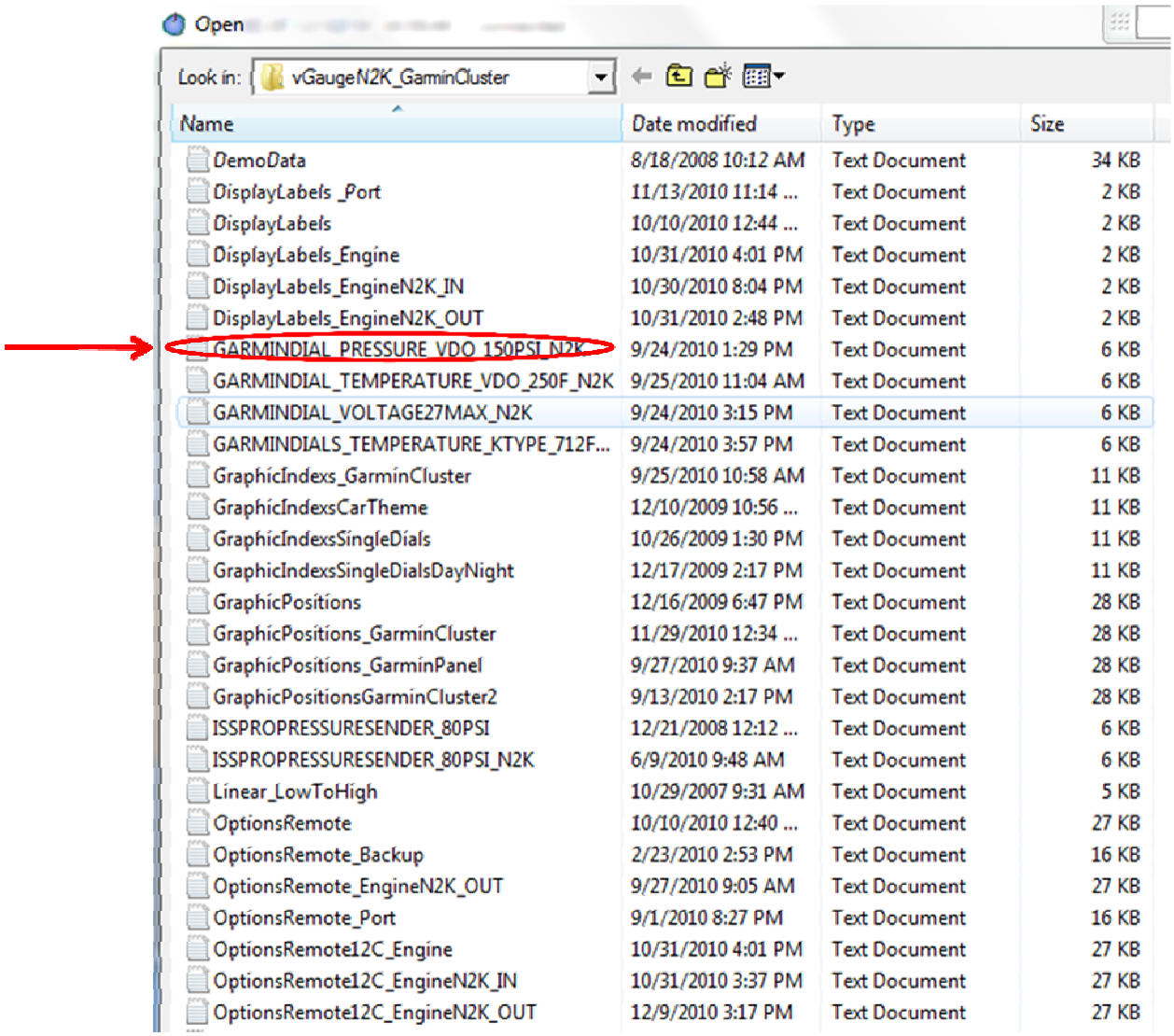
Calibration files can be directly edited from the Files Configuration screen by using the OPEN button for the selected file.

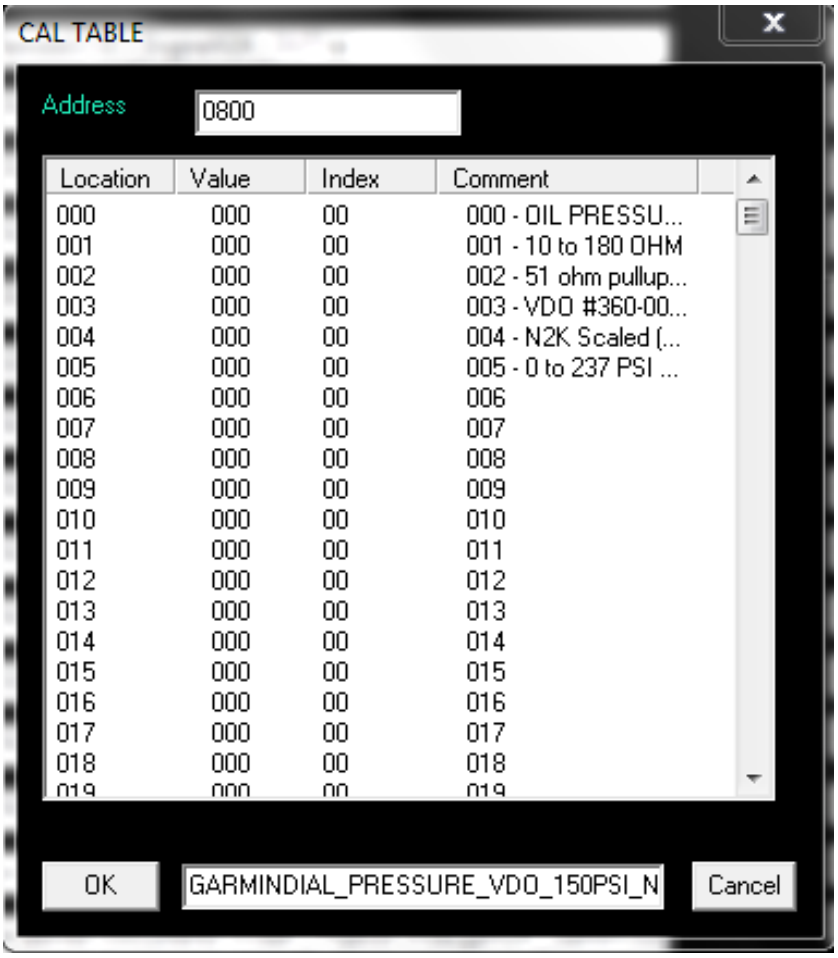


From the standard Open File dialog, pick the desired file for editing.



A new dialog will appear to allow scrolling through the select file and displaying the contents of the calibration table. Calibration files must be constructed in a proper format therefore changes can not be made directly. Instead **double click on the desired row** to initiate changing any values.


Open
Look in: vGaugeN2K_GarminCluster
Name
Date modified
Type
Size
DemoData 8/18/2008 10:12 AM Text Document 34 KB
DisplayLabels _Port 11/13/2010 11:14 ... Text Document 2 KB
DisplayLabels 10/10/2010 12:44 ... Text Document 2 KB
DisplayLabels_Engine 10/31/2010 4:01 PM Text Document 2 KB
DisplayLabels_EngineN2K_IN 10/30/2010 8:04 PM Text Document 2 KB
DisplayLabels_EngineN2K_OUT 10/31/2010 2:48 PM Text Document 2 KB
GARMINDIAL_PRESSURE_VDO_150PSI_N2K 9/24/2010 1:29 PM Text Document 6 KB
GARMINDIAL_TEMPERATURE_VDO_250F_N2K 9/25/2010 11:04 AM Text Document 6 KB
GARMINDIAL_VOLTAGE27MAX_N2K 9/24/2010 3:15 PM Text Document 6 KB
GARMINDIALS_TEMPERATURE_KTYPE_712F... 9/24/2010 3:57 PM Text Document 6 KB
GraphicIndexs_GarminCluster 9/25/2010 10:58 AM Text Document 11 KB
GraphicIndexsCarTheme 12/10/2009 10:56 ... Text Document 11 KB
GraphicIndexsSingleDials 10/26/2009 1:30 PM Text Document 11 KB
GraphicIndexsSingleDialsDayNight 12/17/2009 2:17 PM Text Document 11 KB
GraphicPositions 12/16/2009 6:47 PM Text Document 28 KB
GraphicPositions_GarminCluster 11/29/2010 12:34 ... Text Document 28 KB
GraphicPositions_GarminPanel 9/27/2010 9:37 AM Text Document 28 KB
GraphicPositionsGarminCluster2 9/13/2010 2:17 PM Text Document 28 KB
ISSPROPRESSURESENDER_80PSI 12/21/2008 12:12 ... Text Document 6 KB
ISSPROPRESSURESENDER_80PSI_N2K 6/9/2010 9:48 AM Text Document 6 KB
Linear_LowToHigh 10/29/2007 9:31 AM Text Document 5 KB
OptionsRemote 10/10/2010 12:40 ... Text Document 27 KB
OptionsRemote_Backup 2/23/2010 2:53 PM Text Document 16 KB
OptionsRemote_EngineN2K_OUT 9/27/2010 9:05 AM Text Document 27 KB
OptionsRemote_Port 9/1/2010 8:27 PM Text Document 16 KB
OptionsRemote12C_Engine 10/31/2010 4:01 PM Text Document 27 KB
OptionsRemote12C_EngineN2K_IN 10/31/2010 3:37 PM Text Document 27 KB
OptionsRemote12C_EngineN2K_OUT 12/9/2010 3:17 PM Text Document 27 KB



Each row in a calibration file contains a row index (can not be modified), a display lookup value (no more then 6 characters), a graphic index value (2 digit hexadecimal), and a comment field (16 characters max). Double clicking any row brings up an edit dialog to allow changes to fields in the selected row. Click **OK** to save any changes or **CANCEL** to discard any changes.

The Location value is the index vale from the analog converter that is used to lookup a 6 character display value and a 2 character hexadecimal value for a given sensor signal level. Using a table lookup procedure allows for easy adaptation to just about any type of sensor or sender. The hexadecimal value is used by Bar graph, Dial, and Histogram displays to calibrate full range display and adjust resolution. It has min value of 0 and a max value of 0xFF (256 decimal).

The "#" symbol can be used in the display value to skip spaces just as in setting Display Labels.

The address field is used to locate calibration table to the associated sensor/display label according to the following table.

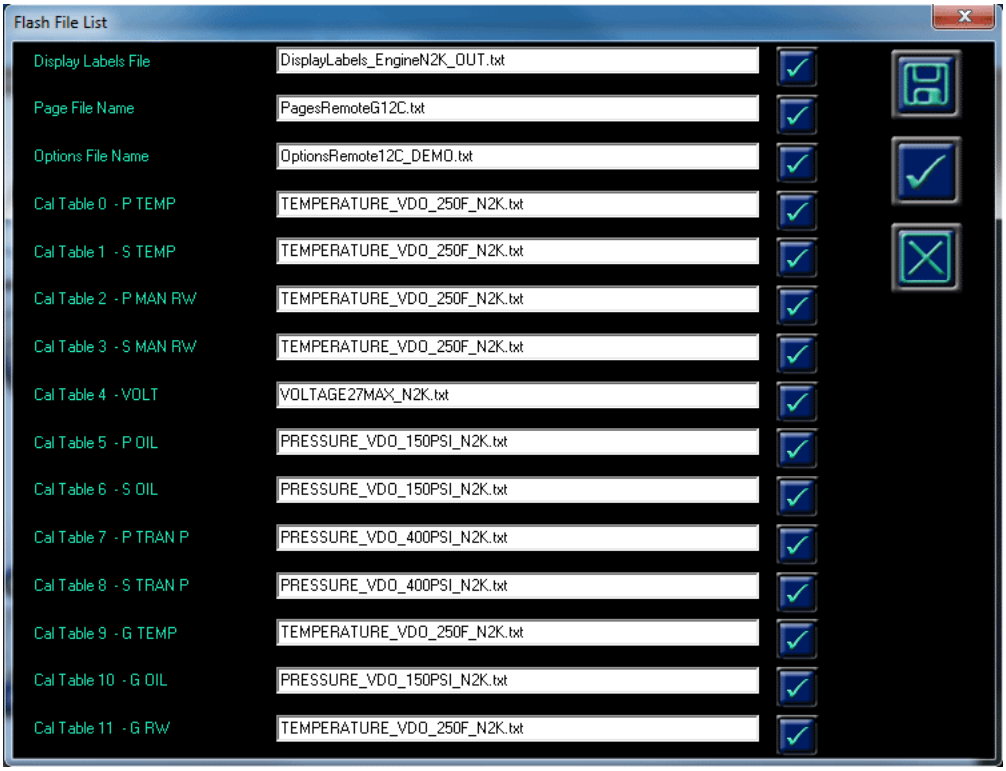
Address	Sensor/Display Label
0800	Calibration Table 0
1000	Calibration Table 1
1800	Calibration Table 2
2000	Calibration Table 3
2800	Calibration Table 4
3000	Calibration Table 5
3800	Calibration Table 6
4000	Calibration Table 7
4800	Calibration Table 8
5000	Calibration Table 9
5800	Calibration Table 10
6000	Calibration Table 11

If changes are made to Calibration files, they must be saved or will be lost. Changes made to calibration table will be reflected until the vDash application is closed and restarted so the all files are reloaded.

Flash Programming

The vDash utility can be used to download new calibration tables to SeaGauge or vGauge/SeaGauge Units using the

FLASH COMMAND option. The unit must be connected and receiving data before new information can be transferred.



The FLASH COMMAND will start a sequence of steps to copy a valid Calibration Table file to the selected unit. The fist step is a File Dialog used to select the desired formatted file. Only properly formatted Calibration Tables or INTEL HEX files can be used to reprogram the unit. If the utility finds an error in the selected file format, it will stop the process

The vGauge/SeaGauge unit must be MASTER MODE to support any Flash Programming via serial port.

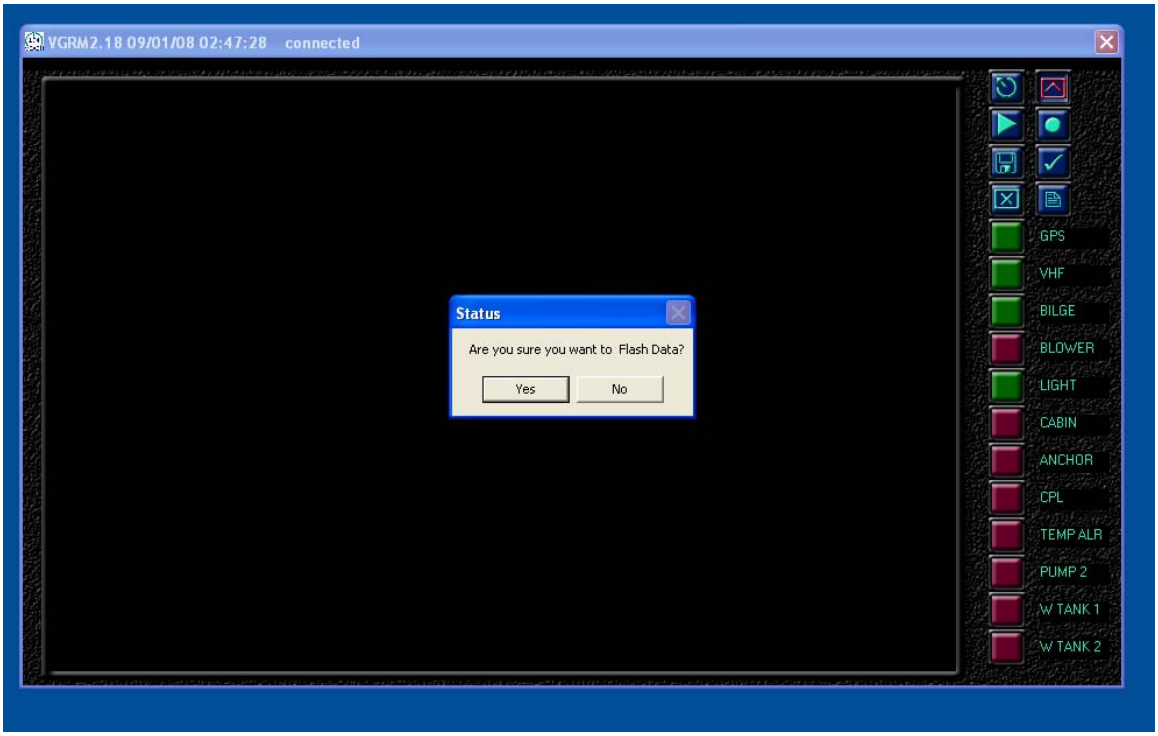
The list of possible files is populated from the property pages under the settings dialogs and can not be changed here

The vDash application supports two types of Flash Files – TEXT and INTEL HEX. Text files are generated directly by the vDash application such as calibration files and Page definition files and are loaded via the serial port interface. INTEL HEX files are special files used for firmware upgrades only and can only be programmed using a special flash cable.

After a proper Calibration Table file or firmware file is selected, the second step is to confirm the operation and verify the SeaGauge or vGauge/SeaGauge unit is ready for transfer. After the file is chosen the target unit will enter programming mode indicated by the display:

READY->

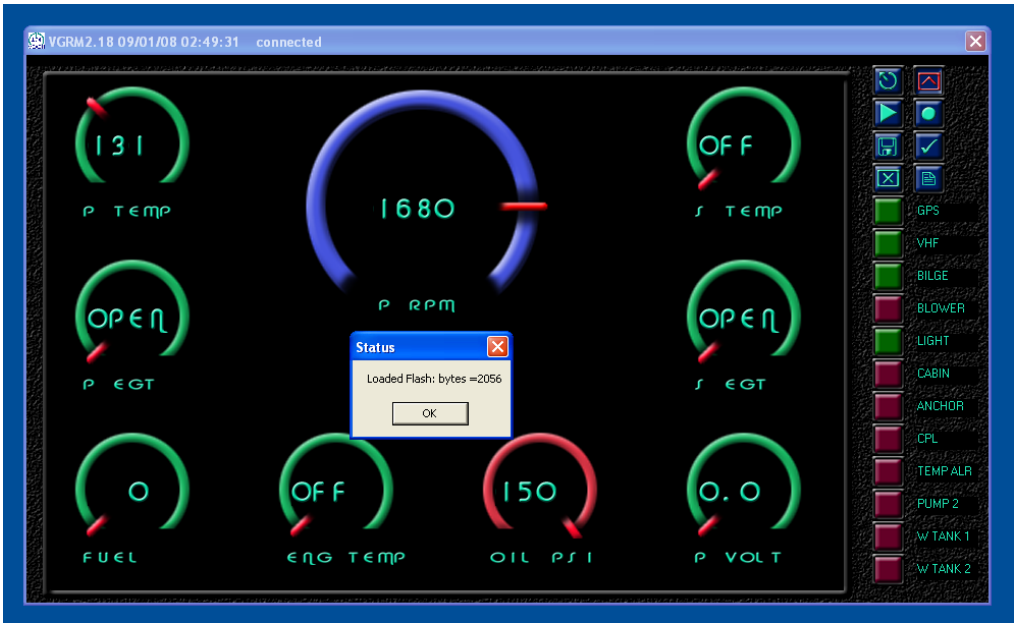
If the YES button on the confirmation dialog is not selected within 10 seconds, the target unit will terminate programming mode and reset. You must select the YES option within 10 seconds to continue.



The third step will erase the selected data and transfer new data for re-programming. During this time the screen will update with each new address location being programmed. This may take from a few seconds to several minutes depending on the communication speed.

The top row of the display will display the word "FLASH" and the data area will display the current address in hexadecimal notation. The address will update till all data is transferred.

The final step will confirm the number of bytes transferred and reset the target. After flashing a new file it is a good idea to restart both the target unit and the vDash utility to be sure both are back in sync.



Com Ports

vDash listens to selected com ports for incoming NMEA data. If no recognized port is present, the current page will not update. Be sure to select the correct com port.

If making a connection with the supplied serial cable, most PC's will use COM port 1 or 2.

If making a connection via a Bluetooth device, be sure to get the properties of the Bluetooth interface to determine which virtual COM port it is using and set vDash to the indicated port (usually 5 – 8).

If using a USB to Serial converter or USB to USB converter, be sure to determine the virtual COM port number assigned during driver installation. Never assume the COM port number is always the same. COM port numbers will change when other devices are connected.

To determine the correct COM port number – use Windows Device Manager to detect the current value

Refer to document – vDash_USB_INSTALL.pdf available on the Chetco Digital Instruments WEB site for more information on USB driver installation and COM ports.

Baud Rates

vDash can be configured to listen at several BAUD rates. Select the Baud rate to match the sending device or Display Head.

Most units are configured with a baud rate of 57600 but other common rates are 38400 and 9600.

The default baud rate is 9600 if no other is specified.

If after pressing the connect button , no data appears on the screen but the title bar states "CONNECTED" it is usually a mismatch on baud rate selection.

First verify the correct baud rate of the target device and reset vDash to the new value a try to connect again.

If properly connected at correct baud rate, the title bar will show the vGauge/SeaGauge version String and received date and time.

Capture Intervals

vDash can capture and playback data to a specified LOG file. The file capture and playback rate is controlled by the Capture Interval. Choose the interval appropriate to the desired data rate.

The interval can be adjusted in the CONNECT TAB of the preferences Dialog.

An interval of 1 seconds records or plays back one complete record per second. A single record is all 16 possible channels. For example:

20060531093915,000620,$IIXDR,G, 105F 2A, ,TEMP1###0*06
,$IIXDR,G, 65F 1C, ,TEMP2###1*12
$IIXDR,G, 43 0A, ,FUEL ###2*74
$IIXDR,G,17.3 37, ,VOLT1###3*16
$IIXDR,G,17.3 37, ,VOLT2###4*12
$IIXDR,G,17.3 37, ,VOLT3###5*12
$IIXDR,G, 150##3F, ,OIL ###6*17
$IIXDR,G, 150##3F, ,JET ###7*07
$IIXDR,G,--------, ,COURSE #8*0F
$IIXDR,G,--------, ,SPEED #9*74
$IIXDR,G,--------, ,TIME ##A*7D
$IIXDR,G,--------, ,BEAR ###B*7C
$IIXDR,G,--------, ,TIME ##C*7F
$IIXDR,G,--------, ,RANGE ##D*12
$IIXDR,G,001:2600, ,TAC   ##E*15
$IIXDR,G, 5820 2D, ,RPM ####F*79

Calibration Tables

vGauge/SeaGauge utilizes twelve modifiable calibration tables to convert sensor data into user readable display information. The internal Analog-to-Digital converter converts sensor voltages to 10-bit values. The converter can resolve voltages to 2.5/1024 = 2.4 mVolts. These values are averaged and then used to lookup 8 character values form a 256 point lookup table. The use of a lookup table allows for accurate readings from non-linear sensors like temperature senders. The lookup table also allows for easy modification of display values to suit individual preferences and senders.

Following is an example of a partial table used to display battery voltage. The actual table has 256 indexed values. The measured voltage has a range from 0 to 3.3 volts. In this example it is desired to measure battery voltage from 0 to 18 volts so the input voltage from the battery is scaled down using a voltage divider ratio of 3.3/18 = 0.1833. The scaled down voltage is converted to an averaged digital value and then used as an index lookup in the table. For example an Input voltage of 1.178 volts becomes index value 18 in the table which corresponds to the 8 character display value of 1.1 vdc. Using this method allows the SeaGauge to display just about any range of values form a large variety of sensors/senders.

Index	Input Voltage	Measured Voltage	Display value
1	0.065	0.012968	0 vdc
2	0.131	0.025936	0.1 vdc
3	0.196	0.038904	0.1 vdc
4	0.262	0.051872	0.2 vdc
5	0.327	0.06484	0.3 vdc
6	0.393	0.077808	0.3 vdc
7	0.458	0.090776	0.4 vdc
8	0.523	0.103744	0.5 vdc
9	0.589	0.116712	0.5 vdc
10	0.654	0.12968	0.6 vdc
11	0.720	0.142649	0.7 vdc
12	0.785	0.155617	0.7 vdc
13	0.851	0.168585	0.8 vdc
14	0.916	0.181553	0.9 vdc
15	0.981	0.194521	0.9 vdc
16	1.047	0.207489	1.0 vdc
17	1.112	0.220457	1.1 vdc
18	1.178	0.233425	1.1 vdc
19	1.243	0.246393	1.2 vdc
20	1.309	0.259361	1.3 vdc
21	1.374	0.272329	1.3 vdc
22	1.439	0.285297	1.4 vdc
23	1.505	0.298265	1.5 vdc
24	1.570	0.311233	1.5 vdc
25	1.636	0.324201	1.6 vdc
26	1.701	0.337169	1.7 vdc
27	1.767	0.350137	1.7 vdc

Each table has 2048 characters to modify and there are 88 choices for each character for a total of over 18,000 character choices for each table. For this reason the tables are much too large to be modified directly from the Setup Mode. However table files can be obtained and downloaded to the unit to allow for modification of any table. All that is needed is a computer interface (RS232 or Bluetooth) and a communication program such as HyperTerminal or the vDash utility. Contact Checto Digital Instruments for more information on obtaining additional table files to match particular senders/sensors.

Programming files are ACSII text with 2 or 8 characters per line. Each file is loaded into a specified starting location according to the following table.

Table	*Bytes /line*	*Address*	*Start Page*	*End Page*	*Erase Command*
Sensor Labels	8	6800	0D	0D	*0D0D
Groups	1	7000	0E	0E	*0E0E
Alarms	1	7840	0F	0F	*0F0F
Channels	1	7820	74	74	*0F0F
Parameters	1	7800	75	75	*0F0F
Lookup Table 0	8	0800	01	01	*0101
Lookup Table 1	8	1000	02	01	*0202
Lookup Table 2	8	1800	03	03	*0303
Lookup Table 3	8	2000	04	04	*0404
Lookup Table 4	8	2800	05	05	*0505
Lookup Table 5	8	3000	06	06	*0606
Lookup Table 6	8	3800	07	07	*0707
Lookup Table 7	8	4000	08	08	*0808
Lookup Table 8	8	4800	09	09	*0909
Lookup Table 9	8	5000	0A	0A	*0A0A
Lookup Table 10	8	5800	0B	0B	*0B0B
Lookup Table 11	8	6000	0C	0C	*0C0C

The first line of each file is used to specify the file type and the memory to erase before loading the new data. GREAT care must be taken to be sure the correct memory locations are erased else the unit may no longer function and will have to be completely reprogrammed.

ASCII TEXT Format

vDash supports only two types of table formats – 8 characters per line and 1 byte per line. Multiple characters per line are used for Strings such as display labels and calibration tables. Single byte per line are used for parameters such as alarms and display groups.

It is very important to use the correct format when editing a table.

The following is an example of the first few lines of a sensor calibration table that uses the 8 character per line format. All characters following the second quote mark "" are ignored and used as comments. String must contain 8 characters enclosed by single quotes.

```
[TABLE][B800][8][256]
db ' 0.0##00';   0  VOLTAGE 27 MAX
db ' 0.1##01';   1  1K/(1K + 10K) Divider
db ' 0.2##02';  002 2.5 Volt Reference
db ' 0.3##03';  003
db ' 0.4##04';  004
db ' 0.5##05';  005
db ' 0.6##06';  006
db ' 0.7##07';  007
db ' 0.8##08';  008
db ' 0.9##09';  009
db ' 1.0##0A';  010
```

- The string "TABLE" enclosed by "[" "]" indicates the file is a ASCII text
- The string "[B800]" indicated the starting address of "B800" HEX.
- The string "[8]" indicated there are 8 characters per line
- The string "[256]" indicates there are 256 lines in the file to download.

The following is an example of an Alarm table that uses the single byte per line format. All characters following the first comma are ignored and used as comments. A 2 character byte value in Hex format must follow the "db %" label on each line.

```
[TABLE][7800][1][512]
db %06; NumOfPages   00
db %00; NumNMEAPages   01
db %04; NumControlPages   02
db %0C; AnalogInputs   03
db %00; NMEAInputs   04
db %40; Demo Mode      05
db %07; DisplayFormat   06
db %3C; HistTC  07
db %14; P0Scale   08
db %4B; P0Time   09
```

- The string "TABLE" enclosed by "[" "]" indicates the file is a ASCII text
- The string "[7800]" indicated the starting address of "7800" HEX.
- The string "[1]" indicated there are 8 characters per line
- The string "[512]" indicates there are 512 lines in the file to download.

Intel Hex Format

An alternate format used to download program code and data files is the INTEL HEX format. This format can not be edited and is only used to download firmware updates via the serial port.

A sample listing is shown for informational purposes only. These files may be obtained from Checto Digital Instruments for firmware and maintenance updates.

[INTELHEX]0164
:1002000001E0E9000FFFE90F0FFE0C002C00A6E251
:10021000006B05B1E00E2AFB2C013C000C001C47D2
:10022000E4E0E442416B0BB0E496E4E2A0E280E05B
:10023000EBF70C001C003C004C0042336B04C34045
:100240003AFC0C011C472C4C3C7A4C005CEDE4E47D
:10025000E642656B0DC26296E6E0A0E0A0E280E4B3
:10026000EBF3B2FFB2EED618A68BFE50EA50EB705D
:10027000EF70EE84EFFE84FFFF84DFCF8F28EE9FC8
:10028000FF38EE8FFE94DFCF70EB70EAAF50EA508C
:10029000EB84DFCF8F94FFFF94EFFE94DFCF50EE1F
:1002A00050EF70EB70EAAF50EA50EB84DFCF8F94E1

- The string "INTELHEX" enclosed by "[" "]" indicates the file is a INTEL text
- The string "0164" indicates the start to end memory page to erase
- Data following the ":" symbol on each line is HEX program code data

vDash can accept and load INTEL HEX format files using the normal FLASH menu options.

90 Day Warranty

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This warranty does NOT apply in the following circumstances: (1) when the product has been serviced or repaired by anyone other than us, (2) when the product has been connected, installed, combined, altered, adjusted, or handled in a manner other than according to the instructions furnished with the product, (3) when any serial number has been effaced, altered, or removed, or (4) when any defect, problem, loss, or damage has resulted from any accident, misuse, negligence, or carelessness, or from any failure to provide reasonable and necessary maintenance in accordance with the instructions of the owner's manual for the product.

We reserve the right to make changes or improvements in our products from time to time without incurring the obligation to install such improvements or changes on equipment or items previously manufactured.

This warranty gives you specific legal rights and you may also have other rights which may vary from state to state.

REMINDER: You must retain the sales slip or sales receipt proving the date of your original purchase in case warranty service is ever required.

Chetco Digital Instruments, Inc.
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Brookings, Oregon 97415 USA
541-469-4783

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541-661-2051

U.S.A.only. Monday through Friday, except holidays.

Your unit is covered by a full 90 day warranty. (See inside for complete warranty details.) If your unit fails and the failure is not covered by the original warranty, Chetco Digital Instruments has a flat-rate repair policy that covers your unit and accessories packed with the unit at the factory. There is a 30-day warranty on all non-warranty repairs from the factory, which is similar to the original warranty, but is for 30 days rather than 90 days. For further details, please call us at the above number.

Remember, non-warranty repairs are subject to Chetco Digital Instruments published flat rate charges and 30-day warranty.

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