INSTALLATION/ OPERATIONAL QUALIFICATION
For
MiniTrend V5 Recorder

Performed By:

Honeywell

ORIGINATOR: Honeywell Inc. January 7, 2002
Date

APPROVED BY: _____ _____
Date

APPROVED BY: _____ _____
Date

APPROVED BY: _____ _____
Date

1.0 Introduction

1.1 Objective

The objective of this Installation/Operational Qualification (IQ/OQ) Protocol is to provide documented verification that all aspects of the equipment installation adhere to the manufacturer's recommendations, appropriate safety codes, and approved company specifications and design intentions. This document also demonstrates that the user has standard operating procedures (SOPs) for operator training, written methods for the verification of the calibration of the system elements, and upkeep of the system.

In order to ensure proper installation of the Honeywell MiniTrend V5 recorder components, this protocol will establish the test procedures, specific responsibilities, and acceptance to provide evidence that:

- Hardware has been installed according to manufacturer specifications.
- Hardware has been configured in accordance with user requirements.
- Software has been installed according to the manufacturer specifications.
- Software has been configured in accordance with user requirements.
- MiniTrend V5 recorder operates in accordance with manufacturer and user specifications.

1.2 Scope

The scope of this document is limited to the system hardware and software components of the Honeywell MiniTrend V5 recorder. The system will include one TrendView V5 MiniTrend recorder connections to supporting utilities and a suitable PC based software application from the TrendManager V5 Suite system management software.

Excluded from this scope:

- **Software**:
- TrendServer Pro Software
- Web Based Usage
- File Transfer Protocol
- Fuzzy Logging
- Standard Security

- **Hardware**
- Standard Input Card
- No Floppy Drive Installed

1.3 Responsibilities

The Validation Team members are identified on users specific Validation Plan or identified on attached signature sheet for this protocol.
The Validation Team members are responsible for

- Review and approval of this protocol.
- Overseeing execution of this protocol.
- Assignment of tasks to perform defined in this protocol.
- Interfacing with all appropriate departments, as well as vendors and contract laboratories, to obtain applicable procedures, manuals, drawings, and documentation necessary for the generation of this protocol and related reports.
- Assist in resolving any deviations or regulatory compliance issues.

1.4 Prerequisites

According to GAMP 3, the following documentation is identified as the basic framework for specification, design and testing.

Validation Plan - A summary document produced by the user to define the activities, procedures, and responsibilities for establishing the performance adequacy of the system.

User Requirement - Produced by the user to define clearly and precisely what the user wants the system to do, and to state any constraints, regulatory, and documentation requirements.

Functional Specification - Usually produced by supplier and describes the detailed functions of the equipment or system, i.e. what the system will do. This protocol utilized Honeywell's MiniTrend, Mulitrend Plus V5 User Manual for its Functional Specification.

Design / Configuration Specification - A complete definition of the equipment or system in sufficient detail to enable it to be built.

Standard Operating Procedures - Standard Operating procedures specific to this system have been created. (Including compliance to 21CFR11)

1.5 Referenced Documents

The following is a list of documents referenced by this document: (Included but not limited to: Validation Plan, User Requirement, Functional Specification, Design/Configuration Specification and applicable SOP's).

Note: Complete below with all applicable documentation for this system, place N/A initial and date for any spaces not required.

Document #	Location

2.0 System Overview

Application Software: TrendViewer, TrendManager Pro and Screen Designer

TrendViewer is a Windows ™ based software package, which is shipped with all recorders and allows user to view, graph, and print data from a disk or PCMCIA card interface.

The TrendManager Pro V5 is a standalone package that allows the user to fully configure recorders, as well as archive, graph, print and export data. An integral E-mail facility allows recorder data and configurations to be sent to other users and colleagues on the plant or worldwide.

Screen Designer enables the customer to design unique displays for transfer to the recorder screen. Screen layouts can be created using any combination of indicators such as trending Charts, Digital Panel Meters (DPM), Bargraphs, Bitmaps, Digital pictures and Plant diagrams. (Protocol Addendum included only when option purchased)

The Screen Designer software design package is compatible with Minitrend V5 recorders so layouts can be transferred on to single or multiple recorders giving continuity and standardization of process data.

Hardware

MiniTrend V5
Minitrend V5 system is an advanced paperless recording system, which can be fully programmed and re-configured locally via the integral keypad, or remotely from a PC. The configuration may be transferred from the PC to the recorder on a 3 ½ " 1.44 Mb floppy disk or PCMCIA card.

The Minitrend V5 is a 4 to 16-channel recorder with 5.5-inch diagonal quarter VGA color TFT LCD. The recorder is comprised of a microprocessor-controlled measurement, recording, and graphics display system.

The V5 Paperless Chart Recorder System is used to measure and record process data in a secure tamperproof format with full audit trail facilities. The data may be sampled directly from voltage or current sources, or be obtained from thermocouple or PT100 resistance thermometer sources. Ranges and accuracies are dependent upon the options selected for the system under consideration.

Optional features include Totalization function providing up to 24 independent user programmable totalization channels, Event Markers providing the facility for the user to

tag pre-defined or real-time labels to data "events" and logging conditions, Math Expressions, High/Low/Range of Change Alarms, and Transmitter Power Supply.

The data is stored on industry standard 3 ½ " 1.44Mbyte diskettes, together with all recorder configuration details, Totalization data, and Event data. An optional additional memory card (PCMCIA card) can be used in the PCMCIA Interface which will be a standard feature. This, plus the use of the Math option offers Dual Redundancy of data storage. This is a recommended system configuration for pharmaceutical manufacturing data recording. Data is time and date stamped in a digitally encrypted format that ensures data authenticity and integrity when stored to the disk. The Trend Manager V5 Suite software enables users to view this encrypted data in human readable form. Any attempt to alter specific data points would result in corruption of the whole file. Recorded chart data in the MiniTrend V5 recorder can be replayed, scrolling backwards and forwards through a chart without affecting on-going real-time recording.

The Honeywell MiniTrend V5 presents the data as strip charts (vertical and/or horizontal), tiled charts, plan diagrams and bitmap pictures. It has the capability of displaying 10 independent user definable display screens.

Recorders may be set up locally using the integral keypad and intuitive pull down menu system, or the configuration can be set up remotely using the TrendManager V5 Suite system management software (optional). Once set up, each recorders configuration can be password protected with a full multi level password protection system. All configuration changes within the recorder are also recorded under a full audit trail monitoring system.

3.0 Protocol Execution

3.1 Validation Methodology

This system Installation Qualification establishes which components of Honeywell MiniTrend V5 Recorder System hardware and software need to be documented, what the documents should contain, how critical information should be verified, who is responsible for generating the documentation, and the approvals required for each document.

The system Operational Qualification establishes functionality of the recorder system hardware and software and identifies which functions require testing, what documents should contain, how critical information should be verified and who is responsible for generating the documentation.

3.2 Protocol Documentation

The execution of this protocol will include the verification of Honeywell MiniTrend V5 Recorder hardware and software as they are installed for _____ within _____.
DEPARTMENT (S) AND LOCATION (S) COMPANY NAME

The protocol will detail various tests, which will require data collection and test summarization to be documented on the appropriate data sheets that are part of this protocol.

- All entries must be recorded legibly in permanent ink.
- All data sheets must be signed and dated by the person recording the data.
- All attachments will be inserted into protocol directly behind corresponding data sheet.
- Any findings and comments will be summarized in the appropriate comments section of each data sheet.
- Corrections to entries may be crossed off with a single line, signed and dated by the person performing the correction.

3.3 Protocol Amendment and Deviation

Any discrepancies found during validation testing will be fully described on the Protocol Amendment and Deviation Form. Each deviation and/or amendment will be assigned a consecutive number within the documentation of this protocol. Documentation of a deviation or amendment will include a description of the occurrence and an action/resolution summary. The decision to re-qualify, take corrective action, or justify

the deviation will be made by appropriate personnel including but not limited to: Validation Manager, Operations, Engineering, and QA/QC departments.

Amendments will have pre-approved acceptance criteria, and all supporting documentation will be included with this test document.

Pass or fail determinations will be based on the matching of "Actual Results" with "Expected Results". All observations must be clearly detailed within the "Actual Result" field. "Pass" or "Fail" shall be indicated in the Pass/Fail column.

- All steps that are marked "Fail" ("Actual" that does not match "Expected") shall be recorded in the Protocol Amendment and Deviation form. Failures/Errors are defined as a function inherent to the system that is not operating, functioning, or capable of performing as indicated in the "Expected Results".
- Errors encountered that are not associated with functional deviations and do not affect test integrity (i.e. Typographical) may be corrected on the hard copy of the script. All corrections must be initialed and dated.

3.4 Acceptance Criteria

- All required Installation/Operational Qualification test scripts have been performed and all corresponding attachments are completed.
- All amendments and deviations have been adequately resolved and approved.
- The applicable system components (i.e., hardware and software) are identified and installed in accordance with manufacturers and user design specifications.
- All applicable documents, specifications, and diagrams are included and accurately represent as-built conditions.
- All standard operating procedures are identified and exist minimally in Draft format.
- All electrical and environmental requirements meet the manufacturer's requirements.

4.0 Test Procedure Overview

4.1 Installation Qualification

4.1.1 Drawing and Diagrams

The objective of this verification is to record the documentation, such as drawings and system diagrams.

4.1.2 Standard Operating Procedures

The objective of this verification is to record the Standard Operating Procedures.

4.1.3 Manuals and Miscellaneous Documentation

The objective of this verification is to record the documentation, such as manuals and all other applicable documentation such as: vendor audits, purchase order requisition, etc. for the Honeywell MiniTrend V5 Recorder hardware and software components.

4.1.4 Inventory of Components

The objective of this verification is to identify the hardware and software components associated with Honeywell MiniTrend V5 Recorder.

4.1.5 Configuration Verification

The objective of this verification is to confirm that the procedures for configuring exist and that the current configuration including but not limited to Pen, Analog Inputs, Custom Screen and Events are as documented in data sheet or design specification.

4.1.6 Operating Environment

This section will verify the adequacy of the installation environment. The hardware components will be verified to be properly set with the required power, ambient temperature, and relative humidity.

4.1.7 Training and Documentation

The objective is to verify that all required training for the Honeywell Trendview V5 Recorder System has been identified and training material is accessible.

4.1.8 Service Contract/Support Agreement

The objective of this verification is to review the existence of service and support contract. Specific vendor need not be identified.

4.1.9 Contingency and Disaster Plans

The objective of this verification is to ensure that contingency and disaster plans exist and describe measures to be taken in the event of a disaster. Plans will be inspected and reviewed to ensure that they are current, complete, and accessible to authorized personnel.

4.1.10 Backup and Storage Procedures

The objective of this verification is to ensure that backup and storage procedures exist and are available to responsible personnel. This verification will also ensure that backup and storage records are properly identified, current, and complete.

4.1.11 Uninterruptible Power Source (UPS) Verification

The objective of this verification is to document the uninterrupted power source, which is provided to the Trendview system providing a trustworthy and reliable data collection system.

4.1.12 Physical Security

This section will verify that unauthorized users will not be able to gain access to the system.

4.1.13 Data File Archiving, Storage, and Retrieval Verification

The objective of this procedure is to document that data can be stored to the archive and retrieved from the archive.

4.1.14 Spare Parts Verification

Identify all spare parts with minimum quantity and location.

4.2 Operational Qualification

4.2.1 System Devices Verification

The objective of this verification is to confirm that the system hardware components operate properly by verifying that the system starts up without errors.

4.2.2 System Security Verification

This section will challenge the documented security functionality of system and verify that unauthorized users will not be able to gain access to the system.

4.2.3 System Calibration

This test will verify that all critical components of the system, which can be calibrated, have documented evidence of current certification.

4.2.4 Power Failure and Emergency Cut-off Verification

This test will verify that the system is capable of retaining system-operating parameters following a simulated power failure.

4.2.5 Input / Output Verification

This section will challenge the input / output configuration of the Honeywell MiniTrend V5 Recorder.

4.2.6 Custom Verification

This section will challenge any customization of the Honeywell MiniTrend V5 Recorder. Included in this test where applicable will be Custom Screens.

4.2.7 21 CFR § 11 Compliance

Verify that the Honeywell MiniTrend V5 Paperless Recorder system meets requirements in regards to electronic record.

4.2.8 Support Software - TrendViewer, TrendManager Pro and Screen Designer

Test forms will only be included with the purchase of these options. This test will verify the functionality of TrendManager Pro and Screen Designer Software.

4.2.9 Validation Test Equipment and Calibration

Validation test equipment required to conduct validation testing will be properly documented along with the appropriate calibration information.

5.0 Ongoing Evaluation

Any modifications to Honeywell MiniTrend V5 recorder hardware and software components must be documented and approved in accordance with change control procedures (_____]).
Document Number

This change control procedure is designed to ensure that any changes to the system are documented, evaluated, and approved by the same departments that approved the plan and this qualification protocol.

Protocol End

Protocol Amendment and Deviation Summary

Page ____ of ____

1. Number deviations or amendments consecutively, as applicable to this protocol.
2. Document deviations thoroughly, including corrective actions. If re-tests were performed, include all original test records with the validation package.
3. Document amendments, and attach the acceptance criteria approved prior to execution of the amendment.

Status Log

Deviation Number	Description	Verified by (Init. /date)

Protocol Amendment and Deviation Record

Page ____ of ____

Number assigned to this deviation or amendment: _____

Date: _____ Reported by: _____

Date/Time/Location that Deviation was observed: _____

Affected protocol section: _____

Describe nature of deviation or Amendment (Be Specific):

Immediate Action Taken:

Long Term (Remedial) Action Directed by: _____

Describe Actions or Resolution and Justification:

Was a re-test necessary due to the deviation or amendment? (Y/N) _____
Validation Manager: (Init/date): _____

Installation Verification

Attach. #	Protocol Section	Task	Acceptance Criteria	Responsible	Date Completed
6.1.1	4.1.1	Drawing and Diagrams	All drawings and diagrams have been reviewed and match the actual system.		
6.1.2	4.1.2	Standard Operating Procedures	All identified procedures stated in purpose exist in minimum draft form.		
6.1.3	4.1.3	Manuals and Miscellaneous Documents	All documentation has been identified and is stored in a central location.		
6.1.4	4.1.4	Inventory of Components	All installed hardware components reflect expected hardware components based on model number. Computer (If Applicable) Computer hardware satisfies manufacturer requirements.		
6.1.5	4.1.5	Configuration Verification	Approved configuration specification matches installed recorder.		
6.1.6	4.1.6	Operating Environment	The operating environment requirements have been met.		
6.1.7	4.1.7	Training and Documentation	All personnel responsible for operation of system have documented evidence of required skills and training		
6.1.8	4.1.8	Service Contract / Support Agreement	A Service Contract / Support agreement is in place for the recorder		
6.1.9	4.1.9	Contingency and Disaster Plans	A contingency and disaster recovery plan exists that describes measures to be taken in the event of a disaster		
6.1.10	4.1.10	Backup and Storage Procedure	A backup and storage procedure exists and is available to authorized personnel and to that a backup and storage records are properly identified and complete.		

Installation Verification

Attach. #	Protocol Section	Task	Acceptance Criteria	Responsible	Date Completed
6.1.11	4.1.11	Uninterruptible Power Source Verification	An Uninterruptible Power Source (or equivalent) is installed.		
6.1.12	4.1.12	Physical Security	Adequate security is in place.		
6.1.13	4.1.13	Data File Archiving, Storage and Retrieval Verification	Archive data is successfully stored on media and retrieved in external software program		
6.1.14	4.1.14	Spare Parts Verification	All spare parts are identified with minimum quantity and location.		

Operational Verification

Attach. #	Protocol Section	Task	Acceptance Criteria	Responsible Party	Date Completed
6.2.1	4.2.1	System Devices Verification	System restarts according to the manufacturer's specifications		
6.2.2	4.2.2	System Security Verification	System security performance is in accordance with manufacturers specifications		
6.2.3	4.2.3	System Calibration	All instrument requiring calibration have been placed into a calibration program and there is a current certification in effect		
6.2.4	4.2.4	Power Failure and Emergency Cut Off Verification	The recorder remains operational with a power failure and that power may be disconnected by means of emergency disconnect switch.		
6.2.5	4.2.5	Input / Output Verification	All installed I/O performs in accordance to user configuration.		
6.2.6	4.2.6	Custom Verification	All alarms, custom screens, graphs, events and custom Excel graphs/reports have been identified and verified to work in accordance to user specifications.		
6.2.7	4.2.7	21 CFR § 11 Compliance	System complies with regulatory requirement in regards to electronic records.		
6.2.8	4.2.8	Support Software TrendViewer, TrendManager Pro, Screen Designer	Support software performs in accordance to manufacturers specifications		
6.2.9	4.2.9	Validation Test Equipment and Calibration	All test equipment used during validation has current NIST certification.		

6.1.1 Drawings and Diagrams

Purpose	Review and record all drawings and/or diagrams associated with Honeywell MiniTrend V5 Recorder.		
Acceptance Criteria	All drawings and diagrams have been reviewed and match the actual system.		
Procedure	Complete table below in its entirety. Mark all empty blocks with N/A.		
Description	**Date/ Revision**	**Location**	**Test Result Pass/Fail Initial Date**

Comments:

Performed By: _____ Date: _____

Verified By: _____ Date: _____

6.1.2 Standard Operating Procedures

Use copy of this page if additional spaces are required.

Purpose	To record all SOPs (i.e., system-specific user and administrative operations procedures, access control and security, system startup/shutdown, training, backup/restore and archiving, performance monitoring, incident reporting and analysis, hardware maintenance, disaster recovery, and change control) associated with the hardware and network components of Honeywell MiniTrend V5 Recorder.		
Acceptance Criteria	All identified procedures stated in purpose exist in minimum draft form.		
Procedure	1. Complete table below in its entirety. 2. Mark all empty blocks with N/A.		
Title/ ID Number	**Approval Date/ Revision**	**Location**	**Test Result Pass/Fail Initial Date**
Comments:			

Performed By: _____ Date: _____

Verified By: _____ Date: _____

6.1.3 Manuals and Miscellaneous Documents

Purpose	To record the documentation, such as manuals and all other applicable documentation such as: vendor audits, purchase order requisition, etc. for the Honeywell MiniTrend V5 Recorder hardware and software components.	
Acceptance Criteria	All documentation has been identified and is stored in a central location.	
Procedure	1. Complete table below in its entirety. 2. Mark all empty blocks with N/A.	
Manual Title/Number	**Location**	**Test Result Pass/Fail Initial Date**
Comments:		

Performed By: _____ Date: _____

Verified By: _____ Date: _____

6.1.4 Inventory of Hardware Components

Purpose	Recorder To ensure that installed recorder hardware components reflect model number specification. Computer To identify installed computer components and verify manufacturer specifications are met.
Acceptance Criteria	Recorder To identify installed computer components and verify manufacturer specifications are met. Installed recorder hardware components reflect expected hardware components based on model number. Computer Computer hardware satisfies manufacturer requirements.
Procedure	1. Document Hardware components of Honeywell MiniTrend V5 Recorder in the Honeywell MiniTrend V5 Actual Hardware Configuration Table. 2. Compare hardware components recorded to Expected Results Table corresponding to the Model Number recorded in Step 1. 3. Model Number may contain numeric values different than documented model number due to non-hardware options. These numbers are identified by an underline in the documented model number. 4. Reference MiniTrend V5 DC rear panel Figure 3.2 and 3.2a for card/slot reference. Slot Configuration identified on Expected Results Table reflect factory default configuration. Identify any deviations and refer to manufacturers manual for accepted alternate slot. 5. Complete Computer Component Table in its entirety. Applicable only if support software installed, i.e. TrendViewer, TrendManager Pro and Screen Designer. Use copy of form for each installed workstation with access to any of the above listed software.

Performed By: _____ Date: _____

Verified By: _____ Date: _____

6.14. Figures 3.2 and 3.2a

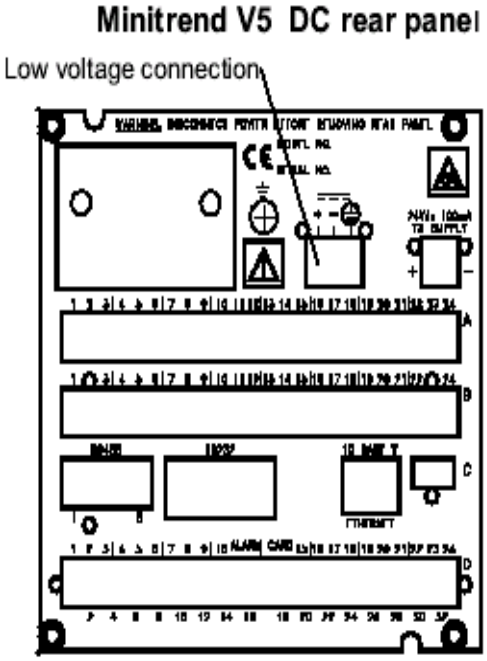


FIGURE 3.2
Low voltage 12 V, 24 V and 48 Vdc

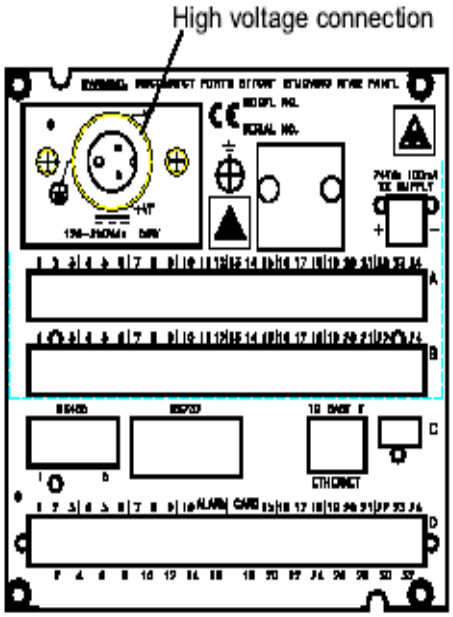


FIGURE 3.2a
High voltage 120-250 Vdc

Performed By: _____ Date: _____

Verified By: _____ Date: _____

6.1.4 Expected Results Table

Underlined positions in model number may differ than actual model number but do not affect physical hardware component expectation.

Model Numbe	TVMI-ML-40-*000*-0*00*-010-….	TVMI- ML-40-*000*-T*00*-010-…. TVMI- ML-40-*000*-E*00*-010-…. TVMI- ML-40-*000*-A*00*-010-…. TVMI- ML-40-*000*-M*00*-010-…	TVMI- BF-40-*000*-0*00*-010-….	TVMI- BF-40-*000*-0*00*-F10-….	TVMI-BF-40-*000*-T*00*-F10-…. TVMI-BF-40-*000*-E*00*-F10-…. TVMI-BF-40-*000*-A*00*-F10-…. TVMI-BF-40-*000*-M*00*-F10-…	TVMI-BF-40-*000*-T*00*-010-…. TVMI-BF-40-*000*-E*00*-010-…. TVMI-BF-40-*000*-A*00*-010-…. TVMI-BF-40-*000*-M*00*-010-…
Slot A	Linear Input Card w/ 8 Channels	Linear Input Card w/ 8 Channels	Standard Input Card w/ 8 Channels	Standard Input Card w/ 8 Channels	Standard Input Card w/ 8 Channels	Standard Input Card w/ 8 Channels
Slot B:	Linear Input Card w/ 8 Channels	Linear Input Card w/ 8 Channels	Standard Input Card w/ 8 Channels	Standard Input Card w/ 8 Channels	Standard Input Card w/ 8 Channels	Standard Input Card w/ 8 Channels
Slot C:	None	Communication Card	None	None	Communication Card	Communication Card
Slot D:	Alarm Card with 4 relay outputs	Alarm Card with 4 relay outputs	Alarm Card with 4 relay outputs	Alarm Card with 4 relay outputs	Alarm Card with 4 relay outputs	Alarm Card with 4 relay outputs
PCMCI Disk	PCMCIA	PCMCIA	PCMCIA	PCMCIA Disk	PCMCIA Disk	PCMCIA

Performed By: _____ Date: _____

Verified By: _____ Date: _____

6.1.4 System Identification	
	Actual
System	
Identification Number	
Location/Room	
Manufacturer	
Model Number	

6.1.4 Honeywell MiniTrend V5 Actual Hardware Configuration Table			
	Actual	**Performed by:**	**Pass / Fail**
Slot A			
Slot B			
Slot C			
Slot D			
PCMCIA Disk			

Performed By: _____ Date: _____

Verified By: _____ Date: _____

6.1.4 Computer Component Table Page _____ of _____		
Item	**Specification**	**As Installed**
Asset Tag Number		
Location		
Intended Use		
Manufacturer Requirement	**Installed Components**	**Meets Requirements (Circle One)**
200 MHz Pentium	Processor Speed:	YES NO
32MB or more RAM (64 MB recommended)	MB RAM:	YES NO
Microsoft® Windows 95,98, 2000 or Windows NT ver. 4.0 or Service pack 3 (onwards)	Windows:	YES NO
TrendViewer TrendManager Pro Screen Designer	_____ _____ _____	N/A
MS-Windows compatible pointing device	Manufacturer: Serial Number:	YES NO
Disk *Type: 3.5", Zip, other*	Manufacturer: Type:	YES NO
PCMCIA Drive *(If Applicable)*	Manufacturer: Serial Number:	YES NO
CD-ROM drive	Manufacturer: Serial Number:	YES NO
Video Monitor capable of 1024x768 resolution	Manufacturer: Serial Number:	YES NO

Performed By: _____ Date: _____

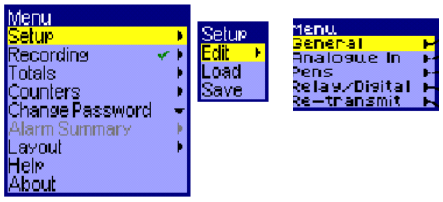
Verified By: _____ Date: _____

6.1.5 Configuration Verification

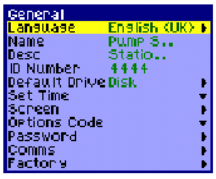
Purpose	To ensure the approved configuration specification reflects as installed configuration on MiniTrend recorder.
Acceptance Criteria	Identify Approved Configuration Specification: _____. Actual recorder configuration is as specified on Customer specific Configuration Specification.
Procedure	1. Complete MiniTrend Configuration Table in its entirety 2. Attach copies of TrendManager Pro Configuration report behind each applicable table. i.e. Pen Configuration Report behind Pen Tables. Complete Configuration Table by referencing actual recorder settings. Expected Reports include: TrendView Recorder Setup: Pens, General, Analogs and Events. 3. Compare documented configuration with Approved Configuration Specification.

MiniTrend Configuration Table

Main Menu Setup



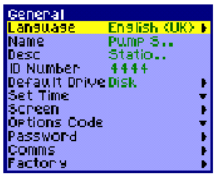
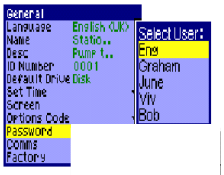
Sub Menu General



Category	As Configured	Performed By
Language		
Recorder Name		
Recorder Description		
Recorder ID Number		
Default Drive		
Set Time		
Options Code		

Performed By: _____ Date: _____

Verified By: _____ Date: _____

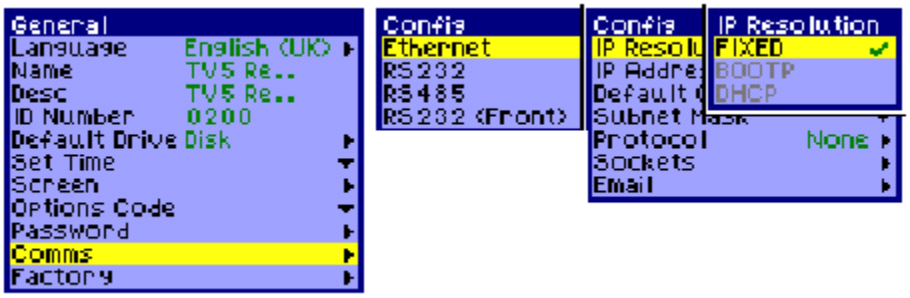
6.1.5 MiniTrend Configuration Table (Continued)		
General Sub Menu Screen 		
Category	**As Configured**	**Performed By**
Screen Brightness		
Screen Saver		
Screen Timeout		
Screen Chart Paper		
General Sub Menu Password 		
Category	**As Configured**	**Performed By**
Password Enabled / Disabled		
Users *Place N/A if user not configured. Indicate user name and access.*	User1:	
	User2:	
	User3:	
	User4:	
	User5:	
	User6:	
	User7:	
	User8:	
	User9:	
	User10:	
	User11:	
	User12:	
	User13:	
	User14:	
	User15:	
	User16:	
	User17:	
	User18:	
	User19:	
	User20:	

Performed By: _____ Date: _____

Verified By: _____ Date: _____

6.1.5 MiniTrend Configuration Table (Continued)

General Sub Menu Comms *(Comms or Modbus/Profibus Comms menu will appear)*



Category	As Configured	Performed By
Ethernet *Applicable with Ethernet selection only. Enter N/A if Ethernet option not purchased.*	IP Resolution	
	IP Address	
	Default Gateway	
	Subnet Mask	
	Protocols	
	Sockets	
	Email	
RS232 *Applicable with RS232 selection only. Enter N/A if RS232 option not purchased.*	Data Rate	
	Date Bits	
	Parity	
	Stop Bits	
	Protocol	
RS485 *Applicable with RS485 selection only. Enter N/A if RS485 option not purchased.*	Data Rate	
	Data Bits	
	Parity	
	Stop Bits	
	Line Type	
	Protocol	
RS232 (Front) *Applicable with RS232 (Front) selection only. Enter N/A if RS232 (Front) option not purchased.*	Data Rate	
	Data Bits	
	Parity	
	Stop Bits	
	Protocol	

Performed By: _____ Date: _____

Verified By: _____ Date: _____

6.1.5 MiniTrend Configuration Table (Continued)

General Sub Menu Modbus/Profibus Card Comms Card 2 *(Comms or Modbus/Profibus Comms menu will appear)*

Category	As Configured	Performed By
Modbus *Applicable with Modbus selection only. Enter N/A if Modbus option not purchased.*	Enable	
	Address	
	Baud Rate	
	Byte Format Option	
	Line Turn-Around	
	Tx Invalid Time	
DeviceNet		
Profibus *Applicable with Profibus selection only. Enter N/A if Profibus option not purchased*	Enable	
	Address	
	Acyclic buffer	
	Cyclic Input Buffer	
	Cyclic Output Buffer	

Factory

Category	As Configured	Performed By
Calibrate Input	Slot A	
	Slot B	
	Slot A1	
	Slot B1	
Drives	Floppy	
	PC Card	
Comms Ports	Ethernet	
	RS485	
	RS232	

Performed By: _____ Date: _____

Verified By: _____ Date: _____

Sub Menu Analog In																
Category /Name Enter Input Name	Name	Enabled	Units	Type	Range	Inp 0	Inp Span	Cond	Sqrt Extr	Eng Zero	Eng Span	T/ C	RT	Temp Cal	Tie To	Sampling
A1																
A2																
A3																
A4																
A5																
A6																
A7																
A8																
A9																
A10																
A11																
A12																

Performed By: _____ Date: _____

Verified By: _____ Date: _____

Sub Menu Analog In (Continued)																
Category /Name Enter Input Name	Name	Enabled	Units	Type	Range	Inp 0	Inp Span	Cond	Sqrt Extr	Eng Zero	Eng Span	T/ C	RT	Temp Cal	Tie To	Sampling
A13																
A14																
A15																
A16																

Performed By: _____ Date: _____

Verified By: _____ Date: _____

Sub Menu Pens	
Pen 1	
ENABLED	
TAG	
DESCRIPTION	

Maths	Scale	Alarms	Totalizer	Logging
Expression:	Units:	Alarm #:	Enabled:	Normal Enabled:
Pen:	Top:	Enabled:	Ignore Back Flow:	Normal Type:
Analog In:	Bottom:	Tag:	Standard Form:	Normal Method:
Digital In :	Scale Fact:	Type:	Units:	Normal Rate:
Relay:	Format:	Level:	Factor:	Device:
Total:	Divs:	Log Alarm:	Format:	
Counter:		Relay Enable:	Limit Range:	
Content:		Relays:	Min:	
Complex Variable:		Hysteresis:	Max:	
		Damping:	Carry On Rollover:	

Performed By: _____ Date: _____

Verified By: _____ Date: _____

Sub Menu Pens	
Pen 2	
ENABLED	
TAG	
DESCRIPTION	

MATHS	**SCALE**	**ALARMS**	**TOTALIZER**	**LOGGING**
Expression:	Units:	Alarm #:	Enabled:	Normal Enabled:
Pen:	Top:	Enabled:	Ignore Back Flow:	Normal Type:
Analog In:	Bottom:	Tag:	Standard Form:	Normal Method:
Digital In :	Scale Fact:	Type:	Units:	Normal Rate:
Relay:	Format:	Level:	Factor:	Device:
Total:	Divs:	Log Alarm:	Format:	
Counter:		Relay Enable:	Limit Range:	
Content:		Relays:	Min:	
Complex Variable:		Hysteresis:	Max:	
		Damping:	Carry On Rollover:	

Performed By: _____ Date: _____

Verified By: _____ Date: _____

Sub Menu Pens	
Pen 3	
ENABLED	
TAG	
DESCRIPTION	

MATHS	**SCALE**	**ALARMS**	**TOTALIZER**	**LOGGING**
Expression:	Units:	Alarm #:	Enabled:	Normal Enabled:
Pen:	Top:	Enabled:	Ignore Back Flow:	Normal Type:
Analog In:	Bottom:	Tag:	Standard Form:	Normal Method:
Digital In :	Scale Fact:	Type:	Units:	Normal Rate:
Relay:	Format:	Level:	Factor:	Device:
Total:	Divs:	Log Alarm:	Format:	
Counter:		Relay Enable:	Limit Range:	
Content:		Relays:	Min:	
Complex Variable:		Hysteresis:	Max:	
		Damping:	Carry On Rollover:	

Performed By: _____ Date: _____

Verified By: _____ Date: _____

Sub Menu Pens	
Pen 4	
ENABLED	
TAG	
DESCRIPTION	

MATHS	**SCALE**	**ALARMS**	**TOTALIZER**	**LOGGING**
Expression:	Units:	Alarm #:	Enabled:	Normal Enabled:
Pen:	Top:	Enabled:	Ignore Back Flow:	Normal Type:
Analog In:	Bottom:	Tag:	Standard Form:	Normal Method:
Digital In :	Scale Fact:	Type:	Units:	Normal Rate:
Relay:	Format:	Level:	Factor:	Device:
Total:	Divs:	Log Alarm:	Format:	
Counter:		Relay Enable:	Limit Range:	
Content:		Relays:	Min:	
Complex Variable:		Hysteresis:	Max:	
		Damping:	Carry On Rollover:	

Performed By: _____ Date: _____

Verified By: _____ Date: _____

Sub Menu Pens	
Pen 5	
ENABLED	
TAG	
DESCRIPTION	

MATHS	**SCALE**	**ALARMS**	**TOTALIZER**	**LOGGING**
Expression:	Units:	Alarm #:	Enabled:	Normal Enabled:
Pen:	Top:	Enabled:	Ignore Back Flow:	Normal Type:
Analog In:	Bottom:	Tag:	Standard Form:	Normal Method:
Digital In :	Scale Fact:	Type:	Units:	Normal Rate:
Relay:	Format:	Level:	Factor:	Device:
Total:	Divs:	Log Alarm:	Format:	
Counter:		Relay Enable:	Limit Range:	
Content:		Relays:	Min:	
Complex Variable:		Hysteresis:	Max:	
		Damping:	Carry On Rollover:	

Performed By: _____ Date: _____

Verified By: _____ Date: _____

Sub Menu Pens	
Pen 6	
ENABLED	
TAG	
DESCRIPTION	

MATHS	**SCALE**	**ALARMS**	**TOTALIZER**	**LOGGING**
Expression:	Units:	Alarm #:	Enabled:	Normal Enabled:
Pen:	Top:	Enabled:	Ignore Back Flow:	Normal Type:
Analog In:	Bottom:	Tag:	Standard Form:	Normal Method:
Digital In :	Scale Fact:	Type:	Units:	Normal Rate:
Relay:	Format:	Level:	Factor:	Device:
Total:	Divs:	Log Alarm:	Format:	
Counter:		Relay Enable:	Limit Range:	
Content:		Relays:	Min:	
Complex Variable:		Hysteresis:	Max:	
		Damping:	Carry On Rollover:	

Performed By: _____ Date: _____

Verified By: _____ Date: _____

Sub Menu Pens	
Pen 7	
ENABLED	
TAG	
DESCRIPTION	

MATHS	**SCALE**	**ALARMS**	**TOTALIZER**	**LOGGING**
Expression:	Units:	Alarm #:	Enabled:	Normal Enabled:
Pen:	Top:	Enabled:	Ignore Back Flow:	Normal Type:
Analog In:	Bottom:	Tag:	Standard Form:	Normal Method:
Digital In :	Scale Fact:	Type:	Units:	Normal Rate:
Relay:	Format:	Level:	Factor:	Device:
Total:	Divs:	Log Alarm:	Format:	
Counter:		Relay Enable:	Limit Range:	
Content:		Relays:	Min:	
Complex Variable:		Hysteresis:	Max:	
		Damping:	Carry On Rollover:	

Performed By: _____ Date: _____

Verified By: _____ Date: _____

Sub Menu Pens	
Pen 8	
ENABLED	
TAG	
DESCRIPTION	

MATHS	**SCALE**	**ALARMS**	**TOTALIZER**	**LOGGING**
Expression:	Units:	Alarm #:	Enabled:	Normal Enabled:
Pen:	Top:	Enabled:	Ignore Back Flow:	Normal Type:
Analog In:	Bottom:	Tag:	Standard Form:	Normal Method:
Digital In :	Scale Fact:	Type:	Units:	Normal Rate:
Relay:	Format:	Level:	Factor:	Device:
Total:	Divs:	Log Alarm:	Format:	
Counter:		Relay Enable:	Limit Range:	
Content:		Relays:	Min:	
Complex Variable:		Hysteresis:	Max:	
		Damping:	Carry On Rollover:	

Performed By: _____ Date: _____

Verified By: _____ Date: _____

Sub Menu Pens	
Pen 9	
ENABLED	
TAG	
DESCRIPTION	

MATHS	**SCALE**	**ALARMS**	**TOTALIZER**	**LOGGING**
Expression:	Units:	Alarm #:	Enabled:	Normal Enabled:
Pen:	Top:	Enabled:	Ignore Back Flow:	Normal Type:
Analog In:	Bottom:	Tag:	Standard Form:	Normal Method:
Digital In :	Scale Fact:	Type:	Units:	Normal Rate:
Relay:	Format:	Level:	Factor:	Device:
Total:	Divs:	Log Alarm:	Format:	
Counter:		Relay Enable:	Limit Range:	
Content:		Relays:	Min:	
Complex Variable:		Hysteresis:	Max:	
		Damping:	Carry On Rollover:	

Performed By: _____ Date: _____

Verified By: _____ Date: _____

Sub Menu Pens	
Pen 10	
ENABLED	
TAG	
DESCRIPTION	

MATHS	**SCALE**	**ALARMS**	**TOTALIZER**	**LOGGING**
Expression:	Units:	Alarm #:	Enabled:	Normal Enabled:
Pen:	Top:	Enabled:	Ignore Back Flow:	Normal Type:
Analog In:	Bottom:	Tag:	Standard Form:	Normal Method:
Digital In :	Scale Fact:	Type:	Units:	Normal Rate:
Relay:	Format:	Level:	Factor:	Device:
Total:	Divs:	Log Alarm:	Format:	
Counter:		Relay Enable:	Limit Range:	
Content:		Relays:	Min:	
Complex Variable:		Hysteresis:	Max:	
		Damping:	Carry On Rollover:	

Performed By: _____ Date: _____

Verified By: _____ Date: _____

Sub Menu Pens	
Pen 11	
ENABLED	
TAG	
DESCRIPTION	

MATHS	**SCALE**	**ALARMS**	**TOTALIZER**	**LOGGING**
Expression:	Units:	Alarm #:	Enabled:	Normal Enabled:
Pen:	Top:	Enabled:	Ignore Back Flow:	Normal Type:
Analog In:	Bottom:	Tag:	Standard Form:	Normal Method:
Digital In :	Scale Fact:	Type:	Units:	Normal Rate:
Relay:	Format:	Level:	Factor:	Device:
Total:	Divs:	Log Alarm:	Format:	
Counter:		Relay Enable:	Limit Range:	
Content:		Relays:	Min:	
Complex Variable:		Hysteresis:	Max:	
		Damping:	Carry On Rollover:	

Performed By: _____ Date: _____

Verified By: _____ Date: _____

Sub Menu Pens	
Pen 12	
ENABLED	
TAG	
DESCRIPTION	

MATHS	**SCALE**	**ALARMS**	**TOTALIZER**	**LOGGING**
Expression:	Units:	Alarm #:	Enabled:	Normal Enabled:
Pen:	Top:	Enabled:	Ignore Back Flow:	Normal Type:
Analog In:	Bottom:	Tag:	Standard Form:	Normal Method:
Digital In :	Scale Fact:	Type:	Units:	Normal Rate:
Relay:	Format:	Level:	Factor:	Device:
Total:	Divs:	Log Alarm:	Format:	
Counter:		Relay Enable:	Limit Range:	
Content:		Relays:	Min:	
Complex Variable:		Hysteresis:	Max:	
		Damping:	Carry On Rollover:	

Performed By: _____ Date: _____

Verified By: _____ Date: _____

Sub Menu Pens	
Pen 13	
ENABLED	
TAG	
DESCRIPTION	

MATHS	**SCALE**	**ALARMS**	**TOTALIZER**	**LOGGING**
Expression:	Units:	Alarm #:	Enabled:	Normal Enabled:
Pen:	Top:	Enabled:	Ignore Back Flow:	Normal Type:
Analog In:	Bottom:	Tag:	Standard Form:	Normal Method:
Digital In :	Scale Fact:	Type:	Units:	Normal Rate:
Relay:	Format:	Level:	Factor:	Device:
Total:	Divs:	Log Alarm:	Format:	
Counter:		Relay Enable:	Limit Range:	
Content:		Relays:	Min:	
Complex Variable:		Hysteresis:	Max:	
		Damping:	Carry On Rollover:	

Performed By: _____ Date: _____

Verified By: _____ Date: _____

Sub Menu Pens	
Pen 14	
ENABLED	
TAG	
DESCRIPTION	

MATHS	**SCALE**	**ALARMS**	**TOTALIZER**	**LOGGING**
Expression:	Units:	Alarm #:	Enabled:	Normal Enabled:
Pen:	Top:	Enabled:	Ignore Back Flow:	Normal Type:
Analog In:	Bottom:	Tag:	Standard Form:	Normal Method:
Digital In :	Scale Fact:	Type:	Units:	Normal Rate:
Relay:	Format:	Level:	Factor:	Device:
Total:	Divs:	Log Alarm:	Format:	
Counter:		Relay Enable:	Limit Range:	
Content:		Relays:	Min:	
Complex Variable:		Hysteresis:	Max:	
		Damping:	Carry On Rollover:	

Performed By: _____ Date: _____

Verified By: _____ Date: _____

Sub Menu Pens	
Pen 15	
ENABLED	
TAG	
DESCRIPTION	

MATHS	**SCALE**	**ALARMS**	**TOTALIZER**	**LOGGING**
Expression:	Units:	Alarm #:	Enabled:	Normal Enabled:
Pen:	Top:	Enabled:	Ignore Back Flow:	Normal Type:
Analog In:	Bottom:	Tag:	Standard Form:	Normal Method:
Digital In :	Scale Fact:	Type:	Units:	Normal Rate:
Relay:	Format:	Level:	Factor:	Device:
Total:	Divs:	Log Alarm:	Format:	
Counter:		Relay Enable:	Limit Range:	
Content:		Relays:	Min:	
Complex Variable:		Hysteresis:	Max:	
		Damping:	Carry On Rollover:	

Performed By: _____ Date: _____

Verified By: _____ Date: _____

Sub Menu Pens	
Pen 16	
ENABLED	
TAG	
DESCRIPTION	

MATHS	**SCALE**	**ALARMS**	**TOTALIZER**	**LOGGING**
Expression:	Units:	Alarm #:	Enabled:	Normal Enabled:
Pen:	Top:	Enabled:	Ignore Back Flow:	Normal Type:
Analog In:	Bottom:	Tag:	Standard Form:	Normal Method:
Digital In :	Scale Fact:	Type:	Units:	Normal Rate:
Relay:	Format:	Level:	Factor:	Device:
Total:	Divs:	Log Alarm:	Format:	
Counter:		Relay Enable:	Limit Range:	
Content:		Relays:	Min:	
Complex Variable:		Hysteresis:	Max:	
		Damping:	Carry On Rollover:	

Performed By: _____ Date: _____

Verified By: _____ Date: _____

Sub Menu Relays/Digital

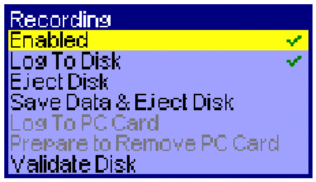
Channel	Label	On State	Off State	As Input	As Output	Fail Safe	Log Digital
Channel 1							
Channel 2							
Channel 3							
Channel 4							

Performed By: _____ Date: _____

Verified By: _____ Date: _____

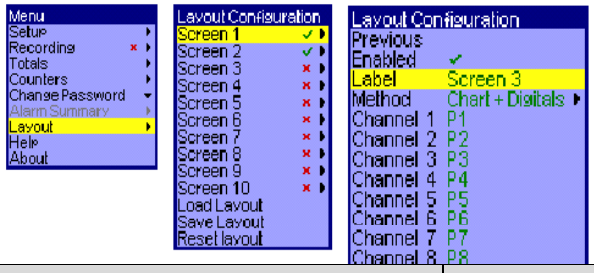
6.1.5 MiniTrend Configuration Table (Continued)

Main Menu Recording



Category	As Configured	Performed By
Enabled		
Log To Disk		

Main Menu Layout



Category	As Configured	Performed By
Screen 1	Enabled	
	Label	
	Method	
	Channel 1	
	Channel 2	
	Channel 3	
	Channel 4	
	Channel 5	
	Channel 6	
	Channel 7	
	Channel 8	

Performed By: _____ Date: _____

Verified By: _____ Date: _____

6.1.5 MiniTrend Configuration Table (Continued)		
Category	**As Configured**	**Performed By**
Screen 2	Enabled	
	Label	
	Method	
	Channel 1	
	Channel 2	
	Channel 3	
	Channel 4	
	Channel 5	
	Channel 6	
	Channel 7	
	Channel 8	

Performed By: _____ Date: _____

Verified By: _____ Date: _____

6.1.5 MiniTrend Configuration Table (Continued)		
Category	**As Configured**	**Performed By**
Screen 3	Enabled	
	Label	
	Method	
	Channel 1	
	Channel 2	
	Channel 3	
	Channel 4	
	Channel 5	
	Channel 6	
	Channel 7	
	Channel 8	
Screen 4	Enabled	
	Label	
	Method	
	Channel 1	
	Channel 2	
	Channel 3	
	Channel 4	
	Channel 5	
	Channel 6	
	Channel 7	
	Channel 8	

Performed By: _____ Date: _____

Verified By: _____ Date: _____

6.1.5 MiniTrend Configuration Table (Continued)		
Category	**As Configured**	**Performed By**
Screen 5	Enabled	
	Label	
	Method	
	Channel 1	
	Channel 2	
	Channel 3	
	Channel 4	
	Channel 5	
	Channel 6	
	Channel 7	
	Channel 8	
Screen 6	Enabled	
	Label	
	Method	
	Channel 1	
	Channel 2	
	Channel 3	
	Channel 4	
	Channel 5	
	Channel 6	
	Channel 7	
	Channel 8	

Performed By: _____ Date: _____

Verified By: _____ Date: _____

6.1.5 MiniTrend Configuration Table (Continued)		
Category	**As Configured**	**Performed By**
Screen 7	Enabled	
	Label	
	Method	
	Channel 1	
	Channel 2	
	Channel 3	
	Channel 4	
	Channel 5	
	Channel 6	
	Channel 7	
	Channel 8	
Screen 8	Enabled	
	Label	
	Method	
	Channel 1	
	Channel 2	
	Channel 3	
	Channel 4	
	Channel 5	
	Channel 6	
	Channel 7	
	Channel 8	

Performed By: _____ Date: _____

Verified By: _____ Date: _____

6.1.5 MiniTrend Configuration Table (Continued)		
Category	**As Configured**	**Performed By**
Screen 9	Enabled	
	Label	
	Method	
	Channel 1	
	Channel 2	
	Channel 3	
	Channel 4	
	Channel 5	
	Channel 6	
	Channel 7	
	Channel 8	
Screen 10	Enabled	
	Label	
	Method	
	Channel 1	
	Channel 2	
	Channel 3	
	Channel 4	
	Channel 5	
	Channel 6	
	Channel 7	
	Channel 8	

Performed By: _____ Date: _____

Verified By: _____ Date: _____

6.1.5 Main Menu About		
Category	**As Configured**	**Performed By**
Loader =		
Firmware =		
Serial Number		
Session		
Maths		
Totals		
Events		
ESS		
Custom Screens Attach a Screen Shot for each Custom Screen designed and annotate configuration. Label each Custom Screen Attachment 6.1.5-Custom Screen (1-XX) Sign and initial each screen		
Mimics Attach a Screen Shot for each Custom Screen designed and annotate configuration.		
WebServer		
E-Mail		
TrendBus		
ModBus		
Profibus		
# of Extra Pens		

Performed By: _____ Date: _____

Verified By: _____ Date: _____

6.1.5 Additional Configuration Table
Category
Graphs
If Applicable: Identify each graph created on TrendManager Pro.
Graph Name
Category
Excel Graphs/Worksheet Identified any saved Excel template.

Performed By: _____ Date: _____

Verified By: _____ Date: _____

6.1.5Additional Configuration Table			
Category			
Events			
1. Identify each configured event below or attach the TrendView recorder setup – Events report and label .6.1.5 Events. Label, initial and date each page. 2. Place single line through table, mark N/A initial and date if reports are attached.			
Events Name			
Event Name	Cause	Effect	Marker/Counter/Email

Actual Recorder configuration matches the customer specific Configuration Specification: Pass / Fail Initial / Date _____ _____

Performed By: _____ Date: _____

Verified By: _____ Date: _____

6.1.6 Operating Environment

Purpose	To ensure that the systems operating environment requirements have been met.			
Acceptance Criteria	The operating environment requirements have been met.			
Procedure	Complete below table in its entirety to verify that the manufacturers operating environment requirements have been met. (Temperature, Humidity, Power, etc.)			
Parameter	**Expected Results**	**Actual Results**	**Pass/ Fail**	**Initial / Date**
Case/Mounting	MN: TVMI-XX-XX-XXX-XXX-XXX-0XXXXX **Standard Panel Mounting** MN: TVMI-XX-XX-XXX-XXX-XXX-CXXXXX **Nema4/IP65 Cover** MN: TVMI-XX-XX-XXX-XXX-XXX-PXXXXX **Portable**			
Power Voltage	MN: TVMI-XX-XX-XXX-X**0**X-.. **90 - 264 VAC** MN: TVMI-XX-XX-XXX-X**2**X-.. **24 VAC**			
Ambient Temperature	**0°C to 50°C**			
Ambient Humidity	**10% to 90%** **(non-condensing)**			
Comments:				

Performed By: _____ Date: _____

Verified By: _____ Date: _____

6.1.7 Training and Documentation

Purpose	Verify that all training material for the Honeywell Trendview V5 Recorder is accessible, including but not limited to (Standard Operating Procedure, GMP Training, etc.).
Acceptance Criteria	Identified training material is available and current to installed system.
Procedure	1. Document title(s) of required training courses. 2. Complete Training Table in its entirety. 3. Place N/A, initial and date for any unused spaces.

Course Titles	**Training Material - Location - Revision**	**Pass/ Fail**	**Initial / Date**

Identify training courses required for each of the user levels or identify SOP which details this information: _____

ENG -	TECHNICIAN -
SUPERVISOR -	OPERATOR -

Comments:

Performed By: _____ Date: _____

Verified By: _____ Date: _____

6.1.8 Service Contract/Support Agreement

Purpose	Review the existence of a Service Contract / Support agreement.
Acceptance Criteria	A Service Contract / Support agreement is in place for the recorder.
Procedure	Complete Table in its entirety.

Agreement Number	**Pass/ Fail** **Initial / Date**
Comments:	

Performed By: _____ Date: _____

Verified By: _____ Date: _____

6.1.9 Contingency and Disaster Recovery Plans

Purpose	To ensure that a contingency and disaster recovery plan exists that describes measures to be taken in the event of a disaster.
Acceptance Criteria	A contingency and disaster recovery plan exists that describes measures to be taken in the event of a disaster.
Procedure	1. Verify that a contingency and disaster recovery plan exists that describes measures to be taken in the event of a disaster. 2. The plan is to be inspected and reviewed to ensure that they are complete, current, and accessible to responsible personnel.

Plan Document Number	**Approved (Yes or No)**	**Location**	**Pass/Fail Initial Date**
Comments:			

Performed By: _____ Date: _____

Verified By: _____ Date: _____

6.1.10 Backup and Storage Procedures

Purpose	To ensure that a backup and storage procedure exists and is available to authorized personnel and to ensure that a backup and storage records are properly identified, current and complete.
Acceptance Criteria	A backup and storage procedure exists and is available to authorized personnel and to that a backup and storage records are properly identified and complete.
Procedure	1. Verify that a backup and storage procedure exists and is available to authorized personnel. 2. Ensure that a current backup of recorder configuration has been performed and is accessible and properly identified.

Procedure Document Number	Approved (Yes or No)	Location	Pass/Fail Initial Date
Comments:			

MiniTrend Optional Software Packages		
Software Package	**Version/Release**	**Backup Location**
Trendviewer		
Trend Manager Pro		
Screen Designer		

Performed By: _____ Date: _____

Verified By: _____ Date: _____

6.1.11 Uninterruptible Power Source

*21CFR 11 requires **"**. (a) The regulations in this part set forth the criteria under which the agency considers **electronic** records, **electronic** signatures, and handwritten signatures executed to **electronic** records to be trustworthy, reliable, and generally equivalent to paper records and handwritten signatures executed on paper". To comply with statement power should be uninterrupted to provide a trustworthy, reliable system.*

Purpose	To document the uninterrupted power source which is provided to the Trendview system providing a trustworthy and reliable data collection system.	
Acceptance Criteria	An Uninterruptible Power Source (or equivalent) is installed and documented in table below.	
Procedure	1. Complete below table in its entirety. 2. Mark N/A for all non-applicable blocks.	
	Installed Specifications	**Performed By Initial/Date**
Identification Number		
Location/Room		
Manufacturer		
Model Number		
Maximum Voltage		
Maximum Amperage		
Cycles		
Disconnect Switch Location	In close proximity to the recorder, and within easy reach of the operator	
Disconnect Switch Marking	Must be clearly marked,	
Comments:		

Test Result Pass/Fail: _____ Initial/Date: _____

Performed By: _____ Date: _____

Verified By: _____ Date: _____

6.1.12 Physical Security

21CFR 11 requires "Closed system means an environment in which system access is controlled by persons who are responsible for the content of electronic records that are on the system." Draw a single line through all blank lines. Mark N/A, Initial and Date.

Purpose	To ensure that the environment in which system is installed controls access.
Acceptance Criteria	Adequate security is in place.
Procedure	List below physical security details including, security guards, locked doors, software security, locked cabinets and any other security features.
Security Features	
Comments:	
Test Results Pass/Fail: _____ Initial/Date: _____	

Performed By: _____ Date: _____

Verified By: _____ Date: _____

6.1.13 Data File Archiving, Storage, and Retrieval Verification

Purpose	Document that data can be stored to the archive and retrieved from the archive.
Acceptance Criteria	Archive data is successfully stored on media and retrieved in external software program.
Procedure	1. Obtain the appropriate blank data storage media(s) as applies to installed device model number. 2. Enable Recording of data. 3. Install blank media in drive. Activate logging to disk. 4. Record Start Time: _____ 5. Record End Time: _____ 6. Log data for minimum period of at least one minute more than collection time of least sampled input. 7. Select Validate Disk to initiate the disk and check for any corruption. 8. Select Save Data and Eject Disk. Remove disk and insert in drive in computer with TrendViewer software installed. 9. Click on the picture of the record in TrendViewer. 10. The default location to import data from is A:. If you want to change this, click on the change button and locate the data for the recorder using the browser. 11. Click yes and wait for the bar to reach the right hand side of the import box or click cancel if it is taking too long. Note any warning messages will appear in the scrolling message window. 12. Click ok when the setup has finished to return. 13. A graph of the data from recorder will automatically appear. 14. Verify that data was collected for the time period identified in Step 4 and 5and is available for viewing. 15. Use print function to print a graph of the data and label 6.1.13a.
Data is viewable in TrendViewer application and matches time period identified. Test Result Pass/Fail: _____	
Comments:	

Performed By: _____ Date: _____

Reviewed By: _____ Date: _____

6.1.13 Data File Archiving, Storage, and Retrieval Verification (Continued)

Procedure	16. Enable Recording of data. 17. Install blank PCMCIA card in card slot. 18. Activate logging to PCMCIA card 19. Record Start Time: _____ 20. Record End Time: _____ 21. Log data for minimum period of at least one minute more than collection time of least sampled input. 22. Select Validate Disk to initiate the disk and check for any corruption. 23. Select Prepare to remove PC card to force recorder to save data from buffer to PCMCIA card. 24. Remove card and insert in PCMCIA in computer with TrendViewer software installed. 25. Click on the picture of the record in TrendViewer. 26. The default location to import data from is A:. If you want to change this, click on the change button and locate the data for the recorder using the browser. 27. Click yes and wait for the bar to reach the right hand side of the import box or click cancel if it is taking too long. Note any warning messages will appear in the scrolling message window. Document messages if applicable. Restart from Step 22. 28. Click ok when the setup has finished to return. 29. A graph of the data from the recorder will automatically appear. 30. Verify that data was collected for time period identified in Step 19 and 20 and is available for viewing. 31. Use print function to print a graph of the data and label 6.1.13b.
Data is viewable in TrendViewer application and matches the time period identified. Test Result Pass/Fail: _____	
Comments:	

Performed By: _____ Date: _____

Reviewed By: _____ Date: _____

6.1.14 Recommended Spare Parts

Purpose	Identify spare parts and location.
Acceptance Criteria	All spare parts are identified with minimum quantity and location. I.E. Floppy, Cards, UPS, etc.
Procedure	1. Complete below table in its entirety. 2. Document required quantity and location for all spare parts including manufacturers recommended spare listed below. 3. Mark all blank spaces with N/A, Initial and Date.

Quantity	**Part Number/Description.**	**Storage Location**	**Test Result Pass/Fail Initial /Date**
	Display Backlight (Mfg recommends 1)		

Comments:

Performed By: _____ Date: _____

Reviewed By: _____ Date: _____

6.2.1 System Devices Verification

The first screen displayed is the 'power up screen' shown below. This only appears for a short time before changing to the last screen selected before the unit is switched off or, on first power up, it will show the bars screen with any available pens. To change screen layout press the ***Screen*** button and use the wheel on the right of the keypad to scroll up and down the selection menu. When the screen required is highlighted, press the thumbwheel to select.

NB. The flag displayed in the top right corner of the screen indicates the initial default language.

Power up screen

Purpose	To ensure that the system restarts according to the manufacturer's specifications.
Acceptance Criteria	System restarts according to the manufacturer's specifications.
Procedure	1. Document Screen Name which is displayed prior to powering off: 2. _____ 3. Power recorder off by disconnecting power 4. Power recorder on by reconnecting power. 5. Verify Power up Screen is displayed: 6. Verify screen entered in Step 1 is displayed.

Expected Results	**Actual Results**	**Pass/ Fail**	**Initial / Date**
1st screen displayed is Power up Screen			
Screen entered in Step 1 is returned as default			
Comments			

Performed By: _____ Date: _____

Verified By: _____ Date: _____

6.2.2 System Security Verification

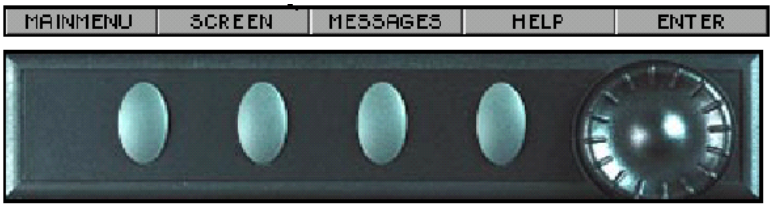
Purpose	Review all aspects of system security and verify system security performance is in accordance with manufacturers specifications.
Acceptance Criteria	System security performs in accordance with manufacturers specifications.
Procedure	Complete the below steps in their entirety.

Recorder security is performed with the assignment of passwords and user levels.
The four User levels available are:

Engineer – Highest access to all levels, Supervisor, Technician, and Operator
Supervisor – 2nd highest level including Technician and Operator access
Technician – 3rd level including Operator access
Operator – 4th and lowest level of access

There are five setup screens, which can be protected from users. Access to these screens can be assigned using the Protect and Protect From menus.

System allows up to 20 different users. Passwords can be duplicated. The Administrator cannot access the passwords for other users. If the user does forget the password the user must be deleted from the recorder and start again.



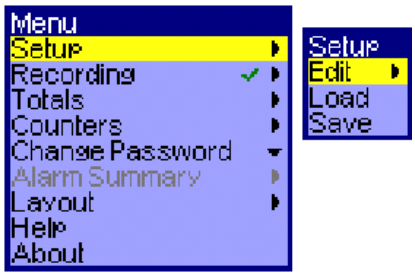
1. Select Main Menu from the On-Screen Selection bar displayed along the bottom of the screen by pressing the button immediately below.
2. Rotate the thumbwheel to highlight **Setup** then depress the thumbwheel to select.

Performed By: _____ Date: _____

Verified By: _____ Date: _____

6.2.2 System Security Verification (Continued)

3. Enter "Eng" as User Name by moving thumbwheel to desired letter and depressing thumbwheel.
4. Select **ACCEPT Button** (located on the on screen selection bar at the bottom of the screen).
5. Enter "PASS" as password.
6. Select **ACCEPT Button** (located on the on screen selection bar at the bottom of the screen).
7. Select **Setup.**
8. Select **Edit.**
9. Select **General.**
10. Select **Password**.
11. Select **Protect** Menu.
12. Select **Setup** then select **Technician.**
13. Select **Record** then select **Technician.**
14. Select **Layout** then select **Technician.**
15. Select **Screen** then select **Technician.**
16. Select **Totals** then select **Technician.**
17. Select **Counters** then select **Technician.**
18. Select **Context Menu** then select **Technician.**
19. Click **Back.**
20. Select **Options** from the Password Menu.
21. Select **No reuse for** and enter **4** times using the thumbwheel.
22. Select **ACCEPT** Button.
23. Select **Expires in** and enter **1** days using the thumbwheel.
24. Select **ACCEPT** Button.
25. Select **Timeout in** and enter **10** minutes using the thumbwheel.
26. Select **ACCEPT** Button.
27. Select **Password** from Password Menu.
28. Document the number of users allowed _____. Expected value: 20
29. Test Results: Pass/Fail: _____

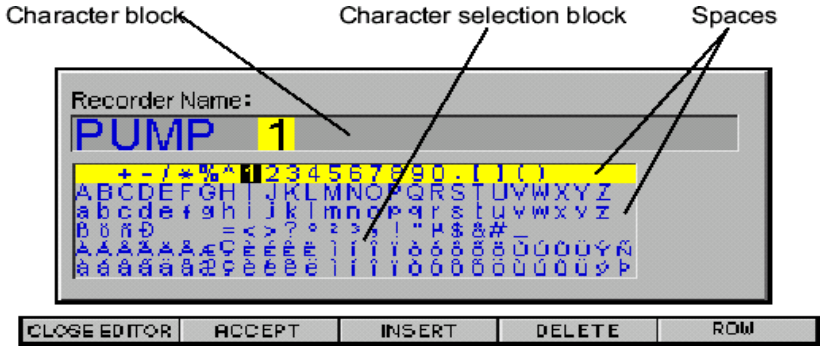


Performed By: _____ Date: _____

Verified By: _____ Date: _____

6.2.2 System Security Verification (Continued)

30. Scroll down to 1st No User.
31. Click **Enter**.
32. Scroll down to **Create User. Enter**



33. Using the Text Entry screen, enter the following information: User Name: Honey01, Level: Supervisor
34. Click **Accept**.
35. Enter time and date of User Name Honey01 creation: _____
36. Return to General Menu.
37. Select User Honey01
38. Expected Results: User will be asked to enter new password.
39. Enter TEMP01 for password. Reenter TEMP01 when asked to re-enter.
40. Reenter Password Menu as Eng. Enter Password "PASS"
41. Repeat Steps 30 - 34 entering information User Name: Honey02, Level: Technician, Password: TEMP01 for 2nd available user.
42. Verify that system does allow the use of TEMP01 for password. (Duplicate Passwords are permitted).
43. Test Results: Pass/Fail: _____
44. Enter TEMP02 as Password.
45. Return to Main Menu
46. Select Finish and Apply.
47. Select Setup
48. Select Honey02, enter password TEMP02.
49. Verify "Password entry error" displayed and no entry to Setup for user level technician was given.
50. Test Results: Pass/Fail: _____

Performed By: _____ Date: _____

Verified By: _____ Date: _____

6.2.2 System Security Verification (Continued)

51. Verify more than 1 day has passed since time documented in Step 35.
52. Enter system as Honey01.
53. Verify message appears: Password has expired. You must enter another
54. Test Results: Pass/Fail: _____
55. Verify user can change their passwords and cannot reuse a password for 4 times. Enter Menu Select Honey01. Select Change Password.
56. Enter current password (Temp01) then enter Temp01 as password. Follow on screen instructions and verify password by reentering Temp01.
57. Verify error message displayed.
58. Test Results (for password reuse 1): Pass/Fail: _____
59. Repeat steps 55 –57 three additional times.
60. Test Results (for password reuse 2): Pass/Fail: _____
61. Test Results (for password reuse 3): Pass/Fail: _____
62. Test Results (for password reuse 4): Pass/Fail: _____
63. Enter TEMP03 as Password.
64. Return to Main Menu
65. Log in as Honey01. Document time and date of login: _____
66. Wait 10 minutes from time documented in Step 65.
67. Attempt to enter the Menu. Verify no access is given and user is required to login.
68. Test Results: Pass/Fail: _____
69. Log in as user Honey01 with password TEMP03.
70. Verify access is granted.
71. Test Results: Pass/Fail: _____
72. Enter Setup Menu as Eng, Password PASS.
73. Return to Password Menu.
74. Select Reset Password.
75. Select Password and verify no users are defined other than default Eng.
76. Test Results: Pass/Fail: _____

Comments:

Performed By: _____ Date: _____

Verified By: _____ Date: _____

6.2.3 System Calibration

Purpose	To ensure that all instruments requiring calibrations have been placed into a calibration program.	
Acceptance Criteria	All instruments requiring calibration have been placed into a calibration program and there is a current certification in effect.	
Procedure	1. List the calibration information for the recorder. Any input channels calibrated individually (no 'F' indicated when thumbwheel is used to select Inputs, then Calibrate) must be listed separately. 2. Attach a copy of the calibration certificates in the support documentation.	
Instrument ID /Input Channel ID	**Certification Number and Expiration Date**	**Test Results Pass Fail/ Initial Date**
Comments:		

Performed By: _____ Date: _____

Verified By: _____ Date: _____

6.2.4 Power Failure and Emergency Cut Off Verification

Purpose	Document that the Uninterruptible Power Supply (UPS) back-up system provides continuous power to the Honeywell MiniTrend V5 recorder and that emergency disconnect switch is properly labeled.
Acceptance Criteria	The Honeywell MiniTrend V5 recorder remains operational with a power failure and that power may be disconnected by means of emergency disconnect switch.
Procedure	1. Remove the power cord connecting the UPS to the outlet to simulate power failure. 2. Suggested period of time is 5 minutes. Identify actual time period of power disconnect: Period of time: _____ 3. Document the time that power was disconnected. 4. Time of main power disconnect:_____ 5. Wait for time period identified in Step 2. 6. Reconnect main power to the recorder. 7. Time of main power reconnect: _____ 8. Verify that screen remains active for full time period identified in Step 2. 9. Verify disconnect switch is operational by activating disconnect switch. 10. Expect recorder to turn off. UPS should be connected so that is does not interfere with emergency disconnect.

Expected Results	**Actual Results**	**Test Results Pass Fail/ Initial Date**
Power is not interrupted when Power cord is removed.		
Power is interrupted when Emergency Disconnect switch is activated.		
Comments:		

Performed By: _____ Date: _____

Verified By: _____ Date: _____

6.2.5 Input/Output Verification

Purpose	To ensure that input and output configuration performs in accordance to user configuration and manufacturers specification.
Acceptance Criteria	All installed I/O performs in accordance to user configuration.
Procedure	1. Refer to 6.1.5 for pen specification. 2. Complete I/O Challenge Table in its entirety. 3. Place N/A, initial and date in table for all non-configured I/O. 4. Source refers to Analog Input Range and Measure refers to pen engineering range. 5. Perform a one-point challenge for all configured I/O and document results. Use the identified acceptable source and measure from 6.1.5 configuration.

Performed By: _____ Date: _____

Verified By: _____ Date: _____

6.25 I/O Challenge Table							
Category/Name ***Enter Input Name***	**Source**	**Measure**	**Pass /Fail Initial / Date**	**Type**	**Off State**	**On State**	**Pass /Fail Initial / Date**
A1				Channel 1			
A2				Channel 2			
A3				Channel 3			
A4				Channel 4			
A5				Channel 5			
A6				Channel 6			
A7				Channel 7			
A8				Channel 8			
A9				Channel 9			
A10				Channel 10			
A11				Channel 11			
A12				Channel 12			
A13				Channel 13			
A14				Channel 14			
A15				Channel 15			
A16				Channel 16			

Performed By: _____ Date: _____

Verified By: _____ Date: _____

6.2.6 Custom Verification

Purpose	To ensure all aspects of custom configuration has been challenged and works according to user requirements.
Acceptance Criteria	All alarms, custom screens, graphs, events and custom Excel graphs/reports have been identified and verified to work in accordance to user specifications.
Procedure	1. Complete the tables below in their entirety. 2. Place N/A with initials and date for any non-applicable tests or table blocks. 3. Alarms: Identify each pen configured for an alarm. 4. Document alarm configuration and test performed to challenge each alarm.

Pen Identification	Alarm Configuration	Test Performed	Test Results Pass/Fail Initial Date

Performed By: _____ Date: _____

Verified By: _____ Date: _____

6.2.6 Custom Verification (Continued)

Pen Identification	Alarm Configuration	Test Performed	Test Results Pass/Fail Initial Date

Maths: Identify each pen configured for Math. Document math expression and test performed to challenge math expression. Use additional sheets if applicable.			
Pen Identification	**Math Expression**	**Test Performed**	**Test Results Pass/Fail Initial Date**

Performed By: _____ Date: _____

Verified By: _____ Date: _____

6.2.6 Custom Verification (Continued)

Pen Identification	Math Expression	Test Performed	Test Results Pass/Fail Initial Date

Dual Redundancy of data storage
Indicate if Dual Redundancy of data storage is configured: Yes No

If Yes complete Table below. If No place single line through table, indicate N/A, place initials and date on line.

Successfully transfer data to recordable medium. Place one at a time graph on TrendViewer. Print graph from each medium. Verify data is identical on each graph.			
Pen	**Graph Value (Floppy)**	**Graph Value (PCMCIA)**	**Test Results: Pass/Fail Initial/Date**

Performed By: _____ Date: _____

Verified By: _____ Date: _____

6.2.6 Custom Verification (Continued)

Pen	Graph Value (Floppy)	Graph Value (PCMCIA)	Test Results: Pass/Fail Initial/Date

Performed By: _____ Date: _____

Verified By: _____ Date: _____

6.2.6 Custom Verification (Continued)

Totals: Identify each pen configured for totals.

Document expression and test performed to challenge expression.

Pen Identification	Expression	Test Performed	Test Results Pass/Fail Initial Date

Performed By: _____ Date: _____

Verified By: _____ Date: _____

6.2.6 Custom Verification (Continued)

1. Attach a Screen Shot for each Custom Screen designed (Print from Screen Designer) and annotate configuration. Label each Custom Screen Attachment 6.2.6-Custom Screen (1-XX)
2. Sign and initial each screen. For each attachment view custom screen on recorder, compare custom screen to printed attachment from Screen Designer and verify displayed screen matches user specification.

Screen Name	**Test Results Pass/Fail Initial Date**	**Comments**

Performed By: _____ Date: _____

Verified By: _____ Date: _____

6.2.6 Custom Verification (Continued)

Graphs	
1. Identify each graph created on TrendManager Pro. 2. Challenge data displayed on each graph is as configured and accurate. 3. Use additional sheets if necessary.	
Graph Name	**Test Result Pass/Fail Initial/Date**

Performed By: _____ Date: _____

Verified By: _____ Date: _____

6.2.6 Custom Verification (Continued)

Category	
Excel Graphs/Worksheets	
1. Identify each Excel Worksheet /Graph created on TrendManager Pro. 2. Challenge data displayed on each graph is as configured and accurate. 3. Use additional sheets if necessary and challenge data is as configured.	
Excel Name	**Test Result Pass/Fail Initial/Date**

Performed By: _____ Date: _____

Verified By: _____ Date: _____

6.2.6 Custom Verification (Continued)

Events			
1. Identify each configured event and verify event triggers as expected. 2. Manually force each event cause and document event effect occurred. 3. Use additional sheets if applicable.			
Event Name	**Cause**	**Effect**	**Test Result Pass/Fail Initial/Date**

Performed By: _____ Date: _____

Verified By: _____ Date: _____

6.2.7 21 CFR § 11 Compliance

Purpose	To ensure system complies with regulatory requirements in regards to electronic records.
Acceptance Criteria	System complies with regulatory requirement in regards to electronic records.
Procedure	1. Complete Table below. 2. Excerpts of 21 CFR § 11 are included for clarity.

21 CFR § 11
11.10(b) The ability to generate accurate and complete copies of records in both human readable and electronic form suitable for inspection, review and copying by the agency. 1. Save a data sample to diskette or PCMCIA card. Start TrendViewer or applicable software and generate graph detailing saved data. Expected results: Data is generated in a readable form suitable for inspection, review and copying. Test Results: Pass/ Fail Initial / Date _____
11.10(c) Protection of records to enable their accurate and ready retrieval throughout the records retention period. 1. Identify SOP which details data retrieval and retention. _____ 2. Verify SOP provides necessary protection of data through retention period, including backups, fire proof storage, etc. Test Results: Pass/ Fail Initial / Date _____
11.10(d) Limiting system access to authorized individuals 1. Identify SOP which details system security. _____ 2. Verify password setup enabled_____ Access previously challenged in OQ section 6.2.2. Test Results: Pass/ Fail Initial / Date _____

Performed By: _____ Date: _____

Verified By: _____ Date: _____

6.2.7 21 CFR § 11 Compliance (Continued)

11.10(e) Use of secure, computer-generated, time-stamped audit trails to independently record the date and time of operator entries and actions that create, modify, or delete electronic records. Record changes shall not obscure previously recorded information. Such audit trail documentation shall be retained for a period at least as long as that required for the subject electronic records and shall be available for agency review and copying.

1. Verify that events have been created for minimally the following Causes:

   Start and Stop of Logging
   Setup Changes
   Recorder Power up
   Disk or PC Card Full
   Disk or PC Card Removed
   Test Results: Pass/Fail Initial/Date _____
2. Review event list created in 6.2.6 – Events. Verify event list details date and time for each event.
   Test Results: Pass/Fail Initial/Date _____

11.10(g) Use of authority checks to ensure only authorized individuals can use the system, electronically sign a record, secure, time-stamped audit trails for operator actions on the records.

11.10(i) Determination that persons who develop, maintain, or use electronic records and signatures have the education, training and experience to perform their assigned tasks.

1. Identify SOP which details training. _____
2. Verify SOP provides necessary direction relating to electronic records and signatures.

Test Results: Pass/ Fail Initial / Date _____

11.10(k) Use of appropriate controls over systems documentation including:

(1) Adequate controls over the distribution of, access to, and use of documentation for system operation and maintenance.

(2) Revision and change control procedures to maintain an audit trail that documents time-sequenced development and modification of systems documentation.

1. Identify SOP which details documentation control. _____
2. Verify SOP provides necessary detail in regards to electronic records and signatures.

Test Results: Pass/ Fail Initial / Date _____

Performed By: _____ Date: _____

Verified By: _____ Date: _____

6.2.8 Support Software, TrendViewer, TrendManager Pro and Screen Designer

Purpose	To ensure the support software performs in accordance to manufacturers specifications.
Acceptance Criteria	Support software performs in accordance to manufacturers specifications.
Procedure	Complete the tables below in their entirety.

TrendViewer			
Step	**Expected Result**	**Actual Result**	**Performed by Initial / Date**
TrendViewer previously tested in 6.1.14. Document if TrendViewer displayed data.	Graph Displayed		

1. TrendManager Pro
2. Challenge Import / Export Data Configuration.
3. Save Recorder configuration to disk and start TrendManager Pro.
4. Document name of recorder from export: _____
5. Select Import, Setup and verify directory reflects where diskette is stored. Select YES
6. Expected results: Recorder name identified in Step 2 is now listed in Recorder Panel. Test Result Pass/Fail _____
7. Click on Recorder Name and Select Open.
8. Select 1st instance of recorder configuration and Select OK.
9. Modify Recorder Name to OQ Challenge
10. Save changes by selecting OK then YES Overwrite.
11. Reopen Recorder Configuration and select Transfer Icon.
12. Verify Directory reflects actual drive and select Yes.

Performed By: _____ Date: _____

Verified By: _____ Date: _____

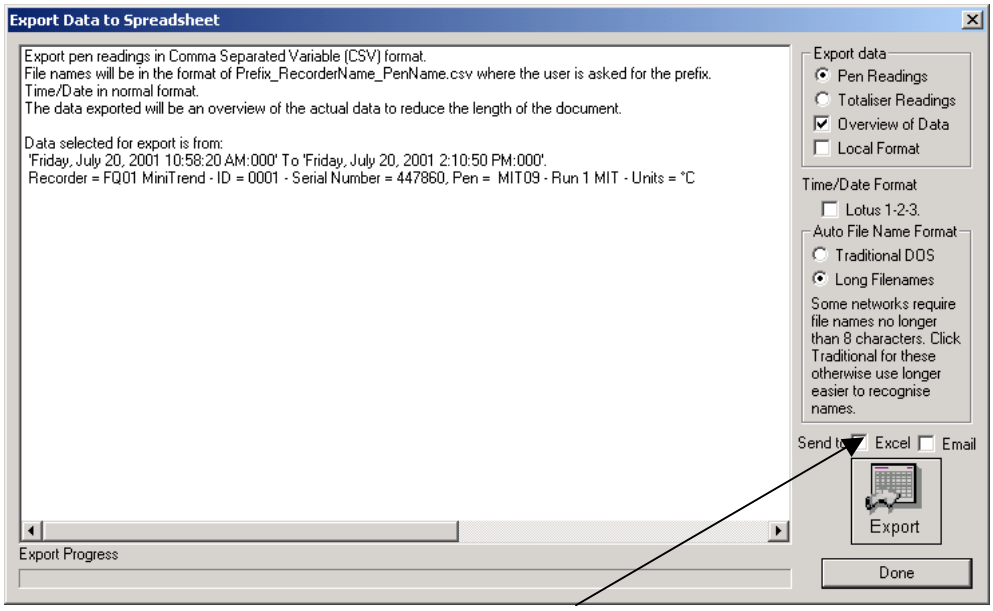
6.2.8 Support Software, TrendViewer, TrendManager Pro and Screen Designer (Cont)

13. Reload configuration on recorder.
14. Verify that recorder name is now reflected as OQ Challenge. Test Result Pass/Fail _____
15. Return recorder name to original value.
16. Challenge Default Report.
17. Select recorder identified in Step 2 from Recorder Panel by double clicking.
18. Select Print Icon
19. Select 1st Instance OK
20. TrendManager Pro (Continued)
21. General Tab Select Print General Setting and Pen Hardware Settings
22. Select Pens Tab.
23. Add Pen 1 through Pen 4 if configured else only configured pens. Document # of Pens if not 4. _____
24. Click Analogues
25. Add Analog 1 through Analog 4 if configured else only configured analogs. Document # if not 4. _____
26. Select Print
27. Select desired printer and Landscape
28. Label each sheet of report 6.2.8 Print
29. Expected results: Report detailing Pen Configuration and Analog configuration will print for each of the selected Pens and Analogs 30. Test Result Pass/Fail _____.
31. Challenge Default Report.

Performed By: _____ Date: _____

Verified By: _____ Date: _____

6.2.8 Support Software, TrendViewer, TrendManager Pro and Screen Designer (Cont)

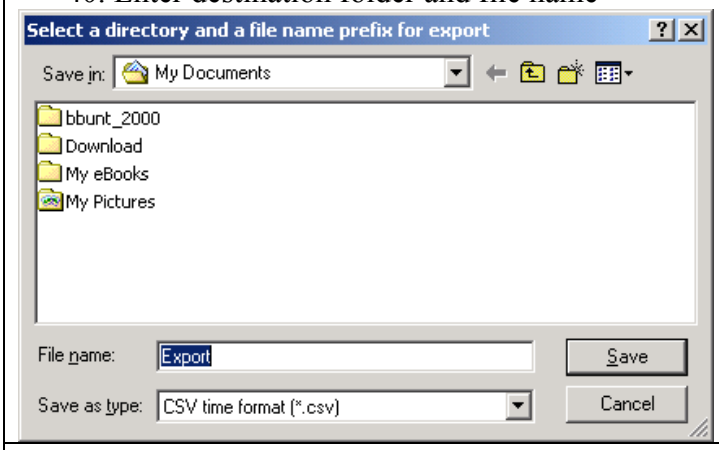
32. Import data from Recorder
33. Default Graph is displayed on screen.
34. Select View Data As Icon . 
35. Select Print Icon. Verify correct printer selected and label 6.2.8 Data View.
36. Click on X to close Window.
37. Select Spreadsheet Export Icon

38. Above figure appears select Send to Excel
39. Click Export Icon

Performed By: _____ Date: _____

Verified By: _____ Date: _____

6.2.8 Support Software, TrendViewer, TrendManager Pro and Screen Designer (Cont)

40. Enter destination folder and file name



41. Document selected Folder and File Name: _____

42. Expected Results: Excel opens displaying graph data.
    Test Results Pass/Fail: _____

43. Format Excel data so that all data is visible.

44. Print Excel Data and label 6.2.8 Export

45. Select Done button on TrendManager Pro.

46. Select **Printe**r Icon – **Standard Print**

47. Select Applicable Printer. **OK**

48. Label 6.2.8 Standard Print.

49. Select **Printe**r Icon – **Legend Print**

50. Select Applicable Printer. **OK**

51. Label 6.2.8 Legend Print.

52. Compare all data including date and time and number format of Excel data to date and time of 6.2.8 .Data View.

53. Expected Results: Data is for the same period and format on both Excel and internal reports.
    Test Results Pass/Fail: _____

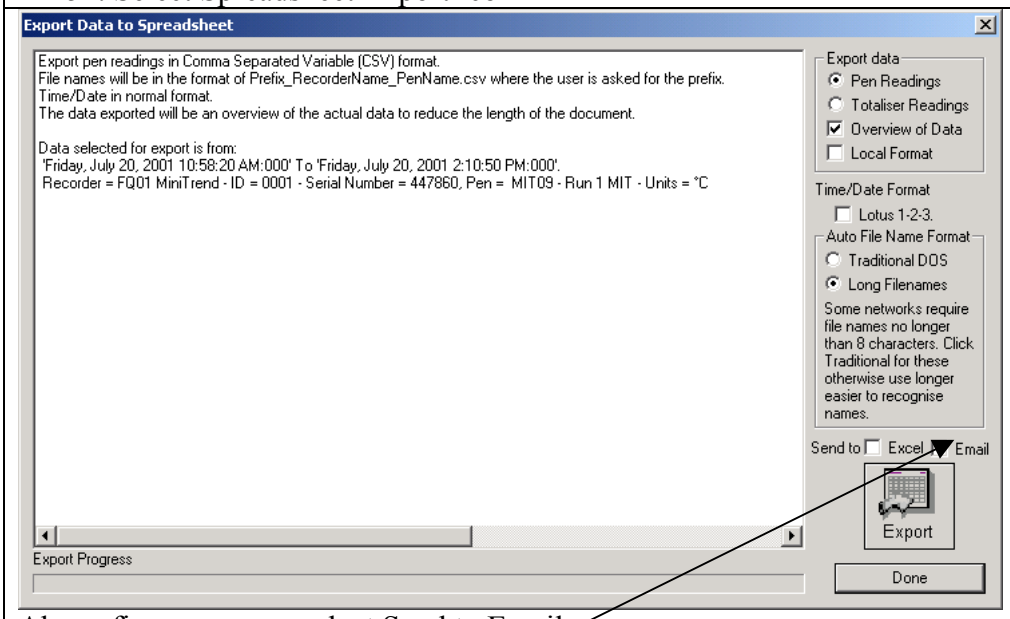
Performed By: _____ Date: _____

Verified By: _____ Date: _____

6.2.8 Support Software, TrendViewer, TrendManager Pro and Screen Designer (Cont)

Challenge Email Export (Perform only if Mail Service available on test computer)

54. Select Spreadsheet Export Icon



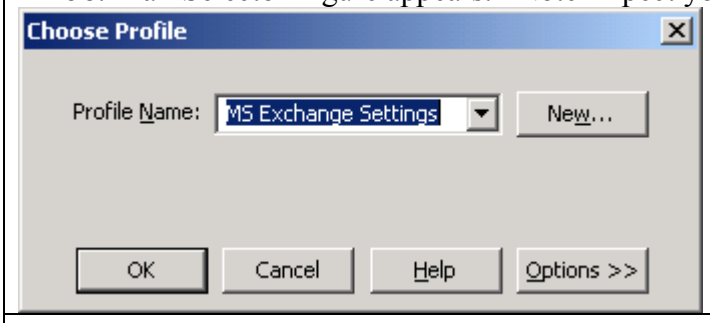
Above figure appears select Send to Email

55. Click Export Icon

56. Enter desired destination folder and name: Document_____

57. Select Save

58. Mail Selector Figure appears. Note Expect your specific mail service.



59. Select OK

60. Expected Results: Mail Service Opens with the data in an attachment as defined in Step 46.

Test Results Pass/Fail: _____

Performed By: _____ Date: _____

Verified By: _____ Date: _____

6.2.8 Support Software, TrendViewer, TrendManager Pro and Screen Designer (Cont)

Graphical devices, called ***Widgets***, are positioned on to a blank template representing the recorder's screen. The widgets are made up from individual objects which can be modified to suit the users requirements. Each widget displays data in different formats e.g. Chart, Bargraph, or Digital readouts. These can be used in conjunction with Bitmaps to create an exclusive screen design.

The Widgets are:-

- **DPM - Digital Panel Meter** 
- **Bar - Bargraph with Embedded DPM widget** 
- **Chart - Traces displayed on a graph** 
- **Bitmap - Bitmap images load as a widget** 
- **Events List - Lists activity on the recorder** 
- **Status Bar - Displays system information** 

Perform this challenge if no custom screens have been created or all of the Widgets have not been utilized on custom screens. Individual testing of custom screen was completed in 6.2.6

Performed By: _____ Date: _____

Verified By: _____ Date: _____

6.2.8 Support Software, TrendViewer, TrendManager Pro and Screen Designer (Cont)

Widgets will appear in the recorder pen colour order.

Extra text can be added at any time. **See "User Defined Text" on page 36.**

To select the whole widget hold down the shift key whilst selecting the widget.

Pressing delete, with any part of a widget selected, will delete the whole widget.

Right click on the mouse button to access copy, cut and paste options.

Widgets can be resized when objects are toggled off/on in the Objects tab.

Set the data source for a widget by selecting the Set Source icon. 

Use the Go icon to animate the widgets on or off the template. 

Use the directional arrows on the keyboard to help position widget objects.

Challenge Widgets.
1. Start Screen Designer software..
2. A blank template is displayed.
3. Click on Expert Mode Icon. 
4. Click on DPM Widget Icon located on left side of screen
5. DPM Widget appears on template. Place upper left corner of screen.
6. Document Color of Pen 3 _____
7. Select Set Source Icon 
8. Enter Pen 3 in Set Source Window enter valid Zero and Span for Pen.
9. Expected Results is that Widget changes from default color of Pen 1 to Pen 3 color identified in Step 5. 10. Test Results Pass/Fail: _____
11. Select Add Text Icon 

Performed By: _____ Date: _____

Verified By: _____ Date: _____

6.2.8 Support Software, TrendViewer, TrendManager Pro and Screen Designer (Cont)

12. Edit User Definable Text Window appears. Select Add.
13. Enter Text Challenge.
14. Select whole DPm widget and go to the objects tab.
15. Select Label 3 and turn off. Select Custom Text for label.
16. Expected results: Label 3 displaying Text Challenge is displayed on screen Test Results Pass/Fail: _____.
17. Toggle On/Off Alarm Markers. Select whole widget go to the objects tab.
18. Toggle Alarm Marker 1 off. Expected results Up Arrow is no longer visible. Test Result Pass/Fail: _____
19. Toggle Alarm Marker 2 off Expected results Down Arrow is no longer visible. Test Result Pass/Fail: _____
20. Add Bar Widget by clicking on Bar Widget Icon.
21. Place below DPM Widget.
22. Select Bar Object. Red Handles should appear.
23. Select Bar General Level Cap toggle On. Select Cyan Color.
24. Expected results single line appears at maximum current value. Test Result Pass/Fail: _____
25. Select Bar Type from Bar General. Select Down.for Bar type
26. Expected results level display (color indication) will be displayed in reverse order. 27. Test Result Pass/Fail: _____
28. Select Set Source Icon and enter Pen 2.
29. Select Bar Object. Select Based for Bar type
30. Change Base Point to 35.

Performed By: _____ Date: _____

Verified By: _____ Date: _____

6.2.8 Support Software, TrendViewer, TrendManager Pro and Screen Designer (Cont)

31. Expected results are bar only displays from 35 to 50%. Test Result Pass/Fail: _____
32. Select Scale General Tab. More Tab Toggle off Baseline.
33. Expected results are graduation lines remain but base line is no longer displayed. Test Result Pass/Fail: _____
34. Select Chart Wizard Icon. Place Below Bar Widget.
35. Select Set Source Icon and click add to enter Pen 1.
36. Select Chart Object and select Traces Tab. Toggle Trace 1 visible to No.
37. Expected results are trace is no longer displayed on Template. Test Result Pass/Fail: _____
38. Return Trace 1 back to visible = Yes.
39. Click on Pointer Object.
40. From Pointers General Tab select Pointer size. Select Small.
41. Expected result is that pointer changes from large to small.. Test Result Pass/Fail: _____
42. Scale General More Tab. 43. Toggle off and on the following: Expected results:
44. Baseline switches on/off the main scale line Test Result Pass/Fail: _____
45. Major Grads toggles on / off the major graduations. Test Result Pass/Fail: _____
46. Minor Grads toggles on/off the minor graduations. Test Result Pass/Fail: _____

Performed By: _____ Date: _____

Verified By: _____ Date: _____

6.2.8 Support Software, TrendViewer, TrendManager Pro and Screen Designer (Cont)

47. Limit font change to medium. Changes the font size for the two labels at either end of the scale. Test Result Pass/Fail: _____
48. Set Automatic to Off Decimal places enter 3. Expect 3 decimal places to be displayed. Test Result Pass/Fail: _____
49. Leave settings to: Baseline – Off, Major Grads- On, Limit font small and decimal places 3.
50. Select Add New Template Icon. 
51. Select New Events List Widget  Position at top of screen.
52. Select New Status Bar Widget  Position below Events List
53. Leave default settings on.
54. Create two additional templates.
55. Modify third template by placing new DPM Widget and setting to Pen 1.
56. Modify fourth template by placing a new Chart Widget and setting to Pen 2.
57. Display four templates in Tile Mode. Go to Window and select tile.
58. Verify four templates may be displayed at one time in Tile Mode with MiniTrend screen size. Test Result Pass/Fail: _____
59. Prepare 1st Layout for transfer. Set the source of the data. 60. Set recorders screen ready for transfer to recorder 
61. Verify and Save the Layout in file frompc.tv as file type lyt on to floppy disk.

Performed By: _____ Date: _____

Verified By: _____ Date: _____

6.2.8 Support Software, TrendViewer, TrendManager Pro and Screen Designer (Cont)

62. Insert disk in recorder and Load Layout.
63. Verify Screen Designed in layout one is now displayed on recorder. Test Result Pass/Fail: _____

Performed By: _____ Date: _____

Verified By: _____ Date: _____

6.2.9 Validation Test Equipment and Calibration

List the validation equipment used in the execution of this protocol in the table below. Indicate the equipment manufacturer, model number, serial number, and calibration date.

Equipment Description	Manufacturer	Model Number	Serial Number	Date Calibrated	Due Date for Calibration

Comments:

Performed By: _____ Date: _____

Verified By: _____ Date: _____

Protocol Completion

All items in this protocol were reviewed and found to be acceptable. All variations or discrepancies were satisfactorily resolved.

Review Signatures	Date
_____	
_____	
_____	

Performed By: _____ Date: _____

Verified By: _____ Date: _____